UNESCO - PANOS - YRG CARE

Regional Consultation On HIV Prevention Information In South Asia

JUNE 26-27, 1999

CHENNAI, INDIA

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Agenda for the Consultation on HIV Prevention Information addressing the spread of HIV/AIDS in South Asia. June 26-27, 1999 at Chennai, India

26 June	Particulars of session	Resource persons
0800-0845	Breakfast	See inauguration agenda
0845-0930	Inauguration	As above
0930-1000	Settling down/ Group photographs	
1000-1030	Introductions: name, organization and interests, expectations from the workshop	
1030-1045	A report of the previous consultations	Aruni
1045-1100	PANOS, its mission	Mitu Verma
1100-1300	A family story: game Discussion on issues raised in the game	Suniti Solomon Anjali Gopalan
1300-1330	Lunch	
1330-1415	Recognizing the special needs of persons infected with HIV and families affected by HIV	Suniti Solomon
1415-1515	Sexuality: speaking up	Anjali
1515-1530	Summing up for Day 1	By arrangement
1530-1600	Tea Break	
1600	Departure to Mahabalipuram. Dinner at "The Golden Sun', a sea side resort. Bharatanatyam by Dr. Sreedhara	

27 June	Particulars of session	Resource persons
0915-0930	Recap of day 1	By arrangement
0930-1000	"AIDS, an old disease still new: a reporter's dilemma"	Pramod
1000-1130	HIV prevention information in South Asia: Brain storm on the situation, concerns, challenges, what is working, evaluation techniques	C Y Gopinath
1130-1145	TEA Break	
1145-1245	Developing effective prevention information: Cross Fertilizing ideas, Group Work	
1245-1330	Lunch	
1330-1430	Groups report back on their discussions	
1430-1530	Multisectoral approach to prevention information	Suniti Solomon Akila Sivadas
1530-1600	End of meeting facilitation	Anjali

AIDS, an Old Disease, Still New: A Reporter's Dilemma

By G. Pramod Kumar

AIDS[1], which made its documented entry into India in 1986 is an old disease, that is still new.

Thirteen long years of its presence in the country have made it old while its complexities and the bearish nature of its emergence make it still new. We have seen a sizeable part of the problem and its catastrophic characteristics, but a substantial part that will have far reaching consequences of still bigger proportions is yet to emerge. As the coverage of AIDS in the Indian media loses steam, the reporter who has been watching the epidemic closely realises that this is going to be the biggest dilemma he/she is going to face in his/her attempts to sustain media interest. Covering an old disease that is still new challenges the very basic nature of media mechanism. But this dilemma needs to be resolved if one wants to take media along in one's campaign against the disease.

But before proceeding further, let's face the fact that coverage of health is not a priority for much of the mainstream media in India as much as it is not a priority for the political system and the Government.[2]. In this country where realpolitik is almost like an obsession for much of the mainstream media, the space health manages to get is sparse. And AIDS has to fight with the huge double-burden of diseases and developments in modern medical scene for that little space. In addition, being an "old" disease which hasn't yet acquired epidemic proportions, AIDS loses out on the question of newsworthiness. The reporter has no answer when the newsmanager asks, and justifiably so, "What is new ? ". We should also keep in mind that media measures truth in terms of what is expedient and what is popular.

As a reporter, who has been covering AIDS for the last several years in a state which has the best record in handling the disease through the combined efforts of NGOs, international agencies, Government and the media, I have been gripped by this dilemma for quite some time now. Compared to the rest of the world, particularly the West, there is practically no published study on "AIDS and Media" in India except one or two of no significant value. Hence, my argument is based on my personal experience and information from somewhere else and, is supported by the yet to be documented nature of coverage of the disease by the Indian media.

Understanding the dynamics of the media in handling public health issues like AIDS is crucial on many areas like shaping the opinion of society, addressing the specific needs of specific groups or setting the agenda of policy makers, governments and even the international agencies. [3] For instance, a pilot study by Mr.B.Westwood of the Queensland Centre for Public Health in Australia on "Public health reporting and the media" had proposed "that a better understanding of how newspaper reporting deals with health issues is of great importance to public health professionals. It may help utilise the print media to promote information on public health issues to the population in a positive and attention-catching manner".

A cursory glance of the nature and extent of coverage of AIDS during the last thirteen years is important to understand the evolution of the disease in the Indian media and also the reporter's dilemma. When it first

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[1] For convenience, all references to AIDS denote HIV/AIDS

[2] Economic and Political Weekly, editorial, "Devaluing Development," March 21, 1998.

[3] Convention on mass communication, Annenberg Washington Programme and Centre for Health Communication, Harvard School of Public Health, October, 1993. Introductory remarks by Prof. Mark Moore on the objectives. Among other things, he said: "we hope to learn how mass communication shapes society's ability to deal with its problems, gets issues on the public and governmental agenda, reinforces or alters norms and attitudes within the general population and imparts specific information to specific individuals that changes the way those individuals behave".

appeared in India, demolishing the myth of the foreignness of the disease[4] and our incredulity about our invulnerability, it indeed made headlines. (Even in America and Europe, AIDS was treated first as an African and then as a homesexual disease. For us who boast of a 5000 year old civilisation, it was a product of the decadent West and we thought our cultural values will protect us). It fit the demands of newsworthiness perfectly. It had all the ingredients for a run-of-the-mill, screaming headline. During the subsequent months and years, it evolved as a news item and also as a favourite theme for feature-stories. First it was the shock value, peppered with myths, half-truths and blunders, for several months, then the tragedies, doomsday predictions and ultimately the human interest.

As many journalists covering AIDS realised, it was not easy to sustain the interest on a single disease for such a long period of time. News has its demands like the five Ws and one H[5]. Even feature-stories have their demands. Starting with the shock value of the news-break, as a reporter, I think we have exhausted most of the possible angles: tragedy, human misery, women, children, drama, care, quacks and occasional sob stories.. We are now left with very limited options and are at a loss as to how to sustain the interest on the disease though it is still in its nascent stage and what we have seen so far is only the proverbial tip of the iceberg. Interestingly, the early media coverage had set much of the tone, the terminology and metaphorical conventions that still operate while talking about AIDS (hapless victims, AIDS patients, AIDS victims and those images of fear)

At this point, it will be interesting to look at how the Western media handled AIDS. The situation is identical in some respects, but quite dramatic things happened in the West for which the disease has been around since 1981 when a report on it appeared for the first time[6]. The evolution of the disease in the Western media and its success in creating a favourable impact offers several useful lessons to us. It also tells us how certain dramatic twists could fuel the interest of people from time to time giving a fresh impetus each time. One would also notice that such things did not happen in India, hence could be tried. The behaviour of the American media as illustrated by a comprehensive study[7] will help us face many situations which we come across in India.

The first media report in the US appeared in the New York Times on August 8, 1982. The report, "A disease's spread provokes anxiety" focussed attention on a growing health crisis in the homosexual community that was baffling the medical world. Though "Time" had reported earlier on a disease causing opportunistic infections in gay men, this was the first time that the term "acquired immunity deficiency syndrome" was used. Later the same year, the Washington Post too started reporting on AIDS by publishing a report on the death of an infant. "Over the next three years, the mainstream media confronted the challenge of reporting on a deadly and mysterious health problem in a responsible manner – to inform and not to inflame, to educate and not to alarm"[8].

In the earlier part of the epidemic, the story was indeed relegated to the margins of social deviance. But later on they did mobilise public attention around an extraordinarily difficult social issue. In 1985, more than 150 AIDS stories were broadcast by three major TV networks' evening news. This was more than double the combined TV coverage for the whole of 1983 and 84. These initial years were marked by stories that often focussed on the dramatic aspects of the disease, its progressive nature, the death-toll among the high risk groups and its potential to affect the public at large. In the next ten years, media coverage moved well beyond its early focus with the content of reporting often pushing AIDS to the top of the news agenda.

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[4] Susan Sontag's interpretation of AIDS as modern plague. Anne K.Mellor in her introduction to The Last Man by Mary Wollstonecraft Shelly, University or Nebraska Press, 1993, ISBN 0803292171

[5] What, Why, When, Where and How

[6] D.T.Durack, "opportunistic infections and Kaposi's sarcoma in homesexual men" (editorial), New England Journal of Medicine, 1981, 305 (24).

[7] "AIDS in the News Media, 1985 to 1996", Columbia Journalism Review, CJR, July/August, 1996.

[8] CJR, July/August, 1996

Overall, what the press did best was to maintain broadbased coverage. AIDS did not become a political story or a story focussed solely on homosexuals or IV drug users. Instead it tended to examine the disease's impact on multiple groups and communities or put a human face to the disease to demonstrate AIDS' impact on individuals and their families.

The transformation then on is interesting. In 1987, AIDS was the primary focus on all stories in which there was a mention of the disease. But by 1994, only 30 per cent had AIDS as the main focus with the rest only referring to the disease while reporting on something else. One point is extremely relevant to us here, particularly when talking about prevention information. If in the mid-80s the greatest portion of coverage on the disease was on information about the transmission and prevention, by 1989, the public's level of knowledge on many aspects of AIDS transmission had topped out. The percentage of stories covering prevention peaked in 1987 (31 per cent) while in 1990, bulk of the stories focussed mainly on information on transmission (21 per cent).

In fact the prevention information in the media was on the wane and something dramatic had to happen to drive afresh the public knowledge. And it happened in 1991 with Magic Johnson's dramatic announcement of his HIV status and retirement from NBA. AIDS coverage swelled unprecedently. In a single week there were 259 stories on AIDS with a large number writing on prevention and protection. AIDS coverage looked as if it was starting all over again. And most importantly, at the same time, from the realm of general reporting, it crossed over to sports and celebrity journalism. The issue thus became more broadbased than ever.

After 1991, the coverage was never the same. Celebrity activists lent a new vigour to the campaign and fundraisers became a regular feature. In 1995, a study[9] showed that Magic Johnson and Elizabeth Taylor were the two individuals who were most recognised by the public as national leaders in this area. In 1996, the biggest AIDS stories were from sports: Magic Johnson's return to sports and Tommy Morrison's banishment from the boxing ring after he tested positive.

There were some dissenting voices too. But these discordant notes also collaborate the role of dramatic developments or popular interest in influencing the treatment of AIDS by media. Prof. Everett M. Rogers of the University of New Mexico says in his analysis of "Media Coverage, Polling Data and Federal Funding" that for nearly two years after the new England journal of medicine recognised the association between the syndrome and homosexual men, AIDS was virtually ignored by the major national print and broadcast news media, the public and Federal funding agencies. The discovery of the human immunodeficiency virus in 1983 sparked somewhat more interest in the scientific aspects of the disease and its transmission. "But it was not until a Hollywood leading man and a young schoolboy succumbed to the disease, two people with whom the white, middle class heterosexual mainstream could identify with, that the media and the public recognised AIDS as a social phenomenon and a threat to public health. "The media discovered AIDS not because of the statistical measure of its world importance, Rogers asserts, "but because two famous people, Rock Hudson and Ryan White, got it and gave the story a human touch".

The 1990s also saw the coverage of drug trials and stories of success. The media had a new paradigm to write on, that AIDS was not death. The combination therapy bred a new series of stories, stories on how AIDS wards are becoming empty and how people are coming to terms with a new prospect of life and how people are going back to work. The ongoing research and drug trials still offer much scope to the Western media to write about. It may also be noted, however, that the burden on the Western media to sustain the interest on the disease is less as levels of awareness and intervention are remarkably high there.

The coverage of AIDS in Indian media at present is identical to the situation in the West in 1990. Nothing dramatic has happened here to give a fresh propulsion. No celebrities or popular figures have come out actively as campaigners and given the disease a human face. Other than the images of misery and poverty, AIDS is yet to attain a face like that of Magic Johnson, Arthur Ashe or Greg Luganis. At this juncture the

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[9] Kaiser Family Foundation's AIDS media monitoring project

onus is entirely on the managers of the AIDS control and prevention, committed campaigners, NGOs and creative media people to drive it further for several years to come. One has to admit that much of the prevention information will be the same and will be repetitive, but one has to look for innovative ways to dress them up as newsworthy and new. Here the confession byProf. Mark L. Rosenberg of the Centres for Disease Control and Prevention, Harvard School of Public Health, that he indulges in a kind of "creative epidemiology" to get media attention for his injury mortality statistics, comes extremely handy. This strategy has worked as a Washington Post article reported: 'Firearms kills more teenagers than cancer, heart diseases, AIDS and all other biological diseases combined". Could be tried here too.

So it is a question of innovative social marketing of AIDS through the news columns of the media. As nothing dramatic is happening to give a fresh impetus to the media interest, the prevention and control programs should have a media component built into it. This component should be carefully crafted and tinkered with from time to time so that the dissemination of information continues all the time. Feedback or inputs should be from active journalists who know the demands of the newsroom. The quality of feedback or consultation is extremely important in this respect as one wrong step could derail the intentions. Establish media monitoring cells all over the place and create a network of committed, serious reporters/writers in place.

My suggestions are:

Bring in the celebrity element right away. Bring in sportsmen, film stars, politicians, important personalities and literary figures for campaigns in different forms. Create events at regular intervals that will get reported. Mobilise activities that will get reported. Play with the five Ws and one H. Develop an informal, but methodical system of information-flow from officers concerned, NGOs and the AIDS administration to the media on a constant basis. Make carefully crafted statements to catch the attention of the media, not to make sensation, but to repackage messages. At this point of time, one thing that could work is to play up the positive aspect of the disease, the changing paradigm that "AIDS is not Death".[10] The response to an interview with Dr.Sunithi Solomon with such a headline in a Malayalam Magazine and the follow-up coverage is a case in point.

Ultimately, it will be the realisation that we still have several years to go before we can relax that will work.

[10] Arogya Maasika, Mathrbhoomi Publications, Calicut.

India

Epidemiological Fact Sheet

on HIV/AIDS and sexually transmitted diseases

UNAIDS
UNICEF • UNDP • UNFPA
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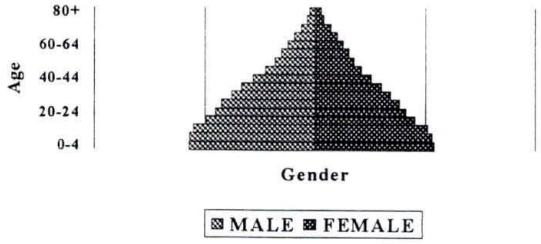
World Health Organization

Country information

Population pyramid, 1997



Indicators	Year	Estimate	Source
Total Population (thousands)	*1997*	960,178	UNPOP
Population Aged 15-49 (thousands)	*1997*	494,756	UNPOP
Annual Population Growth			
% of Population Urbanized	*1996*	27	UNPOP
Average Annual Growth Rate of Urban Population	*1980-1996*	3	UNPOP
Net Migration Rate			
GNP Per Capita (US$)	*1995*	340	World Bank
GNP Per Capita Average Annual Growth Rate	*1985-1995*	3	World Bank
Human Development Index Rank (HDI)		138	UNDP
Real GDP Per Capita Rank - HDI Rank		5	UNDP
Gender Related Development Index Rank		118	UNDP
Gender Empowerment Measure Rank		86	UNDP
Human Poverty Index Value (HPI)		36.7	UNDP
% Population Economic Active	*1991*	38	ILO
Unemployment Rate			
Total Adult Literacy Rate			
Adult Male Literacy Rate			
Adult Female Literacy Rate			
Male Secondary School Enrollment Ratio	*1990-1995*	59	UNESCO
Female Secondary School Enrollment Ratio	*1990-1995*	38	UNESCO
Crude Birth Rate (births per 1,000 pop.)	*1996*	26	UNPOP
Crude Death Rate (deaths per 1,000 pop.)	*1996*	9	UNPOP
Maternal Mortality Rate (per 100,000 live births)	*1990*	570	WHO/UNICEF
Life Expectancy at Birth	*1996*	62	UNPOP
Total Fertility Rate			
Infant Mortality Rate (per 1,000 live births)	*1996*	73	UNICEF/UNPOP
Under Five Mortality Rate (per 1,000 live births)	*1996*	111	UNICEF/UNPOP
% Population Access to Safe Water			
% Population Access to Adequate Sanitation			

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UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance

Global surveillance of HIV/AIDS and sexually transmitted diseases (STDs) is a joint effort of WHO and UNAIDS. The UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance, initiated in November 1996, guides respective activities. The primary objective of the working group is to strengthen national, regional and global structures and networks for improved monitoring and surveillance of HIV/AIDS and STDs. For this purpose, the working group collaborates closely with national AIDS programmes and a number of national and international experts and institutions. The goal of this collaboration is to compile the best information available and to improve the quality of data needed for informed decision-making and planning at national, regional and global levels. The Epidemiological Fact Sheets are a first output of this close and fruitful collaboration across the globe.

Following a series of consultations, the working group and its partners established a framework standardizing the collection of data deemed important for a thorough understanding of the current status and trends of the epidemic, as well as patterns of risk and vulnerability in the population. Within this framework, the Fact Sheets collate the most recent country-specific data on HIV/AIDS prevalence and incidence, together with information on behaviours (e.g. casual sex and condom use) which can spur or stem the transmission of HIV. The data include prevention indicators developed by WHO's Global Programme on AIDS, which aim to measure trends in knowledge of AIDS, relevant behaviours, and a host of other factors influencing the epidemic. Additional indicators – for example, on care and support -- will be included when available.

Not unexpectedly, information on all of the agreed-upon indicators was not available for many countries in 1997. However, the fact sheets do contain a wealth of information which allows identification of strengths in currently existing programmes and comparisons between countries and regions. The fact sheets may also be instrumental in identifying potential partners when planning and implementing improved systems.

The fact sheets can be only as good as information made available to the UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance. Therefore, the working group would like to encourage all programme managers as well as national and international experts to communicate additional information to the working group whenever such information becomes available. The working group also welcomes any suggestions for additional indicators or information proven to be useful in national or international decision making and planning.

Estimated number of people living with HIV/AIDS

In 1997 and during the first quarter of 1998, UNAIDS and WHO worked closely with national governments and research institutions to recalculate current estimates on people living with HIV/AIDS. These calculations are based on the previously published estimates for 1994 (WER 1995; 70:353-360) and recent trends in HIV/AIDS surveillance in various populations. Epimodel 2, a microcomputer programme originally developed by the WHO Global Programme on AIDS, was used to calculate the new estimates on prevalence and incidence of AIDS and AIDS deaths, as well as the number of children infected through mother-to-child transmission of HIV, taking into account age-specific fertility rates. An additional spreadsheet model was used to calculate the number of children whose mothers had died of AIDS.

The current estimates do not claim to be an exact count of infections. Rather, they use a methodology that has thus far proved accurate in producing estimates which give a good indication of the magnitude of the epidemic in individual countries. However, these estimates are constantly being revised as countries improve their surveillance systems and collect more information. This includes information about infection levels in different populations, and behaviours which facilitate or impede infection.

Adults in this report are defined as women and men aged 15 to 49. This age range covers people in their most sexually active years. While the risk of HIV infection obviously continues beyond the age of 50, the vast majority of those who engage in substantial risk behaviours are likely to be infected by this age. Since population structures differ greatly from one country to another, especially for children and the upper adult ages, the restriction of the term adult to 15-to-49-year-olds has the advantage of making different populations more comparable. This age range was used as the denominator in calculating adult HIV prevalence.

Estimated number of adults and children living with HIV/AIDS, end of 1997

These estimates include all people with HIV infection, whether or not they have developed symptoms of AIDS, alive at the end of 1997

Adults and children	**4100000**		
Adults (15-49)	**4100000**	**Adult rate (%)**	**0.82**
Women (15-49)	**1000000**		
Children (0-15)	**48000**		

Estimated number of AIDS cases

Estimated number of AIDS cases in adults and children that have occured since the beginning of the epidemic:

Cumulative no. of AIDS cases	**430000**

Estimated number of deaths due to AIDS

Estimated number of adults and children who died of AIDS since the beginning of the epidemic:

Cumulative deaths	**350000**

Estimated number of adults and children who died of AIDS during 1997:

Deaths in 1997	**140000**

Estimated number of orphans

Estimated number of children who have lost their mother or both parents to AIDS (while they were under age 15) since the beginning of the epidemic:

Cumulative orphans	**120000**

Estimated number of children who have lost their mother or both parents to AIDS and who were alive and under age 15 at the end of 1997:

Current living orphans	**110000**

HIV Sentinel surveillance

This section contains information about HIV prevalence in different populations. The data reported in the tables below are mainly based on the HIV data base maintained by the United States Bureau of the Census and are a compilation of data from different sources, including national reports, scientific publications and abstracts. To provide for a simple overview of the current situation and trends over time, summary data are given by population group, geographical area (Major Urban Areas versus Outside Major Urban Areas), and year of survey. Studies conducted in the same year are aggregated and the median prevalence rates (in percentages) are given for each of the categories. The maximum and minimum prevalence rates observed, as well as the total number of surveys/sentinel sites, are provided with the median, to give the reader an overview of the diversity of HIV-prevalence results in a given population within the country.

The differentiation between the two geographical areas Major Urban Areas and Outside Major Urban Areas is not based on strict criteria, such as the number of inhabitants. For most countries, Major Urban Areas were considered to be the capital city and – where applicable – other metropolitan areas with similar socio-economic patterns. This distinction assumes that capital cities in many countries have specific characteristics related to the prevalence of higher risk behaviour and a concentration of HIV infections. The term Outside Major Urban Areas considers that most sentinel sites are not located in strictly rural areas, even if they are located in somewhat rural districts. Site/study-specific data on which the medians were calculated are printed in an annex at the end of this fact sheet.

HIV prevalence in selected populations in percent

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Pregnant women	Major Urban Areas	N_Sites					1	1	3	3	4	3	2	3	2	2
		Minimum					0	0	0	0	0	0	0.6	0	0.5	0.69
		Median					0	0	0	0.01	0.26	0.7	1.55	0.3	1.44	2.47
		Maximum					0	0	0	0.5	0.7	0.8	2.5	2.25	2.38	4.25
Pregnant women	Outside Major Urban Areas	N_Sites				1	1	4	4	8	6	4	8	9	6	1
		Minimum				0.1	0.1	0	0	0	0.1	0	0.6	0	0.25	3.4
		Median				0.1	0.1	0	0	0.56	0.75	0.185	1.83	0.45	2.585	3.4
		Maximum				0.1	0.1	0	0.05	2.44	3.8	1.91	2.5	4.25	4.18	3.4
Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Sex workers	Major Urban Areas	N_Sites				1	1	1	1	2	2	2	2	1		
		Minimum				0.89	8.76	13.2	21.11	0.5	0.7	1.4	1	1.2		
		Median				0.89	8.76	13.2	21.11	17.215	13.65	26.195	26	1.2		
		Maximum				0.89	8.76	13.2	21.11	33.93	26.6	50.99	51	1.2		
Sex workers	Outside Major Urban Areas	N_Sites	1	4	4	3	5	4	5	6	6	3				
		Minimum	0.9	0	0	0	0	0	0	0	1	1				
		Median	0.9	1.5	1.805	1.42	4.94	16.85	19	21.105	23.25	29				
		Maximum	0.9	3.14	3.7	5	8.5	24.23	31.6	33.73	46.8	34.9				
Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Injecting drug users	Outside Major Urban Areas	N_Sites			1	1	1	1	1	1	1		3	4	2	1
		Minimum			0	0	0	8.6	39.1	44.8	67.2		25.4	0	55.7	76.7
		Median			0	0	0	8.6	39.1	44.8	67.2		55	19.185	39.815	76.7
		Maximum			0	0	0	8.6	39.1	44.8	67.2		85.63	61.05	73.26	76.7
Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Prisoners	Outside Major Urban Areas	N_Sites						1		1	1	1		2		
		Minimum						0.4		1	1.4	1.99		0.5		
		Median						0.4		1	1.4	1.99		2		
		Maximum						0.4		1	1.4	1.99		3.5		
Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
STD patients	Major Urban Areas	N_Sites				1	1	1	1	1	1	1	2	2	1	
		Minimum				1	9.7	9.9	3.3	5.3	6.1	2.7	3.78	5	32.6	
		Median				1	9.7	9.9	3.3	5.3	6.1	2.7	32.6	17.7	32.6	
		Maximum				1	9.7	9.9	3.3	5.3	6.1	2.7	36	31	32.6	
STD patients	Outside Major Urban Areas	N_Sites			1	1	1	1	1	4	1	4	21	23	16	6
		Minimum			0.4	0.8	0.6	1.6	1.8	0.9	18	0	0	0	0	4.5
		Median			0.4	0.8	0.6	1.6	1.8	3.3	18	17.785	4.75	4.93	5.6	16.8
		Maximum			0.4	0.8	0.6	1.6	1.8	8	18	6.37	13.87	29.2	15.9	33.0
Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Truck drivers	Outside Major Urban Areas	N_Sites									2		3	8	2	
		Minimum									3.13		2.55	1	4.98	
		Median									3.255		2.7	8.15	6.59	
		Maximum									3.38		5.2	3.8	6.19	

Assessment of epidemiological situation

Assessment of country epidemiological situation

Systematic sentinel surveillance for HIV in adopting unlinked anonymous screening of blood collected for Syphilis serology was planned for 65 sites from 31 states and Union territories of India in 1994. Most sites included STD patients while women attending antenatal clinics were usually only included if the prevalence of HIV had already reached at least 5% in certain risk groups like sex workers or drug users in the respective state. For the injecting drug users, only three states in the north eastern region (Manipur, Mizoram and Nagaland) could provide sizeable numbers in the sentinel clinics. All the states were expected to initiate at least one site by the end of 1994 and new sentinel sites were to be developed to allow for a representative assessment for the each state. Some of the states, however, could not launch the surveillance and not all the initial sites could provide regular data until 1997. Thus, at the end of 1997 results were available from 55 sites of 22 states or union territories. For some of the sites, data were available only for certain years. Out of the four major metropolitan cities of India (Calcutta, Mumbai, Chennai and Delhi) Calcutta did not participate in the sentinel surveillance.

The available results show that the prevalence of HIV among women attending antenatal clinics has gone up from 2.5% (1994) to 4.3 % (1997) in Mumbai, the major metropolitan city in the Western part of India. Similar prevalence (3.4%) was also reported from Pune, another city near Mumbai in the same year. Another city from south India (Pondicheery) also showed 4 % prevalence among the antenatal women in 1996. All other cities outside major urban area documented a prevalence of 0-0.8% with the overall median of 0.8% for all cities outside major urban areas in 1996.
Prevalence of HIV among STD patients for 1996 was 17% and 31% (33% in 1997) in Chennai and Mumbai respectively and between 0% to 16% in cities outside major urban areas (median 5.2 %).

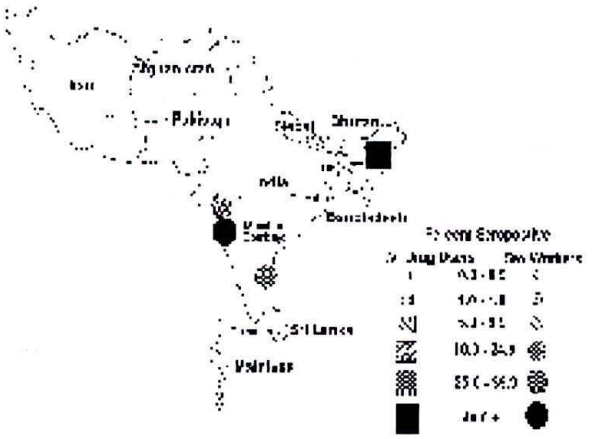
HIV surveillance among injecting drug users has unfortunately been discontinued in two of the three states that initiated this surveillance. HIV levels in Manipur appear to have stabilized around 65%, while results from serosurveys from Calcutta and Chennai show that the prevalence of HIV among IDU is still increasing.

Similarly, serosurvey results among sex workers show that HIV rates increased from less than 1% in 1986 to 15% in 1989 and to more than 50% by 1994 in Mubai whereas the same has remained low in Calcutta (increasing from less than 1% in 1986 to around 5 percent among sex workers by 1995).

Regional maps

Seroprevalence of HIV-1 for Pregnant Women Middle South Asia

Seroprevalence of HIV-1 for Sex Workers and I.V. Drug Users in Middle South Asia



Reported AIDS cases

AIDS cases by year of reporting

1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total	Unknown
0	0	0	0	0	0	0	0	0	0	0	57	45	140	252	523	1078	901	1984		4980	

Date of last report: 30-Nov-1997

AIDS cases officially reported to WHO. Due to gaps in diagnosis, underreporting, and reporting delays, officially reported AIDS cases represent only a portion of all cases in a country. Completeness of reporting varies substantially from one country to another, from less than 10% in some countries with fewer resources to more than 80% in most industrialized countries (please also compare with the section on estimates). Therefore, distribution by age, sex and modes of transmission may not be representative for all people living with AIDS in a given country.

AIDS cases by mode of transmission

Hetero: Heterosexual contacts.
Homo/Bi: Homosexual contacts between men.
IDU: Injecting drug use. This transmission category also includes cases in which other high-risk behaviours were reported, in addition to injection of drugs.
Blood: Blood and blood products.
Perinatal: Vertical transmission during pregnancy, birth or breastfeeding.
NS: Not specified/unknown.

Sex	Trans. group	<94	94/<95	1995	1996	1997	1998	Unkn.	Total	%
All	All									
	Hetero									
	Homo/Bi									
	IDU									
	Blood									
	Perinatal									
	Other known									
	Unknown									
Male	All									
	Hetero									
	Homo/Bi									
	IDU									
	Blood									
	Other known									
	Unknown									
Female	All									
	Hetero									
	IDU									
	Blood									
	Other known									
	Unknown									
NS	All									
	Hetero									
	IDU									
	Blood									
	Perinatal									
	Other known									
	Unknown									

AIDS cases by age and sex

Sex	Age	<1994	94/<95	1995	1996	1997	1998	Unkn.	Total	%
All	All									
	0-4									
	5-9									
	10-14									
	15-19									
	20-24									
	25-29									
	30-34									
	35-39									
	40-44									
	45-49									
	50-54									
	55-59									
	60+									
	NS									
Male	All									
	0-4									
	5-9									
	10-14									
	15-19									
	20-24									
	25-29									
	30-34									
	35-39									
	40-44									
	45-49									
	50-54									
	55-59									
	60+									
	NS									
Female	All									
	0-4									
	5-9									
	10-14									
	15-19									
	20-24									
	25-29									
	30-34									
	35-39									
	40-44									
	45-49									
	50-54									
	55-59									
	60+									
	NS									
NS	All									
	0-4									
	5-9									
	10-14									
	15-19									
	20-24									
	25-29									
	30-34									
	35-39									
	40-44									
	45-49									
	50-54									
	55-59									
	60+									
	NS									

Curable STDs

Control and prevention of sexually transmitted diseases (STD) have been recognized as a major strategy in the prevention of HIV infection and ultimately AIDS. Consequently, monitoring different components of STD control can also provide information on HIV prevention within a country. One of the cornerstones of STD control is adequate management of patients with symptomatic STDs. This includes diagnosis, treatment, and individual health education and counselling on disease prevention and partner notification.

Estimated incidence and prevalence of curable STDs

	Incidence				Prevalence			
STDs	Year	Male	Female	All	Year	Male	Female	All
Chlamydia trach.								
Gonorrhoea								
Syphilis								
Trichomonas								
Comments								
Source								

STD Incidence, men

Prevention Indicator 9: Proportion of men aged 15-49 years who reported episodes of urethritis in the last 12 months.

Year	Area	Age	Rate	N=
1996	Delhi/Haryana-Rural	15-49	2.4	
1996	Delhi/Haryana-Urban	15-49	3.6	
1996	Maharashtra-Rural	15-49	1.7	
1996	Maharashtra-Urban	15-49	2.5	
1996	Tamil Nadu-Rural	15-49	2.8	
1996	Tamil Nadu-Urban	15-49	0.8	
1996	West Bengal-Rural	15-49	1.7	
1996	West Bengal-Urban	15-49	3.2	

Comments:

Sources: NACO

STD Case management (counselled)

Prevention Indicator 6: Proportion of people presenting with STD in health facilities assessed and treated in an appropriate way (according to national standards).

Year	Area	Age	Rate	N=
1996	Calcutta-Urban	All	36.1	
1996	Calcutta-Urban	All	66.5	
1996	Chennai-Urban	All	80.2	
1996	Chennai-Urban	All	88.5	
1996	Delhi-Urban	All	62.5	
1996	Delhi-Urban	All	39.3	
1996	Mumbai-Urban	All	12.5	
1996	Mumbai-Urban	All	27.8	

Comments:

Sources: NACO

STD Case management (treatments)

Prevention Indicator 6: Proportion of people presenting with STD in health facilities assessed and treated in an appropriate way (according to national standards).

Year	Area	Age	Rate	N=
1996	Calcutta-Urban	All	66.5	

Comments: Partner notification only reflected in number, regardless of advice on condom use.

Sources: NACO

Health service indicators

HIV-prevention strategies depend on the twin efforts of care and support for those living with HIV or AIDS, and targeted prevention for all people at risk or vulnerable to the infection. These efforts may range from reaching out to vulnerable communities through large-scale educational campaigns or interpersonal communication; provision of treatment for STDs; distribution of condoms and needles; creating an enabling environment to reduce risky behaviour; voluntary testing and counselling; home or institutional care for persons with symptomatic HIV infection; and preventing perinatal transmission and transmission through infected needles or blood in health care settings. It is difficult to capture such a large range of activities with one or just a few indicators. However, a set of well-established health care indicators -- such as the percentage of a population with access to health care services; the percentage of women covered by antenatal care; or the percentage of immunized children -- may help to identify general strengths and weaknesses of health systems. Specific indicators, such as access to testing and blood screening for HIV, help to measure the capacity of health services to respond to HIV/AIDS-related issues.

Access to health care

Indicators	Year	Estimate	Source
% of births attended by trained health personnel:			
% of pregnant women immunized against tetanus:	*1995-1996*	78	UNICEF
% fully immunized - Tuberculosis:	*1995-1996*	96	UNICEF
% fully immunized - DPT:	*1995-1996*	89	UNICEF
% fully immunized - Polio:	*1995-1996*	90	UNICEF
% fully immunized - Measles:	*1995-1996*	81	UNICEF

Latex condoms are the only technology available that can prevent sexual transmission of HIV/STD. Persons needing protection in situations that carry risk should have consistent access to high quality condoms. National AIDS Programmes implement activities to increase both availability of and access to condoms. The two condom availability indicators below are intended to highlight areas of strength and weakness at the beginning and at the end of the distribution system so that programmatic resources can be directed appropriately to problem areas.

Condom availability (central level)

Prevention Indicator 2: Availability of condoms per capita in the country over the last 12 months (central level).

Year	Area	N	Rate
1996	West Bengal-Urban		1.4
1996	West Bengal-Rural		0.5
1996	Tamil Nadu-Urban		9.3
1996	Tamil Nadu-Rural		1.8
1996	Maharashtra-Urban		1.45
1996	Maharashtra-Rural		2.95
1996	Delhi/Haryana-Urban		7.4
1996	Delhi/Haryana-Rural		4.4

Comments:
Sources: NACO

Condom availability (peripheral level)

Prevention Indicator 3: Proportion of people who can acquire a condom (peripheral level).

Year	Area	N	Rate
1996	West Bengal-Urban		100
1996	West Bengal-Rural		53
1996	Tamil Nadu-Urban		100
1996	Tamil Nadu-Rural		57.9
1996	Maharashtra-Urban		100
1996	Maharashtra-Rural		100
1996	Delhi/Haryana-Urban		100
1996	Delhi/Haryana-Rural		78.5

Comments:
Sources: NACO

Knowledge and behaviour

Information on knowledge and behaviour related to HIV/AIDS is essential in identifying populations at risk for HIV infection. It is also critical in assessing changes over time as a result of prevention efforts. Guidelines and recommendations have been published in the publication: "Evaluation of a National AIDS Programme: A methods package. 1. Prevention of HIV infection. WHO/GPA/TCO/SEF/94.1 Geneva, 1994".

Knowledge of HIV-related preventive practices

Prevention Indicator 1: Proportion of people citing at least two acceptable ways of protection from HIV infection.

Year	Area	Age group	Male	Female	All
1996	Delhi/Haryana-Rural	15-49			43.6
1996	Delhi/Haryana-Urban	15-49			57.2
1996	Maharashtra-Rural	15-49			27.5
1996	Maharashtra-Urban	15-49			55.1
1996	Tamil Nadu-Rural	15-49			63.8
1996	Tamil Nadu-Urban	15-49			77.9
1996	West Bengal-Rural	15-49			13.4
1996	West Bengal-Urban	15-49			54.4

Comments:
Sources: NACO

Reported Non-Reguler Sexual Partnerships

Prevention Indicator 4: Proportion of sexually active people having at least one sex partner other than a regular partner in the last 12 months.

Year	Area	Age group	Male	Female	All
1996	Delhi/Haryana-Rural	15-49			2.5
1996	Delhi/Haryana-Urban	15-49			2.1
1996	Maharashtra-Rural	15-49			1.1
1996	Maharashtra-Urban	15-49			3.2
1996	Tamil Nadu-Rural	15-49			4.2
1996	Tamil Nadu-Urban	15-49			0.9
1996	West Bengal-Rural	15-49			0.7
1996	West Bengal-Urban	15-49			2.7

Comments:
Sources: NACO

Reported condom use in risk sex (gen pop)

Prevention Indicator 5: Proportion of people reporting the use of a condom during the most recent intercourse of risk.

Year	Area	Age group	Male	Female	All
1996	Delhi/Haryana-Rural	15-49			25
1996	Delhi/Haryana-Urban	15-49			28.6
1996	Maharashtra-Rural	15-49			9.1
1996	Maharashtra-Urban	15-49			62.2
1996	Tamil Nadu-Rural	15-49			8.6
1996	Tamil Nadu-Urban	15-49			77.8
1996	West Bengal-Rural	15-49			10
1996	West Bengal-Urban	15-49			19.4

Comments:
Sources: NACO

Knowledge and behaviour

Ever use of condom

Percentage of people who ever used a condom.

Year	Area	Age group	Male	Female	All
n/a		15-19			
n/a		15-49			
n/a		20-24			
n/a		25-49			

Comments:
Sources:

Median age at first sexual intercourse

Median age of people at which they first had sexual intercourse.

Year	Area	Age group	Male	Female	All
n/a		20-24			
n/a		25-49			
n/a		45-49			

Comments:
Sources:

Adolescent pregnancy

Percentage of teenagers 15-19 who are mothers or pregnant with their first child.

Year	Area	Age group	Rate	N
n/a		15		
n/a		15-17		
n/a		16		
n/a		17		
n/a		18		
n/a		18-19		
n/a		19		

Comments:
Sources:

Annex: HIV Surveillance data by site

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Pregnant women	Outside Major Urban Areas	Ahmedabad district						0	0						
		Bangalore district									0				
		Imphal							1	1				.7	
		Jaipur district									0				
		Lakhadeep, Kavaratti											0		
		Lakhadeep, Minicoy											0		
		Madurai					0			0.3					
		Maharashtra State										0.8			
		Maharashtra, Pune											4.25	4	3.4
		Mandurai							0.15						
		Manipur State										2			
		Manipur, Rims + MCW Antenat										0.81	0.45	0.6	
		Nagaland, Kohima											0.5		
		Pondicherry, AIDS Centre										4	3.6	4.18	
		Pune								3.8					
		Pune district (ANC II)							3.97						
		Rothak district					0	0	0		0.37				
		Tamil Nadu, Coimbatore										0.12	0.38	0.25	
		Tamil Nadu, Salem										1.13	0.63	0.75	
		Tirupati					0	0.05	0.97	0.8	1.91				
		Tripura, MCH Clinic											0		
		Vellore			0.1	0.1	0	0	0	0.1					
	Major Urban Areas	Calcutta				0	0	0	0	0	0.8				
		Chennai						0		0.7		0.6	0.3	0.5	0.69
		Maharashtra, Mumbai								0.5	0.7	2.5	2.25	2.38	4.3
		New Delhi						0	0.01	0.01	0		0		

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Blood donors	Outside Major Urban Areas	Manipur, Rims + JNH STD Clin										2.17	1.35	1.49	1.22

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Sex workers	Outside Major Urban Areas	Tirupati							25.9						
		Bhiwadi								33.73					
		Madurai		3.14	3.11	1.42	4.94	24.23							
		Pune	0.9	0	0.5		6	21.2	31.6		46.8	34.9			
		Pune district								23.71					
		Rajkot district					1.79								
		Ratlam									1	1			
		Surat								18.5	18.5				
		Tiruchirapally		0											
		Ujjian			0	0	0	0	0	0	1.94				
		Vascodegama							14	15.3	28	29			
		Vellore		3	3.7	5	8.5	12.5	19	25	35				
	Major Urban Areas	Calcutta							0.5	0.7	1.4	1	1.2		
		Mumbai			0.89	8.76	13.2	21.11	33.93	26.6	50.99	51			

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Injecting drug users	Outside Major Urban Areas	Manipur State		0	0	0	8.6	39.1	44.8	67.2		55			
		Manipur, Churachandpur										25.4	47.78	55.7	
		Manipur, Imphal										85.63	61.05	73.26	76.7
		Nagaland, Dimapur											32		
		Tripura, Jazoui											0		
	Major Urban Areas	Calcutta												1	
		Chennai												16.5	

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Prisoners	Outside Major Urban Areas	Bangalore									1.99				
		Thirunelveli											0.5		
	Major Urban Areas	Chennai					0.4		1	1.4			3.5		

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
STD patients	Outside Major Urban Areas	A & N Island, Car Nicobar										0	0	0	
		A & N Island, Port Blair									0	1.33	0	0	
		Andhra Pradesh, Hyderabad										4.69	4.44		
		Andhra Pradesh, Tirupathi										3.75	6.25		
		Andhra Pradesh, Vasakhapatn										7.79			
		Assam, GMCH											0.79		
		Chandigarh, General Hospital									0	0	0.49	2.54	
		Goa, Vasco											16.4		
		Gujrat, Ahmedabad										6.14	5.42	6.5	14.2
		Gujrat, Baroda										13.63	9.58	4.7	19.3

Annex: HIV Surveillance data by site

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
		Gujrat, Jamnagar										13.8	7.89	3.7	4.5
		Gujrat, Surat										18.87	22.8	15.9	20.6
		Himachal Pradesh, Simla										0	0.62	0	
		Karnataka Medical College										1.95			
		Karnataka, Bangalore										7.34	6.92		
		Karnataka, Hubli										20.5	16.5		
		Karnataka, Mangalore										2.26			
		Karnataka, Manipal										1.56			
		Madhya Pradesh, Bhopal											0		
		Madurai							4.2				29.2	10	
		Maharashtra, Aurangabad										6	6	15	
		Maharashtra, Nagpur										3	14	11	
		Manipur, Imphal										4.8	3.9	8.17	11.2
		Mizoram, Aizwal											3.92		
		Nagaland, Kohima											3		
		Orissa, Cuttack											1.07		
		Pondicherry, AIDS Centre												34	
		Pune							8	18					33
		Rajasthan, Jaipur										1.35		1.13	
		Tamil Nadu, Madurai									6.37	6.52	9.02	10	
		Tirupati							0.9						
		Tripura, GB Hospital												0	
		Vellore		0.4	0.8	0.6	1.6	1.8	2.4						
	Major Urban Areas	Chennai						3.3	5.3	6.1					
		Maharashtra, Mumbai										36	31	31	33
		Tamil Nadu, Chennai									2.66	3.78	4.35	5	

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
TB patients	Outside Major Urban Areas	Manipur, TB Clinic											6.16	11.85	
		Tamil Nadu, Perundurai											3		
		Tamil Nadu, Tampram											2.86		

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Truck drivers	Outside Major Urban Areas	Amritsar District								3.38					
		Himachal Pradesh											1.87		
		Jaipur											1.6		
		Jammu											1.82		
		Kashmir State											1		
		Patiala District								3.13					
		Punjab											3.08		
		Tami Nadu State										2.7	3.8		
		Tamil Nadu, Salem											2.86	6.19	
		Tamil Nadu, Tiruchirapalli										2.55	4	4.98	
		Uluberia										5.2			
	Major Urban Areas	Delhi								1					
		Tamil Nadu, Chennai											2.05	8.2	

Notes:

Bangladesh

Epidemiological Fact Sheet

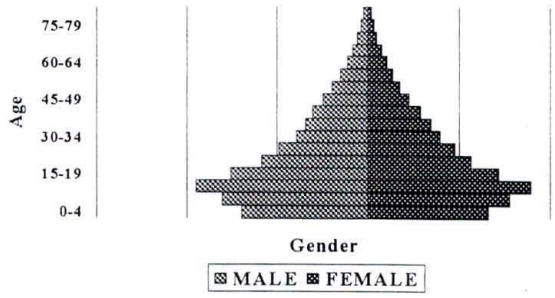
on HIV/AIDS and sexually transmitted diseases

UNAIDS
UNICEF • UNDP • UNFPA
UNESCO • WHO • WORLD BANK

World Health Organization

Country information

Population pyramid, 1997



Indicators	Year	Estimate	Source
Total Population (thousands)	*1997*	122,013	UNPOP
Population Aged 15-49 (thousands)	*1997*	61,360	UNPOP
Annual Population Growth			
% of Population Urbanized	*1996*	19	UNPOP
Average Annual Growth Rate of Urban Population	*1980-1996*	5	UNPOP
Net Migration Rate			
GNP Per Capita (US$)	*1995*	240	World Bank
GNP Per Capita Average Annual Growth Rate	*1985-1995*	2	World Bank
Human Development Index Rank (HDI)		144	UNDP
Real GDP Per Capita Rank - HDI Rank		0	UNDP
Gender Related Development Index Rank		128	UNDP
Gender Empowerment Measure Rank		76	UNDP
Human Poverty Index Value (HPI)		48.3	UNDP
% Population Economic Active	*1996*	46	ILO
Unemployment Rate	*1996*	3	ILO
Total Adult Literacy Rate			
Adult Male Literacy Rate			
Adult Female Literacy Rate			
Male Secondary School Enrollment Ratio	*1990-1995*	25	UNESCO
Female Secondary School Enrollment Ratio	*1990-1995*	13	UNESCO
Crude Birth Rate (births per 1,000 pop.)	*1996*	27	UNPOP
Crude Death Rate (deaths per 1,000 pop.)	*1996*	10	UNPOP
Maternal Mortality Rate (per 100,000 live births)	*1990*	850	WHO/UNICEF
Life Expectancy at Birth	*1996*	57	UNPOP
Total Fertility Rate			
Infant Mortality Rate (per 1,000 live births)	*1996*	83	UNICEF/UNPOP
Under Five Mortality Rate (per 1,000 live births)	*1996*	112	UNICEF/UNPOP
% Population Access to Safe Water			
% Population Access to Adequate Sanitation			

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UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance

Global surveillance of HIV/AIDS and sexually transmitted diseases (STDs) is a joint effort of WHO and UNAIDS. The UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance, initiated in November 1996, guides respective activities. The primary objective of the working group is to strengthen national, regional and global structures and networks for improved monitoring and surveillance of HIV/AIDS and STDs. For this purpose, the working group collaborates closely with national AIDS programmes and a number of national and international experts and institutions. The goal of this collaboration is to compile the best information available and to improve the quality of data needed for informed decision-making and planning at national, regional and global levels. The Epidemiological Fact Sheets are a first output of this close and fruitful collaboration across the globe.

Following a series of consultations, the working group and its partners established a framework standardizing the collection of data deemed important for a thorough understanding of the current status and trends of the epidemic, as well as patterns of risk and vulnerability in the population. Within this framework, the Fact Sheets collate the most recent country-specific data on HIV/AIDS prevalence and incidence, together with information on behaviours (e.g. casual sex and condom use) which can spur or stem the transmission of HIV. The data include prevention indicators developed by WHO's Global Programme on AIDS, which aim to measure trends in knowledge of AIDS, relevant behaviours, and a host of other factors influencing the epidemic. Additional indicators – for example, on care and support -- will be included when available.

Not unexpectedly, information on all of the agreed-upon indicators was not available for many countries in 1997. However, the fact sheets do contain a wealth of information which allows identification of strengths in currently existing programmes and comparisons between countries and regions. The fact sheets may also be instrumental in identifying potential partners when planning and implementing improved systems.

The fact sheets can be only as good as information made available to the UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance. Therefore, the working group would like to encourage all programme managers as well as national and international experts to communicate additional information to the working group whenever such information becomes available. The working group also welcomes any suggestions for additional indicators or information proven to be useful in national or international decision making and planning.

Estimated number of people living with HIV/AIDS

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Estimated number of adults and children living with HIV/AIDS, end of 1997

These estimates include all people with HIV infection, whether or not they have developed symptoms of AIDS, alive at the end of 1997

Adults and children	**21000**		
Adults (15-49)	**21000**	**Adult rate (%)**	**0.03**
Women (15-49)	**3100**		
Children (0-15)	**270**		

Estimated number of AIDS cases

Estimated number of AIDS cases in adults and children that have occured since the beginning of the epidemic:

Cumulative no. of AIDS cases	**4900**

Estimated number of deaths due to AIDS

Estimated number of adults and children who died of AIDS since the beginning of the epidemic:

Cumulative deaths	**4200**

Estimated number of adults and children who died of AIDS during 1997:

Deaths in 1997	**1300**

Estimated number of orphans

Estimated number of children who have lost their mother or both parents to AIDS (while they were under age 15) since the beginning of the epidemic:

Cumulative orphans	**810**

Estimated number of children who have lost their mother or both parents to AIDS and who were alive and under age 15 at the end of 1997:

Current living orphans	**720**

HIV Sentinel surveillance

This section contains information about HIV prevalence in different populations. The data reported in the tables below are mainly based on the HIV data base maintained by the United States Bureau of the Census and are a compilation of data from different sources, including national reports, scientific publications and abstracts. To provide for a simple overview of the current situation and trends over time, summary data are given by population group, geographical area (Major Urban Areas versus Outside Major Urban Areas), and year of survey. Studies conducted in the same year are aggregated and the median prevalence rates (in percentages) are given for each of the categories. The maximum and minimum prevalence rates observed, as well as the total number of surveys/sentinel sites, are provided with the median, to give the reader an overview of the diversity of HIV-prevalence results in a given population within the country.

The differentiation between the two geographical areas Major Urban Areas and Outside Major Urban Areas is not based on strict criteria, such as the number of inhabitants. For most countries, Major Urban Areas were considered to be the capital city and – where applicable – other metropolitan areas with similar socio-economic patterns. This distinction assumes that capital cities in many countries have specific characteristics related to the prevalence of higher risk behaviour and a concentration of HIV infections. The term Outside Major Urban Areas considers that most sentinel sites are not located in strictly rural areas, even if they are located in somewhat rural districts. Site/study-specific data on which the medians were calculated are printed in an annex at the end of this fact sheet.

HIV prevalence in selected populations in percent

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Pregnant women	Major Urban Areas	N_Sites														
		Minimum														
		Median														
		Maximum														
Pregnant women	Outside Major Urban Areas	N_Sites						1								
		Minimum						0								
		Median						0								
		Maximum						0								

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Sex workers	Major Urban Areas	N_Sites													1	
		Minimum													0.2	
		Median													0.2	
		Maximum													0.2	
Sex workers	Outside Major Urban Areas	N_Sites						1								
		Minimum						0								
		Median						0								
		Maximum						0								

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Injecting drug users	Outside Major Urban Areas	N_Sites						1								
		Minimum						0								
		Median						0								
		Maximum						0								

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Military	Outside Major Urban Areas	N_Sites						1								
		Minimum						0								
		Median						0								
		Maximum						0								

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
STD patients	Major Urban Areas	N_Sites														
		Minimum														
		Median														
		Maximum														

Assessment of epidemiological situation

Assessment of country epidemiological situation

There is little information available on HIV seroprevalence from Bangladesh. In 1988-89, sero-surveillance was conducted among several groups, sex workers, STD clinic patients, IV drug users and antenatal clinic attendees. No one was found positive.

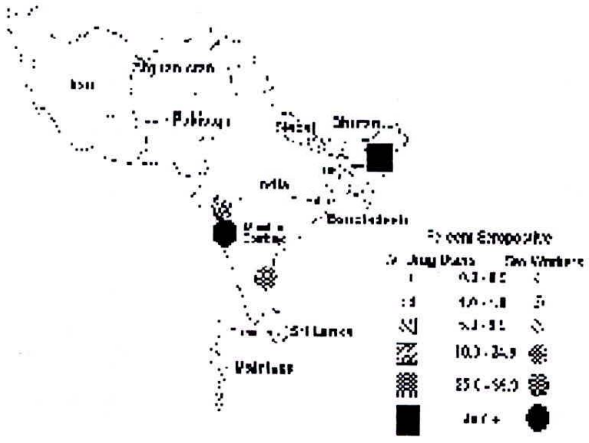
In 1996, 0.2 percent of sex workers tested in Dhaka were HIV positive.

There is no further information on HIV prevalence in Bangladesh.

Regional maps

Seroprevalence of HIV-1 for Pregnant Women Middle South Asia

Seroprevalence of HIV-1 for Sex Workers and I.V. Drug Users in Middle South Asia



Reported AIDS cases

AIDS cases by year of reporting

1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total	Unknown
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	6	0	3		10	

Date of last report: 31-Mar-1997

AIDS cases officially reported to WHO. Due to gaps in diagnosis, underreporting, and reporting delays, officially reported AIDS cases represent only a portion of all cases in a country. Completeness of reporting varies substantially from one country to another, from less than 10% in some countries with fewer resources to more than 80% in most industrialized countries (please also compare with the section on estimates). Therefore, distribution by age, sex and modes of transmission may not be representative for all people living with AIDS in a given country.

AIDS cases by mode of transmission

Hetero: Heterosexual contacts.
Homo/Bi: Homosexual contacts between men.
IDU: Injecting drug use. This transmission category also includes cases in which other high-risk behaviours were reported, in addition to injection of drugs.
Blood: Blood and blood products.
Perinatal: Vertical transmission during pregnancy, birth or breastfeeding.
NS: Not specified/unknown.

Sex	Trans. group	<94	94/<95	1995	1996	1997	1998	Unkn.	Total	%
All	All									
	Hetero									
	Homo/Bi									
	IDU									
	Blood									
	Perinatal									
	Other known									
	Unknown									
Male	All									
	Hetero									
	Homo/Bi									
	IDU									
	Blood									
	Other known									
	Unknown									
Female	All									
	Hetero									
	IDU									
	Blood									
	Other known									
	Unknown									
NS	All									
	Hetero									
	IDU									
	Blood									
	Perinatal									
	Other known									
	Unknown									

AIDS cases by age and sex

Sex	Age	<1994	94/<95	1995	1996	1997	1998	Unkn.	Total	%
All	All									
	0-14									
	15-24									
	25-49									
	50+									
	NS									
Male	All									
	0-14									
	15-24									
	25-49									
	50+									
	NS									
Female	All									
	0-14									
	15-24									
	25-49									
	50+									
	NS									
NS	All									
	0-14									
	15-24									
	25-49									
	50+									
	NS									

Curable STDs

Control and prevention of sexually transmitted diseases (STD) have been recognized as a major strategy in the prevention of HIV infection and ultimately AIDS. Consequently, monitoring different components of STD control can also provide information on HIV prevention within a country. One of the cornerstones of STD control is adequate management of patients with symptomatic STDs. This includes diagnosis, treatment, and individual health education and counselling on disease prevention and partner notification.

Estimated incidence and prevalence of curable STDs

	Incidence				Prevalence			
STDs	Year	Male	Female	All	Year	Male	Female	All
Chlamydia trach.								
Gonorrhoea								
Syphilis								
Trichomonas								
Comments								
Source								

STD Incidence, men

Prevention Indicator 9: Proportion of men aged 15-49 years who reported episodes of urethritis in the last 12 months.

Year	Area	Age	Rate	N=
n/a				
n/a				

Comments:

Sources:

STD Prevalence, women

Prevention Indicator 8: Proportion of pregnant women aged 15-24 years attending antenatal clinics whose blood has been screened with positive serology for syphilis.

Year	Area	Age	Rate	N=
n/a				
n/a				

Comments:

Sources:

STD Case management (counselled)

Prevention Indicator 7: Proportion of people presenting with STD or for STD care in health facilities who received basic advice on condoms and on partner notification.

Year	Area	Age	Rate	N=
n/a				
n/a				

Comments:

Sources:

STD Case management (treatments)

Prevention Indicator 6: Proportion of people presenting with STD in health facilities assessed and treated in an appropriate way (according to national standards).

Year	Area	Age	Rate	N=
n/a				
n/a				

Comments:

Sources:

Health service indicators

HIV-prevention strategies depend on the twin efforts of care and support for those living with HIV or AIDS, and targeted prevention for all people at risk or vulnerable to the infection. These efforts may range from reaching out to vulnerable communities through large-scale educational campaigns or interpersonal communication; provision of treatment for STDs; distribution of condoms and needles; creating an enabling environment to reduce risky behaviour; voluntary testing and counselling; home or institutional care for persons with symptomatic HIV infection; and preventing perinatal transmission and transmission through infected needles or blood in health care settings. It is difficult to capture such a large range of activities with one or just a few indicators. However, a set of well-established health care indicators -- such as the percentage of a population with access to health care services; the percentage of women covered by antenatal care; or the percentage of immunized children -- may help to identify general strengths and weaknesses of health systems. Specific indicators, such as access to testing and blood screening for HIV, help to measure the capacity of health services to respond to HIV/AIDS-related issues.

Access to health care

Indicators	Year	Estimate	Source
% of Pop. with access to health services - total:			
% of Pop. with access to health services - urban:			
% of Pop. with access to health services - rural:			
Contraceptive prevalence rate (%):			
% of births attended by trained health personnel:			
% of pregnant women immunized against tetanus:	*1995-1996*	72	UNICEF
% fully immunized - Tuberculosis:	*1995-1996*	88	UNICEF
% fully immunized - DPT:	*1995-1996*	66	UNICEF
% fully immunized - Polio:	*1995-1996*	66	UNICEF
% fully immunized - Measles:	*1995-1996*	59	UNICEF
Proportion of blood donations tested:			
% of ANC clinics where HIV testing is available:			
HIV/AIDS Hospital Occupancy Rate (Days):			

Latex condoms are the only technology available that can prevent sexual transmission of HIV/STD. Persons needing protection in situations that carry risk should have consistent access to high quality condoms. National AIDS Programmes implement activities to increase both availability of and access to condoms. The two condom availability indicators below are intended to highlight areas of strength and weakness at the beginning and at the end of the distribution system so that programmatic resources can be directed appropriately to problem areas.

Condom availability (central level)

Prevention Indicator 2: Availability of condoms per capita in the country over the last 12 months (central level).

Year	Area	N	Rate
n/a			

Comments:
Sources:

Condom availability (peripheral level)

Prevention Indicator 3: Proportion of people who can acquire a condom (peripheral level).

Year	Area	N	Rate
n/a			

Comments:
Sources:

Knowledge and behaviour

Information on knowledge and behaviour related to HIV/AIDS is essential in identifying populations at risk for HIV infection. It is also critical in assessing changes over time as a result of prevention efforts. Guidelines and recommendations have been published in the publication: "Evaluation of a National AIDS Programme: A methods package. 1. Prevention of HIV infection. WHO/GPA/TCO/SEF/94.1 Geneva, 1994".

Knowledge of HIV-related preventive practices

Prevention Indicator 1: Proportion of people citing at least two acceptable ways of protection from HIV infection.

Year	Area	Age group	Male	Female	All
n/a		15-19			
n/a		20-24			
n/a		25-49			
n/a		15-49			

Comments:
Sources:

Reported non-regular sexual partnerships

Prevention Indicator 4: Proportion of sexually active people having at least one sex partner other than a regular partner in the last 12 months.

Year	Area	Age group	Male	Female	All
n/a		15-19			
n/a		20-24			
n/a		25-49			
n/a		15-49			

Comments:
Sources:

Reported condom use in risk sex (gen pop)

Prevention Indicator 5: Proportion of people reporting the use of a condom during the most recent intercourse of risk.

Year	Area	Age group	Male	Female	All
n/a		15-19			
n/a		20-24			
n/a		25-49			
n/a		15-49			

Comments:
Sources:

Knowledge and behaviour

Ever use of condom

Percentage of people who ever used a condom.

Year	Area	Age group	Male	Female	All
1994	All	10-14		6	
1994	All	15-19		11	
1994	All	20-24		17.7	
1994	All	25-29		16.7	
1994	All	30-34		15.5	
1994	All	35-39		13.4	
1994	All	40-44		8.9	
1994	All	45-49		5.7	
1994	All	Total		13.9	

Comments: Ever-married women
Sources: Demographic and Health Survey

Median age at first sexual intercourse

Median age of people at which they first had sexual intercourse.

Year	Area	Age group	Male	Female	All
n/a		20-24			
n/a		25-49			
n/a		45-49			

Comments:
Sources:

Adolescent pregnancy

Percentage of teenagers 15-19 who are mothers or pregnant with their first child.

Year	Area	Age group	Rate	N
1994		15	10.6	615
1994		16	23.4	566
1994		17	38.7	463
1994		18	45.1	539
1994		19	59.2	382

Comments:
Sources: DHS, 1994

Sources

Kamal, M., E. Karim, et al., 1992, Status of AIDS/HIV Infection: Bangladesh, Institute of Epidemiology, Disease Control and Research, report.

Mian, M. A. H., M. A. Kabir, K. Begum, 1996, Comparative Analysis of Point Prevalence of the Different Types of STD in ICSW and FCSW, XI International Conference on AIDS, Vancouver, 7/7 14, Abstract Pub.B.1048.

Annex: HIV Surveillance data by site

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Pregnant women	Outside Major Urban Areas	Not specified					0								
	Major Urban Areas														
Group	**Area**		**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
Sex workers	Outside Major Urban Areas	Not specified					0								
	Major Urban Areas	Dhaka												0.2	
Group	**Area**		**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
Injecting drug users	Outside Major Urban Areas	Not specified					0								
	Major Urban Areas														
Group	**Area**		**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
Military	Outside Major Urban Areas	Not specified					0								
Group	**Area**		**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
STD patients	Major Urban Areas														

Notes:

Sri Lanka

Epidemiological Fact Sheet

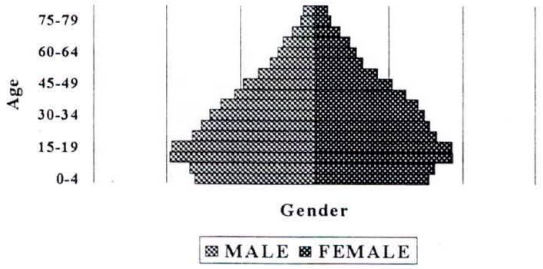
on HIV/AIDS and sexually transmitted diseases

UNAIDS
UNICEF • UNDP • UNFPA
UNESCO • WHO • WORLD BANK

World Health Organization

Country information

Population pyramid, 1997



Indicators	Year	Estimate	Source
Total Population (thousands)	*1997*	18,273	UNPOP
Population Aged 15-49 (thousands)	*1997*	10,025	UNPOP
Annual Population Growth	*1980-1995*	1.4	UNPOP
% of Population Urbanized	*1996*	22	UNPOP
Average Annual Growth Rate of Urban Population	*1980-1996*	2	UNPOP
Net Migration Rate			
GNP Per Capita (US$)	*1995*	700	World Bank
GNP Per Capita Average Annual Growth Rate	*1985-1995*	3	World Bank
Human Development Index Rank (HDI)		91	UNDP
Real GDP Per Capita Rank - HDI Rank		9	UNDP
Gender Related Development Index Rank		70	UNDP
Gender Empowerment Measure Rank		70	UNDP
Human Poverty Index Value (HPI)		20.7	UNDP
% Population Economic Active	*1996*	40	ILO
Unemployment Rate	*1996*	11	ILO
Total Adult Literacy Rate	*1995*	90	UNESCO
Adult Male Literacy Rate	*1995*	93	UNESCO
Adult Female Literacy Rate	*1995*	87	UNESCO
Male Secondary School Enrollment Ratio	*1990-1995*	71	UNESCO
Female Secondary School Enrollment Ratio	*1990-1995*	79	UNESCO
Crude Birth Rate (births per 1,000 pop.)	*1996*	18	UNPOP
Crude Death Rate (deaths per 1,000 pop.)	*1996*	6	UNPOP
Maternal Mortality Rate (per 100,000 live births)	*1990*	140	WHO/UNICEF
Life Expectancy at Birth	*1996*	73	UNPOP
Total Fertility Rate	*1995*	2.4	UNPOP
Infant Mortality Rate (per 1,000 live births)	*1996*	17	UNICEF/UNPOP
Under Five Mortality Rate (per 1,000 live births)	*1996*	19	UNICEF/UNPOP
% Population Access to Safe Water	*1990-1996*	57	UNICEF
% Population Access to Adequate Sanitation	*1990-1996*	63	UNICEF

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http://www.unaids.org

UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance

Global surveillance of HIV/AIDS and sexually transmitted diseases (STDs) is a joint effort of WHO and UNAIDS. The UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance, initiated in November 1996, guides respective activities. The primary objective of the working group is to strengthen national, regional and global structures and networks for improved monitoring and surveillance of HIV/AIDS and STDs. For this purpose, the working group collaborates closely with national AIDS programmes and a number of national and international experts and institutions. The goal of this collaboration is to compile the best information available and to improve the quality of data needed for informed decision-making and planning at national, regional and global levels. The Epidemiological Fact Sheets are a first output of this close and fruitful collaboration across the globe.

Following a series of consultations, the working group and its partners established a framework standardizing the collection of data deemed important for a thorough understanding of the current status and trends of the epidemic, as well as patterns of risk and vulnerability in the population. Within this framework, the Fact Sheets collate the most recent country-specific data on HIV/AIDS prevalence and incidence, together with information on behaviours (e.g. casual sex and condom use) which can spur or stem the transmission of HIV. The data include prevention indicators developed by WHO's Global Programme on AIDS, which aim to measure trends in knowledge of AIDS, relevant behaviours, and a host of other factors influencing the epidemic. Additional indicators – for example, on care and support -- will be included when available.

Not unexpectedly, information on all of the agreed-upon indicators was not available for many countries in 1997. However, the fact sheets do contain a wealth of information which allows identification of strengths in currently existing programmes and comparisons between countries and regions. The fact sheets may also be instrumental in identifying potential partners when planning and implementing improved systems.

The fact sheets can be only as good as information made available to the UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance. Therefore, the working group would like to encourage all programme managers as well as national and international experts to communicate additional information to the working group whenever such information becomes available. The working group also welcomes any suggestions for additional indicators or information proven to be useful in national or international decision making and planning.

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Adults in this report are defined as women and men aged 15 to 49. This age range covers people in their most sexually active years. While the risk of HIV infection obviously continues beyond the age of 50, the vast majority of those who engage in substantial risk behaviours are likely to be infected by this age. Since population structures differ greatly from one country to another, especially for children and the upper adult ages, the restriction of the term adult to 15-to-49-year-olds has the advantage of making different populations more comparable. This age range was used as the denominator in calculating adult HIV prevalence.

Estimated number of adults and children living with HIV/AIDS, end of 1997

These estimates include all people with HIV infection, whether or not they have developed symptoms of AIDS, alive at the end of 1997

Adults and children	**6900**		
Adults (15-49)	**6700**	**Adult rate (%)**	**0.07**
Women (15-49)	**2000**		
Children (0-15)	**190**		

Estimated number of AIDS cases

Estimated number of AIDS cases in adults and children that have occured since the beginning of the epidemic:

Cumulative no. of AIDS cases	**1900**

Estimated number of deaths due to AIDS

Estimated number of adults and children who died of AIDS since the beginning of the epidemic:

Cumulative deaths	**1700**

Estimated number of adults and children who died of AIDS during 1997:

Deaths in 1997	**400**

Estimated number of orphans

Estimated number of children who have lost their mother or both parents to AIDS (while they were under age 15) since the beginning of the epidemic:

Cumulative orphans	**450**

Estimated number of children who have lost their mother or both parents to AIDS and who were alive and under age 15 at the end of 1997:

Current living orphans	**390**

HIV Sentinel surveillance

This section contains information about HIV prevalence in different populations. The data reported in the tables below are mainly based on the HIV data base maintained by the United States Bureau of the Census and are a compilation of data from different sources, including national reports, scientific publications and abstracts. To provide for a simple overview of the current situation and trends over time, summary data are given by population group, geographical area (Major Urban Areas versus Outside Major Urban Areas), and year of survey. Studies conducted in the same year are aggregated and the median prevalence rates (in percentages) are given for each of the categories. The maximum and minimum prevalence rates observed, as well as the total number of surveys/sentinel sites, are provided with the median, to give the reader an overview of the diversity of HIV-prevalence results in a given population within the country.

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HIV prevalence in selected populations in percent

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Pregnant women	Major Urban Areas	N_Sites							1			1		1	1	
		Minimum							0			0		0	0	
		Median							0			0		0	0	
		Maximum							0			0		0	0	
Pregnant women	Outside Major Urban Areas	N_Sites					1		3			1		5	6	
		Minimum					0		0			0		0	0	
		Median					0		0			0		0	0	
		Maximum					0		0			0		0	0	

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Sex workers	Major Urban Areas	N_Sites							1	1		1		1	1	
		Minimum							0	0		0.5		0	0	
		Median							0	0		0.5		0	0	
		Maximum							0	0		0.5		0	0	
Sex workers	Outside Major Urban Areas	N_Sites							1					4	5	
		Minimum							0					0	0	
		Median							0					0	0	
		Maximum							0					0.53	1	

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Military	Outside Major Urban Areas	N_Sites							3							
		Minimum							0							
		Median							0							
		Maximum							0							

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Prisoners	Major Urban Areas	N_Sites							1							
		Minimum							0							
		Median							0							
		Maximum							0							
Prisoners	Outside Major Urban Areas	N_Sites							3							
		Minimum							0							
		Median							0							
		Maximum							0							

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
STD patients	Major Urban Areas	N_Sites			1	1	1	1	1	1		1		1	1	
		Minimum			0	0	0	0	0	0		0		0	0	
		Median			0	0	0	0	0	0		0		0	0	
		Maximum			0	0	0	0	0	0		0		0	0	
STD patients	Outside Major Urban Areas	N_Sites												5	6	
		Minimum												0	0	
		Median												0	0	
		Maximum												0.43	0.88	

Assessment of epidemiological situation

Assessment of country epidemiological situation

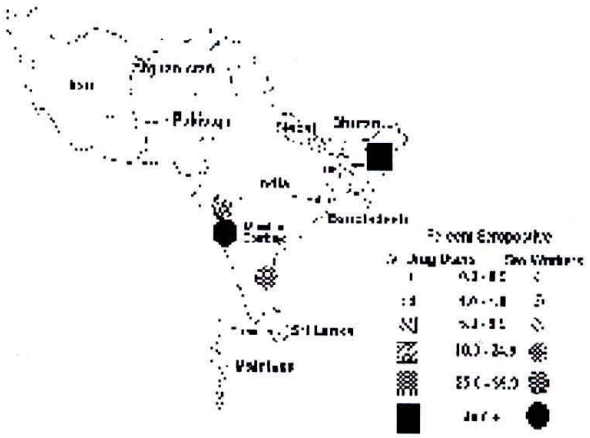
HIV testing among women attending antenatal care clinics was conducted in Sri Lanka since 1988. Up to 1996 no evidence for HIV infection in this population was found. Single HIV infections have been found in female sex workers and male STD patients in Kurunegala in 1995 and 1996 and in 1993 in Colombo.

As of December 1997, a total of 77 AIDS cases had been reported to WHO.

Regional maps

Seroprevalence of HIV-1 for Pregnant Women Middle South Asia

Seroprevalence of HIV-1 for Sex Workers and I.V. Drug Users in Middle South Asia



Reported AIDS cases

AIDS cases by year of reporting

1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total	Unknown
0	0	0	0	0	0	0	0	2	2	3	2	3	10	11	14	11	11	8		77	

Date of last report: 31-Dec-1997

AIDS cases officially reported to WHO. Due to gaps in diagnosis, underreporting, and reporting delays, officially reported AIDS cases represent only a portion of all cases in a country. Completeness of reporting varies substantially from one country to another, from less than 10% in some countries with fewer resources to more than 80% in most industrialized countries (please also compare with the section on estimates). Therefore, distribution by age, sex and modes of transmission may not be representative for all people living with AIDS in a given country.

AIDS cases by mode of transmission

Hetero: Heterosexual contacts.
Homo/Bi: Homosexual contacts between men.
IDU: Injecting drug use. This transmission category also includes cases in which other high-risk behaviours were reported, in addition to injection of drugs.
Blood: Blood and blood products.
Perinatal: Vertical transmission during pregnancy, birth or breastfeeding.
NS: Not specified/unknown.

Sex	Trans. group	<94	94/<95	1995	1996	1997	1998	Unkn.	Total	%
All	All				11	8				
	Hetero				6	6				
	Homo/Bi				2	0				
	IDU				0	0				
	Blood				0	0				
	Perinatal				0	1				
	Other known				0	0				
	Unknown				3	1				
Male	All				9	3				
	Hetero				6	2				
	Homo/Bi				2	0				
	IDU				0	0				
	Blood				0	0				
	Other known				0	0				
	Unknown				1	1				
Female	All				0	4				
	Hetero				3	4				
	IDU				0	0				
	Blood				0	0				
	Other known				0	0				
	Unknown				2	0				
NS	All				0	1				
	Hetero				0	0				
	IDU				0	0				
	Blood				0	0				
	Perinatal				0	1				
	Other known				0	0				
	Unknown				0	0				

AIDS cases through 1995 not classified by transmission category. Reports by age and sex for 1995 include cumulative cases through 1995.

AIDS cases by age and sex

Sex	Age	<1994	94/<95	1995	1996	1997	1998	Unkn.	Total	%
All	All			58	11	8			77	100%
	0-14			1	0	1			2	2.6%
	15-24			1	0	0			1	1.3%
	25-49			49	8	7			64	83%
	50+			4	3	0			7	9%
	NS			3	0	0			3	4%
Male	All			47	9	3			59	100%
	0-14			1	0	0			1	1.7%
	15-24			0	0	0			0	0%
	25-49			40	6	3			49	83%
	50+			3	3	0			6	10%
	NS			3	0	0			3	5%
Female	All			11	2	5			18	100%
	0-14			0	0	1			1	5.6%
	15-24			1	0	0			1	5.6%
	25-49			9	2	4			15	83%
	50+			1	0	0			1	5.6%
	NS			0	0	0			0	
NS	All			0	0	0			0	
	0-14			0	0	0			0	
	15-24			0	0	0			0	
	25-49			0	0	0			0	
	50+			1	0	0			0	
	NS			0	0	0			0	

Curable STDs

Control and prevention of sexually transmitted diseases (STD) have been recognized as a major strategy in the prevention of HIV infection and ultimately AIDS. Consequently, monitoring different components of STD control can also provide information on HIV prevention within a country. One of the cornerstones of STD control is adequate management of patients with symptomatic STDs. This includes diagnosis, treatment, and individual health education and counselling on disease prevention and partner notification.

Estimated incidence and prevalence of curable STDs

	Incidence				Prevalence			
STDs	Year	Male	Female	All	Year	Male	Female	All
Chlamydia trach.								
Gonorrhoea								
Syphilis								
Trichomonas								
Comments								
Source								

STD Incidence, men

Prevention Indicator 9: Proportion of men aged 15-49 years who reported episodes of urethritis in the last 12 months.

Year	Area	Age	Rate	N=
1997	All	15-49	2	

Comments: Total in 2 districts (1 urban, 1 rural)

Sources: Preliminary results from PPI survey. Awaiting confirmation.

STD Prevalence, women

Prevention Indicator 8: Proportion of pregnant women aged 15-24 years attending antenatal clinics whose blood has been screened with positive serology for syphilis.

Year	Area	Age	Rate	N=
n/a				
n/a				

Comments:

Sources:

STD Case management (counselled)

Prevention Indicator 7: Proportion of people presenting with STD or for STD care in health facilities who received basic advice on condoms and on partner notification.

Year	Area	Age	Rate	N=
1997	All	All		

Comments: Health facility survey not yet conducted.

Sources:

STD Case management (treatments)

Prevention Indicator 6: Proportion of people presenting with STD in health facilities assessed and treated in an appropriate way (according to national standards).

Year	Area	Age	Rate	N=
1997	All	All		
1997	All	All		

Comments: Not available. Health Facility survey not yet conducted.

Sources:

Health service indicators

HIV-prevention strategies depend on the twin efforts of care and support for those living with HIV or AIDS, and targeted prevention for all people at risk or vulnerable to the infection. These efforts may range from reaching out to vulnerable communities through large-scale educational campaigns or interpersonal communication; provision of treatment for STDs; distribution of condoms and needles; creating an enabling environment to reduce risky behaviour; voluntary testing and counselling; home or institutional care for persons with symptomatic HIV infection; and preventing perinatal transmission and transmission through infected needles or blood in health care settings. It is difficult to capture such a large range of activities with one or just a few indicators. However, a set of well-established health care indicators -- such as the percentage of a population with access to health care services; the percentage of women covered by antenatal care; or the percentage of immunized children -- may help to identify general strengths and weaknesses of health systems. Specific indicators, such as access to testing and blood screening for HIV, help to measure the capacity of health services to respond to HIV/AIDS-related issues.

Access to health care

Indicators	Year	Estimate	Source
% of Pop. with access to health services - total:			
% of Pop. with access to health services - urban:			
% of Pop. with access to health services - rural:			
Contraceptive prevalence rate (%):	*1990-1996*	66	UNPOP
% of births attended by trained health personnel:	*1990-1996*	94	UNICEF
% of pregnant women immunized against tetanus:	*1995-1996*	81	UNICEF
% fully immunized - Tuberculosis:	*1995-1996*	88	UNICEF
% fully immunized - DPT:	*1995-1996*	90	UNICEF
% fully immunized - Polio:	*1995-1996*	91	UNICEF
% fully immunized - Measles:	*1995-1996*	86	UNICEF
Proportion of blood donations tested:		99	
% of ANC clinics where HIV testing is available:			
HIV/AIDS Hospital Occupancy Rate (Days):			

Latex condoms are the only technology available that can prevent sexual transmission of HIV/STD. Persons needing protection in situations that carry risk should have consistent access to high quality condoms. National AIDS Programmes implement activities to increase both availability of and access to condoms. The two condom availability indicators below are intended to highlight areas of strength and weakness at the beginning and at the end of the distribution system so that programmatic resources can be directed appropriately to problem areas.

Condom availability (central level)

Prevention Indicator 2: Availability of condoms per capita in the country over the last 12 months (central level).

Year	Area	N	Rate
1997	All		1

Comments: Based on data received from suppliers and estimated population 15-49 years. 1997 rate will be available when PPI survey results are completed.

Sources: MOH, 1996

Condom availability (peripheral level)

Prevention Indicator 3: Proportion of people who can acquire a condom (peripheral level).

Year	Area	N	Rate
1997			

Comments: 1997 PPI survey results awaited.

Sources: 1997

Knowledge and behaviour

Information on knowledge and behaviour related to HIV/AIDS is essential in identifying populations at risk for HIV infection. It is also critical in assessing changes over time as a result of prevention efforts. Guidelines and recommendations have been published in the publication: "Evaluation of a National AIDS Programme: A methods package. 1. Prevention of HIV infection. WHO/GPA/TCO/SEF/94.1 Geneva, 1994".

Knowledge of HIV-related preventive practices

Prevention Indicator 1: Proportion of people citing at least two acceptable ways of protection from HIV infection.

Year	Area	Age group	Male	Female	All
1997	All	15-49			

Comments: 1997 PPI survey results awaited.
Sources:

Reported non-regular sexual partnerships

Prevention Indicator 4: Proportion of sexually active people having at least one sex partner other than a regular partner in the last 12 months.

Year	Area	Age group	Male	Female	All
1990	All	15-49	7.4	3.6	
1993	All	15-19	20	0	
1993	All	20-24	10.5	2.6	
1993	All	25-39	8.2	5.1	
1993	All	40-49	5.4	3.3	

Comments: 1997 PPI survey results awaited.
Sources: KABP/Behavioural Studies - GPA, 1993

Reported condom use in risk sex (gen pop)

Prevention Indicator 5: Proportion of people reporting the use of a condom during the most recent intercourse of risk.

Year	Area	Age group	Male	Female	All
1997		15-49			
n/a		15-19			
n/a		20-24			
n/a		25-49			
n/a		15-49			

Comments: 1997 PPI survey results awaited.
Sources: 1997

Knowledge and behaviour

Ever use of condom

Percentage of people who ever used a condom.

Year	Area	Age group	Male	Female	All
n/a		15-19			
n/a		15-49			
n/a		20-24			
n/a		25-49			

Comments:
Sources:

Median age at first sexual intercourse

Median age of people at which they first had sexual intercourse.

Year	Area	Age group	Male	Female	All
n/a		20-24			
n/a		25-49			
n/a		45-49			

Comments:
Sources:

Adolescent pregnancy

Percentage of teenagers 15-19 who are mothers or pregnant with their first child.

Year	Area	Age group	Rate	N
n/a		15		
n/a		15-17		
n/a		16		
n/a		17		
n/a		18		
n/a		18-19		
n/a		19		

Comments:
Sources:

Estimated number of IDU

Estimated number of injecting drug users.

Year	Area	Age group	Male	Female	All
n/a					

Comments: n/a
Sources:

Sources

Brown, T., P. Xenos, 1994, AIDS in Asia: The Gathering Storm, Analysis from the East West Center, no. 16, August.

Samarakoon, S., 1993, STD among Female Prostitutes Attending the Central Venereal Diseases Clinic (CVDC), Colombo, Sri Lanka, IX International Conference on AIDS, Berlin, 6/6 11, Poster PO C14 2891.

NSACP Colombo 30 May 1996. Report on HIV Sentinel Surveillance 1996, Sri Lanka.

NSACP Colombo. Report on HIV Sentinel Surveillance 1995, Sri Lanka.

World Health Organization, 1991, HIV Sentinel Surveillance in Sri Lanka, World Health Organization Documents.

World Health Organization, 1993, Report on Sentinel Surveillance - First Round - 1993, WHO HIV Surveillance Report, May 10, Sri Lanka.

Annex: HIV Surveillance data by site

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Pregnant women	Outside Major Urban Areas	Anuradhapura											0	0	
		Badulla												0	
		Galle						0			0		0	0	
		Kandy						0					0	0	
		Kurunegala											0	0	
		Not specified				0									
		Ratnapura						0					0	0	
	Major Urban Areas	Colombo						0			0		0	0	

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Blood donors	Outside Major Urban Areas	Anuradhapura												0	
		Badulla											0	0	
		Galle											0	0	
		Kandy											0	0	
		Kurunegala											0	0	
		Ratnapura											0	0	
	Major Urban Areas	Colombo											0	0	

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Sex workers	Outside Major Urban Areas	Anuradhapura											0	0	
		Badulla												0	
		Galle											0	0	
		Kandy						0					0	0	
		Kurunegala											0.53	1	
		Ratnapura											0	0	
	Major Urban Areas	Colombo						0	0		0.5		0	0	

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Injecting drug users	Major Urban Areas														

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Military	Outside Major Urban Areas	Galle						0							
		Kandy						0							
		Ratnapura						0							

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Prisoners	Outside Major Urban Areas	Galle						0							
		Kandy						0							
		Ratnapura						0							
	Major Urban Areas	Colombo						0							

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
STD patients	Outside Major Urban Areas	Anuradhapura											0	0	
		Badulla												0	
		Galle											0	0	
		Kandy											0	0	
		Kurunegala											0.43	0.88	
		Ratnapura											0	0	
	Major Urban Areas	Colombo		0	0	0	0	0	0				0	0	

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
TB patients	Outside Major Urban Areas	Anuradhapura											0	0	
		Badulla												0	
		Galle											0	0	
		Kandy											0	0	
		Kurunegala											0	0	
		Ratnapura											0	0	
	Major Urban Areas	Colombo											0	0	

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Truck drivers	Outside Major Urban Areas	Galle						0							

Notes:

Nepal

Epidemiological Fact Sheet

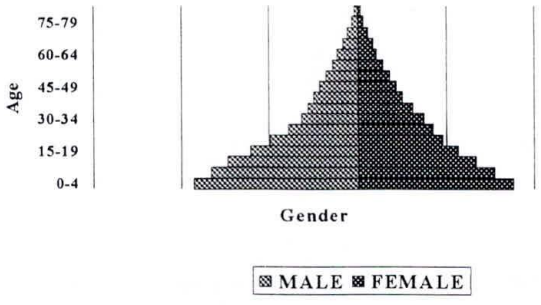
on HIV/AIDS and sexually transmitted diseases

UNAIDS
UNICEF • UNDP • UNFPA
UNESCO • WHO • WORLD BANK

World Health Organization

Country information

Population pyramid, 1997



Indicators	Year	Estimate	Source
Total Population (thousands)	*1997*	22,591	UNPOP
Population Aged 15-49 (thousands)	*1997*	10,404	UNPOP
Annual Population Growth	*1980-1995*	2.6	UNPOP
% of Population Urbanized	*1996*	14	UNPOP
Average Annual Growth Rate of Urban Population	*1980-1996*	6	UNPOP
Net Migration Rate			
GNP Per Capita (US$)	*1995*	200	World Bank
GNP Per Capita Average Annual Growth Rate	*1985-1995*	2	World Bank
Human Development Index Rank (HDI)		154	UNDP
Real GDP Per Capita Rank - HDI Rank		-6	UNDP
Gender Related Development Index Rank		131	UNDP
Gender Empowerment Measure Rank			
Human Poverty Index Value (HPI)			
% Population Economic Active		46	ILO
Unemployment Rate			
Total Adult Literacy Rate	*1995*	27.5	UNESCO
Adult Male Literacy Rate	*1995*	41	UNESCO
Adult Female Literacy Rate	*1995*	14	UNESCO
Male Secondary School Enrollment Ratio	*1990-1995*	46	UNESCO
Female Secondary School Enrollment Ratio	*1990-1995*	23	UNESCO
Crude Birth Rate (births per 1,000 pop.)	*1996*	37	UNPOP
Crude Death Rate (deaths per 1,000 pop.)	*1996*	12	UNPOP
Maternal Mortality Rate (per 100,000 live births)	*1990*	1500	WHO/UNICEF
Life Expectancy at Birth	*1996*	56	UNPOP
Total Fertility Rate	*1995*	5.2	UNPOP
Infant Mortality Rate (per 1,000 live births)	*1996*	82	UNICEF/UNPOP
Under Five Mortality Rate (per 1,000 live births)	*1996*	116	UNICEF/UNPOP
% Population Access to Safe Water	*1990-1996*	63	UNICEF
% Population Access to Adequate Sanitation	*1990-1996*	18	UNICEF

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http://www.unaids.org

UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance

Global surveillance of HIV/AIDS and sexually transmitted diseases (STDs) is a joint effort of WHO and UNAIDS. The UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance, initiated in November 1996, guides respective activities. The primary objective of the working group is to strengthen national, regional and global structures and networks for improved monitoring and surveillance of HIV/AIDS and STDs. For this purpose, the working group collaborates closely with national AIDS programmes and a number of national and international experts and institutions. The goal of this collaboration is to compile the best information available and to improve the quality of data needed for informed decision-making and planning at national, regional and global levels. The Epidemiological Fact Sheets are a first output of this close and fruitful collaboration across the globe.

Following a series of consultations, the working group and its partners established a framework standardizing the collection of data deemed important for a thorough understanding of the current status and trends of the epidemic, as well as patterns of risk and vulnerability in the population. Within this framework, the Fact Sheets collate the most recent country-specific data on HIV/AIDS prevalence and incidence, together with information on behaviours (e.g. casual sex and condom use) which can spur or stem the transmission of HIV. The data include prevention indicators developed by WHO's Global Programme on AIDS, which aim to measure trends in knowledge of AIDS, relevant behaviours, and a host of other factors influencing the epidemic. Additional indicators – for example, on care and support -- will be included when available.

Not unexpectedly, information on all of the agreed-upon indicators was not available for many countries in 1997. However, the fact sheets do contain a wealth of information which allows identification of strengths in currently existing programmes and comparisons between countries and regions. The fact sheets may also be instrumental in identifying potential partners when planning and implementing improved systems.

The fact sheets can be only as good as information made available to the UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance. Therefore, the working group would like to encourage all programme managers as well as national and international experts to communicate additional information to the working group whenever such information becomes available. The working group also welcomes any suggestions for additional indicators or information proven to be useful in national or international decision making and planning.

Estimated number of people living with HIV/AIDS

In 1997 and during the first quarter of 1998, UNAIDS and WHO worked closely with national governments and research institutions to recalculate current estimates on people living with HIV/AIDS. These calculations are based on the previously published estimates for 1994 (WER 1995; 70:353-360) and recent trends in HIV/AIDS surveillance in various populations. Epimodel 2, a microcomputer programme originally developed by the WHO Global Programme on AIDS, was used to calculate the new estimates on prevalence and incidence of AIDS and AIDS deaths, as well as the number of children infected through mother-to-child transmission of HIV, taking into account age-specific fertility rates. An additional spreadsheet model was used to calculate the number of children whose mothers had died of AIDS.

The current estimates do not claim to be an exact count of infections. Rather, they use a methodology that has thus far proved accurate in producing estimates which give a good indication of the magnitude of the epidemic in individual countries. However, these estimates are constantly being revised as countries improve their surveillance systems and collect more information. This includes information about infection levels in different populations, and behaviours which facilitate or impede infection.

Adults in this report are defined as women and men aged 15 to 49. This age range covers people in their most sexually active years. While the risk of HIV infection obviously continues beyond the age of 50, the vast majority of those who engage in substantial risk behaviours are likely to be infected by this age. Since population structures differ greatly from one country to another, especially for children and the upper adult ages, the restriction of the term adult to 15-to-49-year-olds has the advantage of making different populations more comparable. This age range was used as the denominator in calculating adult HIV prevalence.

Estimated number of adults and children living with HIV/AIDS, end of 1997

These estimates include all people with HIV infection, whether or not they have developed symptoms of AIDS, alive at the end of 1997

Adults and children	**26000**		
Adults (15-49)	**25000**	**Adult rate (%)**	**0.24**
Women (15-49)	**10000**		
Children (0-15)	**580**		

Estimated number of AIDS cases

Estimated number of AIDS cases in adults and children that have occured since the beginning of the epidemic:

Cumulative no. of AIDS cases	**2100**

Estimated number of deaths due to AIDS

Estimated number of adults and children who died of AIDS since the beginning of the epidemic:

Cumulative deaths	**1700**

Estimated number of adults and children who died of AIDS during 1997:

Deaths in 1997	**840**

Estimated number of orphans

Estimated number of children who have lost their mother or both parents to AIDS (while they were under age 15) since the beginning of the epidemic:

Cumulative orphans	**750**

Estimated number of children who have lost their mother or both parents to AIDS and who were alive and under age 15 at the end of 1997:

Current living orphans	**710**

HIV Sentinel surveillance

This section contains information about HIV prevalence in different populations. The data reported in the tables below are mainly based on the HIV data base maintained by the United States Bureau of the Census and are a compilation of data from different sources, including national reports, scientific publications and abstracts. To provide for a simple overview of the current situation and trends over time, summary data are given by population group, geographical area (Major Urban Areas versus Outside Major Urban Areas), and year of survey. Studies conducted in the same year are aggregated and the median prevalence rates (in percentages) are given for each of the categories. The maximum and minimum prevalence rates observed, as well as the total number of surveys/sentinel sites, are provided with the median, to give the reader an overview of the diversity of HIV-prevalence results in a given population within the country.

The differentiation between the two geographical areas Major Urban Areas and Outside Major Urban Areas is not based on strict criteria, such as the number of inhabitants. For most countries, Major Urban Areas were considered to be the capital city and – where applicable – other metropolitan areas with similar socio-economic patterns. This distinction assumes that capital cities in many countries have specific characteristics related to the prevalence of higher risk behaviour and a concentration of HIV infections. The term Outside Major Urban Areas considers that most sentinel sites are not located in strictly rural areas, even if they are located in somewhat rural districts. Site/study-specific data on which the medians were calculated are printed in an annex at the end of this fact sheet.

HIV prevalence in selected populations in percent

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Pregnant women	Major Urban Areas	N_Sites														
		Minimum														
		Median														
		Maximum														
Pregnant women	Outside Major Urban Areas	N_Sites								1	1					
		Minimum								0	0					
		Median								0	0					
		Maximum								0	0					

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Sex workers	Major Urban Areas	N_Sites										1				
		Minimum										0.9				
		Median										0.9				
		Maximum										0.9				
Sex workers	Outside Major Urban Areas	N_Sites								1	1					
		Minimum								0.9	1.3					
		Median								0.9	1.3					
		Maximum								0.9	1.3					

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Injecting drug users	Major Urban Areas	N_Sites								1		1	1			
		Minimum								1.6		0	0			
		Median								1.6		0	0			
		Maximum								1.6		0	0			

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Prisoners	Outside Major Urban Areas	N_Sites					1	1								
		Minimum					0	0.6								
		Median					0	0.6								
		Maximum					0	0.6								

Group	Area		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
STD patients	Major Urban Areas	N_Sites														
		Minimum														
		Median														
		Maximum														
STD patients	Outside Major Urban Areas	N_Sites						1			1	1	1			1
		Minimum						0.1			0.18	1.01	0.65			1.42
		Median						0.1			0.18	1.01	0.65			1.42
		Maximum						0.1			0.18	1.01	0.65			1.42

Assessment of epidemiological situation

Assessment of country epidemiological situation

There is little current information available on HIV prevalence in Nepal. HIV testing among antenatal clinic attendees was conducted at 8 sentinel surveillance sites including Katmandu in 1991 and 1992. At that time, no evidence of HIV infection was found among the antenatal clinic attendees tested.

In 1993, HIV testing of sex workers in Katmandu Valley found 0.9 percent of women tested were HIV positive. In 1991 and 1992, HIV testing of sex workers in 8 sentinel surveillance sites including Katmandu found 0.9 and 1.3 percent of the sex workers tested respectively to be positive.

In Katmandu, 1.6 percent of IV drug users tested in 1991 were HIV positive. In 1993 and 1994, no evidence of the virus was found among IV drug users tested at that time.

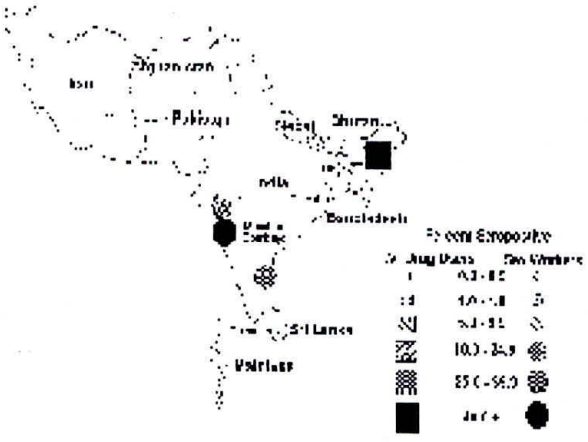
Among male STD clinic patients, 0.1 percent tested in 1989 were HIV positive. HIV prevalence among male STD clinic patients tested at various sites increased from 0.2 percent in 1992 to one percent in 1997

In 1990, one percent of prisoners tested positive for HIV infection.

Regional maps

Seroprevalence of HIV-1 for Pregnant Women Middle South Asia

Seroprevalence of HIV-1 for Sex Workers and I.V. Drug Users in Middle South Asia



Reported AIDS cases

AIDS cases by year of reporting

1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total	Unknown
0	0	0	0	0	0	0	0	0	2	0	2	5	5	10	11	15	37	96		183	

Date of last report: 7-Jan-1998

AIDS cases officially reported to WHO. Due to gaps in diagnosis, underreporting, and reporting delays, officially reported AIDS cases represent only a portion of all cases in a country. Completeness of reporting varies substantially from one country to another, from less than 10% in some countries with fewer resources to more than 80% in most industrialized countries (please also compare with the section on estimates). Therefore, distribution by age, sex and modes of transmission may not be representative for all people living with AIDS in a given country.

AIDS cases by age and sex

Sex	Age	<1994	94/<95	1995	1996	1997	1998	Unkn.	Total	%
All	All									
	0-14									
	15-29									
	30-49									
	50+									
	NS									
Male	All									
	0-14									
	15-29									
	30-49									
	50+									
	NS									
Female	All									
	0-14									
	15-29									
	30-49									
	50+									
	NS									
NS	All									
	0-14									
	15-29									
	30-49									
	50+									
	NS									

AIDS cases by mode of transmission

Hetero: Heterosexual contacts.
Homo/Bi: Homosexual contacts between men.
IDU: Injecting drug use. This transmission category also includes cases in which other high-risk behaviours were reported, in addition to injection of drugs.
Blood: Blood and blood products.
Perinatal: Vertical transmission during pregnancy, birth or breastfeeding.
NS: Not specified/unknown.

Sex	Trans. group	<94	94/<95	1995	1996	1997	1998	Unkn.	Total	%
All	All			50	37	96			183	100%
	Hetero			48	37	96			181	99%
	Homo/Bi			0	0	0			0	0%
	IDU			2	0	0			2	1%
	Blood			0	0	0			0	0%
	Perinatal			0	0	0			0	0%
	Other known			0	0	0			0	0%
	Unknown			0	0	0			0	0%
Male	All			20	16	78			113	
	Hetero			19	16	78			113	
	Homo/Bi			0	0	0			0	
	IDU			1	0	0			1	
	Blood			0	0	0			0	
	Other known			0	0	0			0	
	Unknown			0	0	0			0	
Female	All			30	21	18			68	
	Hetero			29	21	18			68	
	IDU			1	0	0			1	
	Blood			0	0	0			0	
	Other known			0	0	0			0	
	Unknown			0	0	0			0	
NS	All			0	0	0			0	
	Hetero			0	0	0			0	
	IDU			0	0	0			0	
	Blood			0	0	0			0	
	Perinatal			0	0	0			0	
	Other known			0	0	0			0	
	Unknown			0	0	0			0	

1995 data reflect cumulative cases through 1995.

Curable STDs

Control and prevention of sexually transmitted diseases (STD) have been recognized as a major strategy in the prevention of HIV infection and ultimately AIDS. Consequently, monitoring different components of STD control can also provide information on HIV prevention within a country. One of the cornerstones of STD control is adequate management of patients with symptomatic STDs. This includes diagnosis, treatment, and individual health education and counselling on disease prevention and partner notification.

Estimated incidence and prevalence of curable STDs

	Incidence				Prevalence			
STDs	Year	Male	Female	All	Year	Male	Female	All
Chlamydia trach.								
Gonorrhoea								
Syphilis								
Trichomonas								
Comments	A total of 13,250 new cases of STD was reported to Health Management Information System, DHS in the fiscal year 1996/97. Majority of the diagnosis was made on the basis of syndromic approach.							
Source	NCASC and DHS/P&FAD, HMIS section.							

STD Incidence, men

Prevention Indicator 9: Proportion of men aged 15-49 years who reported episodes of urethritis in the last 12 months.

Year	Area	Age	Rate	N=
n/a	All	All		

Comments:

Sources:

STD Prevalence, women

Prevention Indicator 8: Proportion of pregnant women aged 15-24 years attending antenatal clinics whose blood has been screened with positive serology for syphilis.

Year	Area	Age	Rate	N=
1997	All	15-24	1.3	1802

Comments: 1.3% tested VDRL + TPHA. TPHA for the same sample population was found to be 4.7%. (O f the samples 22.5% were above 25 years of age)

Sources: NCASC

STD Case management (counselled)

Prevention Indicator 7: Proportion of people presenting with STD or for STD care in health facilities who received basic advice on condoms and on partner notification.

Year	Area	Age	Rate	N=
1997	All	All	70	

Comments: The data comes from compilation of reports from PHC.

Sources: NCASC

STD Case management (treatments)

Prevention Indicator 6: Proportion of people presenting with STD in health facilities assessed and treated in an appropriate way (according to national standards).

Year	Area	Age	Rate	N=
1997	All	All	80	
1997	All	All	80	

Comments: In the PHC, syndromic management is practiced. However at the Health Post and sub-Health Post level appropriate drug availability is a major constraint in STD case management.

Sources: NCASC

Health service indicators

HIV-prevention strategies depend on the twin efforts of care and support for those living with HIV or AIDS, and targeted prevention for all people at risk or vulnerable to the infection. These efforts may range from reaching out to vulnerable communities through large-scale educational campaigns or interpersonal communication; provision of treatment for STDs; distribution of condoms and needles; creating an enabling environment to reduce risky behaviour; voluntary testing and counselling; home or institutional care for persons with symptomatic HIV infection; and preventing perinatal transmission and transmission through infected needles or blood in health care settings. It is difficult to capture such a large range of activities with one or just a few indicators. However, a set of well-established health care indicators -- such as the percentage of a population with access to health care services; the percentage of women covered by antenatal care; or the percentage of immunized children -- may help to identify general strengths and weaknesses of health systems. Specific indicators, such as access to testing and blood screening for HIV, help to measure the capacity of health services to respond to HIV/AIDS-related issues.

Access to health care

Indicators	Year	Estimate	Source
% of Pop. with access to health services - total:			
% of Pop. with access to health services - urban:			
% of Pop. with access to health services - rural:			
Contraceptive prevalence rate (%):	*1990-1996*	23	UNPOP
% of births attended by trained health personnel:	*1990-1996*	7	UNICEF
% of pregnant women immunized against tetanus:	*1995-1996*	11	UNICEF
% fully immunized - Tuberculosis:	*1995-1996*	73	UNICEF
% fully immunized - DPT:	*1995-1996*	51	UNICEF
% fully immunized - Polio:	*1995-1996*	48	UNICEF
% fully immunized - Measles:	*1995-1996*	45	UNICEF
Proportion of blood donations tested:			
% of ANC clinics where HIV testing is available:			
HIV/AIDS Hospital Occupancy Rate (Days):			

Latex condoms are the only technology available that can prevent sexual transmission of HIV/STD. Persons needing protection in situations that carry risk should have consistent access to high quality condoms. National AIDS Programmes implement activities to increase both availability of and access to condoms. The two condom availability indicators below are intended to highlight areas of strength and weakness at the beginning and at the end of the distribution system so that programmatic resources can be directed appropriately to problem areas.

Condom availability (central level)

Prevention Indicator 2: Availability of condoms per capita in the country over the last 12 months (central level).

Year	Area	N	Rate
1997	All		2

Comments: The Numerator reflects only condoms imported by Ministry of Health/DHS/LMD and does not include commercial distributors.

Sources: MOH/DHS/LMD, 1997

Condom availability (peripheral level)

Prevention Indicator 3: Proportion of people who can acquire a condom (peripheral level).

Year	Area	N	Rate
1997	All		80

Comments: Every village having sub health post and NGO, Family Planning workers (TBA) distributing condoms, it is assumed that the availability is more than 80%.

Sources: NCASC, 1997

Knowledge and behaviour

Information on knowledge and behaviour related to HIV/AIDS is essential in identifying populations at risk for HIV infection. It is also critical in assessing changes over time as a result of prevention efforts. Guidelines and recommendations have been published in the publication: "Evaluation of a National AIDS Programme: A methods package. 1. Prevention of HIV infection. WHO/GPA/TCO/SEF/94.1 Geneva, 1994".

Knowledge of HIV-related preventive practices

Prevention Indicator 1: Proportion of people citing at least two acceptable ways of protection from HIV infection.

Year	Area	Age group	Male	Female	All
1995	All	15-19		34.7	
1995	All	20-24		33.5	
1995	All	25-49		30	

Comments: Rate in table is proportion that mentioned the use of condoms as a way to avoid HIV/AIDS. Among 15-49 ever-married women who had heard of AIDS 30.9% mentioned "use of condoms"; 52.6% mentioned "have only 1 sexual partner" (n=2263).

Sources: Family Health Survey, MOH/DHS

Reported non-regular sexual partnerships

Prevention Indicator 4: Proportion of sexually active people having at least one sex partner other than a regular partner in the last 12 months.

Year	Area	Age group	Male	Female	All
n/a		15-19			
n/a		20-24			
n/a		25-49			
n/a		15-49			

Comments:

Sources:

Reported condom use in risk sex (gen pop)

Prevention Indicator 5: Proportion of people reporting the use of a condom during the most recent intercourse of risk.

Year	Area	Age group	Male	Female	All
n/a		15-19			
n/a		20-24			
n/a		25-49			
n/a		15-49			

Comments:

Sources:

Knowledge and behaviour

Ever use of condom

Percentage of people who ever used a condom.

Year	Area	Age group	Male	Female	All
1996	All	15-19		5.5	
1996	All	20-24		8.5	
1996	All	25-29		8.8	
1996	All	30-34		6.5	
1996	All	35-39		5.5	
1996	All	40-44		3	
1996	All	45-49		1.6	
1996	All	Total		6.2	

Comments: Ever-married women
Sources: Demographic and Health Survey

Median age at first sexual intercourse

Median age of people at which they first had sexual intercourse.

Year	Area	Age group	Male	Female	All
n/a		20-24			
n/a		25-49			
n/a		45-49			

Comments:
Sources:

Adolescent pregnancy

Percentage of teenagers 15-19 who are mothers or pregnant with their first child.

Year	Area	Age group	Rate	N
1996	All	15	3.2	485
1996	All	15-17		1382
1996	All	16	11.8	469
1996	All	17	22.8	428
1996	All	18	36	449
1996	All	19	50.7	399

Comments:
Sources: DHS/1996

Estimated number of IDU

Estimated number of injecting drug users.

Year	Area	Age group	Male	Female	All
1997	All	All			20000

Comments:
Sources: NCASC, 1997

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Annex: HIV Surveillance data by site

Group	Area		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Pregnant women	Outside Major Urban Areas	Eight sites							0	0					
Group	**Area**		**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
Sex workers	Outside Major Urban Areas	Eight sites							0.9	1.3					
	Major Urban Areas	Kathmandu Valley									0.9				
Group	**Area**		**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
Injecting drug users	Major Urban Areas	Kathmandu							1.6		0	0			
Group	**Area**		**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
Prisoners	Outside Major Urban Areas	4 towns				0									
		Not specified					0.6								
Group	**Area**		**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
STD patients	Outside Major Urban Areas											0.65			
		Not stated					0.1								
		Various sites								0.18	1.01				1.42

Notes:

HIV & AIDS

A GUIDE FOR JOURNALISTS

INFORMATION / ADVICE / CONTACTS

YOUR GUIDE TO HIV AND AIDS

No one would deny that reporting on HIV and AIDS can be difficult. This guide is designed to help journalists tackle what is a complex and controversial topic.

The virus, and the fatal syndrome which it causes, are still not fully understood, even by the experts. Medical knowledge and opinion is constantly changing, which may lead to confusion for the public.

When "experts" disagree, public fears, myths and bigotry often come to the fore. Such powerful emotions make good copy, but much of the resulting media coverage has not helped the public to understand HIV and AIDS.

Below we answer some of the most common questions that people ask about HIV and AIDS.

What is the difference between HIV and AIDS?

HIV stands for Human Immunodeficiency Virus. HIV can damage the body's defence system so that it cannot fight certain infections. When a person is infected with HIV the virus can be found in their blood, semen or vaginal fluids and breast milk.

A person with HIV is said to be HIV antibody positive, seropositive, body positive, or, more commonly, HIV positive – that is, they have tested positive for the presence of antibodies to HIV or for the virus itself in their blood. (Babies may be born with their mothers' antibodies in their blood which later disappear: see **How is HIV passed on?**).

Once people have HIV it remains in their body for the rest of their lives and can be transmitted to other people, i.e. they remain infectious for the rest of their lives. People with HIV may have no symptoms at all for a prolonged period, but eventually experience a range of medical conditions.

AIDS stands for Acquired Immune Deficiency Syndrome. It describes the condition where the body's defence system has been broken down by HIV and can no longer fight certain infections. A person is said to have AIDS when they are affected by certain otherwise rare illnesses which occur as a result of immunodeficiency, such as some cancers and pneumonias.

The cause of illness or death among people with HIV is not the virus itself, but these other illnesses to which HIV has made the person vulnerable. A person with AIDS may recover fully or partially from some of these illnesses, but eventually succumbs to one or more of them.

So far as is known, almost all people with HIV will eventually develop AIDS, but how long this takes varies from person to person. Currently the average time from infection to the development of AIDS in the UK is between eight and ten years.

Many people still confuse HIV infection with AIDS. It is therefore important that journalists make a clear distinction between the two.

Is there more than one kind of virus?

Yes. HIV-2, which is much less common than HIV-1, was discovered in Senegal in 1985 and is found mainly in West Africa. The progress to AIDS may be slower with HIV-2 infection. It may be possible for people to be dually infected with HIV-1 and HIV-2.

As with other viruses such as influenza, HIV mutates constantly, so different strains of the virus are found in different parts of the world.

How is HIV passed on?

HIV is passed on from person to person through intimate contact with infected blood, semen, vaginal fluids or breast milk. There are three main ways: first, by unprotected sexual intercourse (anal or vaginal) with a person with HIV; second, through innoculation with or transfusion of infected blood, which in the UK is normally through drug users sharing contaminated injecting equipment, including syringes and needles; and third, from an infected mother to her baby, either in the womb, during birth or through breast feeding.

Not everyone who comes into contact with HIV will contract the virus. For example,

babies born to HIV positive mothers have their mothers' antibodies to HIV in their blood, but may not necessarily be infected with HIV.

However, it can take only one exposure to the virus to become infected.

HIV is a fragile virus which can only survive for a short time in the environment (exactly how long depends on the conditions). It is not contagious, so it is NOT passed on through everyday social contact with someone who has HIV infection (including AIDS itself). For example, the virus cannot be passed on by touching, shaking hands or hugging, nor by sneezing and coughing, and cannot be caught from insect bites. It is perfectly safe to share objects used by an infected person such as cups, cutlery, glasses, food, clothes, towels, toilet seats and doorknobs, and facilities such as swimming pools.

However, people with HIV or AIDS should not share toothbrushes or razors because there is a very small risk that these will be contaminated with blood, and in any case this contravenes basic rules of hygiene.

Are blood transfusions safe now?

Since 1985 blood donated in the United Kingdom has been screened for antibodies to HIV, so the risk of being infected is almost negligible. There is a very small risk from donors who have been infected shortly before giving blood, as they may not have yet developed antibodies to the virus (this is called a "window period"), and for this reason donors are asked not to give blood if they may be at risk of infection. Blood plasma products, such as Factor 8 which is given to haemophiliacs, are prepared from screened blood which then goes through additional purifying treatment.

It is now extremely unlikely that people will become infected through blood transfusions in most developed countries, although it may still happen in some parts of the world. People travelling abroad, either for business or pleasure, who would like more information can get a free leaflet called "The Traveller's Guide to Health" from their local post office (or phone free on 0800 555 777 to order a copy).

What about donating blood?

People donating blood in the United Kingdom cannot become infected with HIV because all equipment is sterile and is only used only once.

Can people get HIV from their doctors and dentists?

There have been no known cases of people contracting HIV from their doctors or dentists in the United Kingdom, and only one case (involving a Florida dentist who infected six patients) worldwide. The General Medical and Dental Councils advise all doctors and dentists who believe that they may have been exposed to HIV to seek medical advice and, if appropriate, to have a test for HIV. This includes those who have engaged in invasive medical or surgical techniques in parts of the world where no provision could be made for adequate precautions to be taken against the danger of infection.

The Department of Health's Expert Advisory Group on AIDS has issued guidance for HIV infected health care workers. It states that health care workers with HIV should not perform invasive surgical procedures in which injury to the worker could result in blood contaminating the patient's open tissues. A United Kingdom Advisory Panel has been created to provide specific occupational advice to health care workers, personal physicians, occupational physicians and professional bodies where there is doubt about the need to restrict a particular health care worker's occupational activities. It would be wise for journalists to check the exact and current position with the Department of Health.

Routine HIV testing of health care workers undertaking invasive procedures is not considered justified. Such testing would also be ineffective; HIV infection can take three months or more to show up in tests, so results would only show that workers were not infected three months before the test date.

What about acupuncturists and tattooists?

Any device that punctures the skin, including tattooing and acupuncture needles and equipment for ear-piercing or

practitioners will sterilise their equipment between customers or will use new, disposable needles, removing the risk. Similarly good barbers will sterilise their razors between customers to eliminate any contamination by infected blood.

Which groups of people are most at risk from HIV?

Although gay men, injecting drug users and haemophiliacs have been disproportionately affected in the United Kingdom by the AIDS pandemic, it is misleading and dangerous to talk about high-risk groups. It is the way in which people behave that puts them at risk from HIV, not who they are. A more relevant term is "high-risk behaviour".

If one partner is infected, unprotected anal intercourse, whether between a man and a woman or between two men, carries a particularly high risk of transmitting HIV. But unprotected vaginal intercourse also carries a significant risk.

Current research suggests that other sexually transmitted diseases (STDs), especially those which cause ulceration, facilitate transmission of HIV. It is possible that there are other factors which increase the risk of a person becoming infected with HIV and also hasten the onset of AIDS, and research is continuing into these "co-factors".

However, journalists should be extremely wary of unsubstantiated claims about research findings.

Are heterosexuals really at risk?

YES. Worldwide the World Health Organization estimates that 80–90 per cent of people with HIV have contracted the virus as a result of heterosexual intercourse, that is, through sex between a man and a woman. Although people who have contracted the virus through heterosexual sex make up a small proportion of people known to be HIV positive in the United Kingdom, they are currently the fastest-growing group. And it is possible that many more heterosexuals are unaware that they are HIV positive, as most do not consider themselves to be at risk and therefore do not come forward to be tested.

Are both sexes affected equally by HIV?

HIV appears to be transmitted more easily from a man to a woman than from a woman to a man. A survey of 16 studies of heterosexual partners of people with HIV worldwide found that 32 per cent of men's partners and 25 per cent of women's partners contracted the virus. However, the risk of infection for partners of either sex is still high.

Because the majority of people known to be HIV positive in the United Kingdom have been men (because the epidemic has affected gay men and because almost all haemophiliacs are male), less is known about the effects of the virus on women. What is certain is that women suffer from related gynaecological conditions in addition to other illnesses associated with HIV and AIDS.

How does the "AIDS test" work?

Despite many references to an "AIDS test" in the media, there is actually no such thing. The test is for antibodies to HIV.

This test looks for antibodies to HIV in a person's blood, or sometimes in their saliva. (The saliva test is used mainly for epidemiological surveys.)

It can take two to three months and sometimes longer from the time of infection for antibodies to show up in a test, although a person will already be able to pass on the virus. So if people think they have been infected they should seek advice, but may be asked to wait before taking the test.

A positive result does not mean that a person has AIDS, only that they have HIV. The test cannot predict when or whether they will go on to develop AIDS.

Tests can be carried out only under the authorisation of a qualified medical practitioner; home-testing kits are illegal, unreliable and can be dangerous. It is very important that anyone considering taking the test should talk to a health adviser, counsellor or doctor about the implications before making a decision (this is one of the reasons that home-testing kits are banned).

Test results and the fact that a test has been taken are confidential between the person concerned and the medical staff treating them. However, information about the test

may appear on GPs' records, and could then with the patient's permission be passed on, for example to insurance companies. People can be tested in complete confidentiality – and anonymously if they wish – at health-authority-run STD clinics (also known as Special Clinics and Genito-Urinary Medicine Clinics).

What treatment is available for HIV and AIDS?

At the time of publication the most widely available treatment for HIV-related illness is zidovudine (AZT). Zidovudine may increase the survival time of people who already have AIDS and help decrease the severity of HIV-related symptoms. However, there are side-effects and some of these can be severe, often forcing people to stop taking zidovudine.

Prophylactic drugs are also available for certain illnesses associated with HIV. Other drugs are being developed and tested all the time, and it is hoped that one of these (or a combination of drugs) will prove effective against HIV.

Journalists should treat claims of new treatments for HIV infection and AIDS with extreme scepticism unless these have been made by reputable and experienced research workers.

How can people protect themselves against HIV and AIDS?

There is no vaccine available that will prevent HIV infection, and because HIV, as a virus, mutates easily, it will be difficult to produce an effective vaccine against it. Even if a vaccine can be made, it could take a long time to prove that it is safe enough to use.

As there is neither an effective vaccine nor an effective cure available for HIV infection, it is very important for individuals to take precautions to stop the virus spreading. Encouraging people to practise "safer sex" makes an important contribution to this.

Using a condom can help to stop the virus – and other sexually-transmitted diseases – passing from one person to another. But condoms are effective only if they are used consistently and if manufacturers' instructions are followed closely, and it is important for journalists to stress this in their stories.

For example, condoms should be put on when a man has an erection but before any genital contact is made, and should never be re-used. People should only use good quality condoms (in the UK the BSI "kitemark" means that they have been properly tested), and for this reason it is better to take condoms from the United Kingdom when travelling abroad.

Anything containing oil, such as vaseline, baby oil and some pessaries or suppositories, can damage a condom and make it fail. Only water-based lubricants such as KY Jelly should be used with condoms, and if people are using oil to give each other a massage they should use a towel or tissue to wipe their hands before touching a condom.

Journalists can also help to raise awareness of the new female condom Femidom, which may prove to be as effective as the male condom and which heterosexual couples may prefer to use. More work needs to be done to evaluate its efficacy and acceptability.

Safer sex also includes alternatives to penetrative sex such as mutual masturbation, kissing, licking and body rubbing. Sex toys can heighten sexual enjoyment, but should not be shared. Oral sex carries a theoretical risk of infection, and for this reason using condoms or oral shields (also known as dental dams) is recommended.

Injecting drug users should always use their own needles and syringes, but if they do share, can lessen the risk of infection by cleaning equipment with bleach after each use. Used needles and syringes should be disposed of safely by putting them in a rigid container with a lid. In many parts of the country needle exchange schemes offer free supplies of clean injecting equipment and will safely dispose of used equipment.

Journalists covering stories about injecting drug users should consider mentioning what facilities are available for them locally, as this will also help to prevent the spread of HIV.

'AIDS' surgeon will escape test

THE SURGEON said to be infected with the HIV virus will not have to take an AIDS test before being allowed back to work.

Health chiefs revealed yesterday that they have no power to force eye specialist Peter Curran, 45, to be screened for the killer disease.

He has promised to undergo "necessary" health checks in order to return to his duties at Queen Mary's Hospital, Sidcup, Kent. But these will concentrate on infectious secondary diseases. Jim Rumens, of Queen Mary's, said: "I do not think there is any risk to patients."

By NICHOLAS BUCKLEY

Mr Curran was last night still in hiding after claims he carried out 140 operations while HIV positive.

● DOCTORS have no right to test patients for HIV without their consent, the British Medical Association ruled at its annual meeting in Nottingham yesterday.

NACCURATE

Supermarkets profit from rising condom sales after Aids campaign

James Erlichman, Consumer Affairs Correspondent

AROUND 15 per cent of condoms are now bought in supermarkets, compared with 10 per cent two years ago, Mintel, the market research company, said in a report published yesterday. Sales from vending machines are also increasing.

Total sales are expected to rise to 155 million this year, nearly 20 per cent more than in 1987 when the Government promoted condoms as part of its "safer sex" campaign against the Aids virus. But the contraceptive pill is still the most popular contraception, with 25 per cent of women using it compared with 16 per cent who rely on partners' condoms.

Boots, which accounts for nearly half of all condom sales, has moved them from pharmacy open display. Mintel said that manufacturers had switched to discreet pastel coloured packs to attract women customers. Some reports suggest women may now be buying up to 40 per cent of all condoms purchased.

Mintel interviewed 600 men and women in their own homes asking market [illegible] condom questions were written down and answers were numbered so interviewees did not have to use the word. Half of all women replied that they had never had sex with partners wearing condoms, but 83 per cent of both men and women knew condoms formed a barrier against the Aids virus.

Condoms were most popular among 18-19 year olds. By class, they were most popular with the lower middle class and least popular with the very poor and unemployed. A drop in mail order sales is seen as further proof that the embarrassment factor is declining. "Only 3 per cent of people refused to answer the condom questions," said Margaret Rooke-Matthews for Mintel. "That compares with 10 per cent who refused to answer questions we asked recently about funerals."

Sales of condoms

	1989 %	1991 %
Chemists	55	49

CCURATE

Journalists should also avoid describing people with HIV or AIDS as "innocent", as "victims" or as "sufferers", as these terms are misleading and inaccurate.

- HIV does not discriminate. Anyone can become infected, and to talk about "innocence" implies that some people with HIV and AIDS are guilty, which can encourage prejudice and discrimination.
- Describing people as "victims" implies helplessness and invites pity, which many people with HIV or AIDS who are trying to fight the virus and to lead lives as normal as possible find unhelpful and insulting.
- People with AIDS are not necessarily ill all the time, so to describe them as "sufferers" is not appropriate.

Respect privacy

Clause 6 of the NUJ's Code of Conduct says that, subject to the justification by overriding considerations of the public interest, a journalist should do nothing which entails intrusion into private grief and distress.

The NUJ urges journalists to respect the privacy of people living with HIV and AIDS, including the family and friends of people infected with the virus. Identities and addresses should not be revealed or hinted at without permission, and journalists should not pressurise people living with HIV and AIDS into publicly revealing their identities.

Information given to journalists in confidence by individuals living with HIV and AIDS should not under any circumstances be passed on or made accessible to other journalists, programme makers or researchers. Journalists have a responsibility to ensure that this confidentiality is understood by colleagues and by all those working with them.

EMPLOYMENT PROTECTION FOR PEOPLE WITH HIV AND AIDS

Employment protection for people with HIV or AIDS can be achieved through negotiating specific clauses in contracts of employment. These clauses can either form a separate policy on HIV and AIDS, or be part of a more general policy to protect all workers with life-threatening illnesses. In either case, a policy should include at least the following clauses:

- People with HIV or AIDS will be treated in the same way as people with any other life-threatening illness, such as cancer or heart disease.
- The company recognises that an employee who has HIV or AIDS does not present a risk to other staff.
- The company and the union will work together to educate all staff regarding the true nature of, and risks relating to, HIV and AIDS, and to combat ignorance and hysteria.
- There will be no discrimination in recruitment against job applicants internally or externally on the grounds that the applicant has HIV or AIDS.
- No staff member or job applicant will be required to take the HIV antibody test.
- Staff members who have HIV or AIDS are not required to inform the company. However, if it is known that a staff member has HIV or AIDS confidentiality will be maintained. Any member of staff who deliberately breaches this confidentiality will be subject to disciplinary action. Information about grievance procedures will be fully disseminated.
- Staff members who have or who are thought to have HIV or AIDS will not be victimised or discriminated against. Any member of staff who discriminates against a staff member with or who is thought to have HIV or AIDS will be subject to disciplinary action. Information about grievance procedures will be fully disseminated.
- Staff will not be dismissed or redeployed to alternative employment because they have HIV or AIDS unless they request it.
- Staff members with HIV infection or AIDS will be given adequate leave and time off with pay to receive medical care and counselling.
- Staff members who are caring for people with AIDS or HIV-related conditions will be given adequate leave and time off with pay.
- Staff members who have HIV or AIDS may require medical treatment including hospitalisation from time to time but still be able to resume their normal life between episodes of illness. Both the company and the union will endeavour to ensure that such employees can continue working for as long as they are willing and able, through redistribution of their workload, and/or by offering them part-time working or flexible working hours and/or by the employment of freelance journalists.
- The company will install condom machines (at a height accessible to everybody including wheelchair users) for the use of staff members.
- The company's policy on HIV and AIDS will be fully disseminated and regularly monitored by both the company and the union.
- Appropriate training will be provided to allow realistic and sensitive responses to people with or who are perceived to have HIV or AIDS or who are caring for people with HIV or AIDS, including training about confidentiality procedures.
- Special conditions and concerns may arise outside the UK. All requests for staff to work overseas will be supported by appropriate information, advice, insurance and necessary equipment.

EASAH, the Employers' Advisory Service on AIDS & HIV, provides consultancy services including needs assessment, strategy and policy development or review, evaluation and monitoring. Contact Adam Christie or Steve Suckling on 0274 521 511 (phone and fax) or via PO Box 346, Bradford BD7 2DB.

CONTACTS

Reporting on HIV and AIDS may be difficult sometimes, particularly as information is constantly changing, but there is plenty of help available. Where relevant the same organisations can also be recommended to the general public for further information, advice and help.

Statutory organisations

HEALTH EDUCATION AUTHORITY PRESS OFFICE 071 413 1987
The Health Education Authority is the statutory body providing information to the public in England on issues relating to sexual transmission of the virus.

HEALTH PROMOTION WALES 0222 752 222
A similar organisation to the above serving the population of Wales.

HEALTH EDUCATION BOARD FOR SCOTLAND 031 447 8044
A similar organisation to the above serving the population of Scotland.

THE HEALTH PROMOTION AGENCY FOR NORTHERN IRELAND 0232 311 514 (press office)/0232 311 611 (switchboard)
A similar organisation to the above serving the population of Northern Ireland.

HEALTH PROMOTION UNIT – REPUBLIC OF IRELAND 010 3531 714 711
A similar organisation to the above serving the population of the Republic of Ireland.

DEPARTMENT OF HEALTH PRESS OFFICE 071 210 5223 – 5229
The Department of Health is the statutory body providing information to the public relating to injecting drug use and the transmission of HIV.

DEPARTMENT OF HEALTH – NORTHERN IRELAND 0232 520 000

NATIONAL HIV PREVENTION INFORMATION SERVICE 071 724 7993
A free national information service for professionals on HIV education and prevention. Will also assist the media.

NATIONAL AIDS HELPLINE 0800 567 123
Provides free confidential information and advice for the general public on HIV and AIDS 24 hours a day, seven days a week. If you can only give out one contact number with your story, this should be it. Advice is also available in:

Punjabi, Bengali, Hindi, Urdu, Gujarati 0800 282 445
Wednesday 6pm –10pm.

Cantonese 0800 282 446
Tuesday 6pm –10pm.

Arabic 0800 282 447
Wednesday 6pm –10pm.

A Minicom service is available for people with hearing difficulties on 0800 521 361 10am-10pm seven days a week.

Voluntary organisations

TERRENCE HIGGINS TRUST 071 831 0330 (helpline 071 242 1010 12 noon–10pm, seven days a week)
Offers a wide range of services which are open to everyone.

NATIONAL AIDS TRUST 071 972 2845
Promotes voluntary sector responses to HIV.

SCOTTISH AIDS MONITOR 031 555 4850
Provides a comprehensive range of care and prevention services.

BODY POSITIVE 071 835 1045 (Helpline 071 373 9124 7–10PM DAILY)
Self-help and support groups for people affected by HIV.

BLACKLINERS 071 738 7468 (helpline 071 738 5274 Monday – Friday 9am–5pm)
Provides emotional and practical support and housing to black people of African, Asian and Caribbean origin affected by HIV and AIDS.

BLACK HIV AND AIDS NETWORK (BHAN) 081 749 2828 (helpline 081 742 9223 9.30am–5.30pm Monday–Friday)
Provides information, support and counselling to black people with HIV and AIDS, together with education and training.

HAEMOPHILIA SOCIETY 071 928 2020 (media enquiries to the health network 0353 669 939)
Support and advice for people affected by haemophilia.

POSITIVELY WOMEN 071 490 5501 (helpline 071 490 2327 12–2pm Monday to Friday – for women with HIV only)
Provides a range of practical and emotional support services to women living with HIV and AIDS.

MAINLINERS 071 737 3141/738 4656
Support, advice and help for drug users.

SCODA (STANDING CONFERENCE ON DRUG ABUSE) 071 430 2341
Can provide an up-to-date national list of drug treatment services and needle and syringe exchange facilities.

POSITIVE PARTNERS & POSITIVELY CHILDREN 071 738 7333 (head office)/071 250 1396 (North London office)
Support, information and advice for children and adults living with HIV and AIDS, their families and partners.

AIDS AHEAD 0270 250 736
Health education, information, counselling and interpretation services for deaf people.

IMMUNITY LEGAL CENTRE 071 388 6776
Specialist legal and welfare rights advice centre for people in the Greater London area who have legal problems associated with HIV.

BRITISH MEDICAL ASSOCIATION 071 387 4499
Deals with ethical, social and public policy issues relating to HIV and AIDS and the medical profession.

LONDON LIGHTHOUSE 071 792 1200
Britain's first major residential and support centre for people living with HIV and AIDS.

UK NGO AIDS CONSORTIUM 071 401 8231
Consortium of development agencies whose programmes are affected by HIV and AIDS.

There are also many local organisations dealing with HIV and AIDS, both statutory and voluntary, and details can be obtained from regional and district health authority press offices. Many of the national organisations listed will also refer callers to local representatives where they exist.

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ISBN 1 85448 825 2

HIV & AIDS

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ISBN 1-85448-825-2

Injecting drug use and HIV infection in Asia

Nick Crofts, Gary Reid and Paul Deany*
in collaboration with the Asian Harm Reduction Network

AIDS 1998, **12** (suppl B):S69–S78

Keywords: Injecting drug use, Asia, risk behaviours, HIV infection

Introduction

The importance of injecting drug use in the many epidemics of HIV in Asia has been sporadically recognised, but like injecting drug users (IDU) themselves it is often marginalized. Although many discrete [1–3] and interconnected [4–6] epidemics of HIV infection among IDU in various parts of Asia have been well described, their role as epicentres for wider epidemics, and their impact on whole communities, has undergone little formal investigation. Accordingly, public health responses to the specific issue of HIV among IDU in Asia have been slow to emerge and, more generally, this issue is seen as secondary to the reduction of drug demand and the control of supply.

The record of success of demand and supply reduction attempts in Asia is, however, as parlous as anywhere else in the world, as measured by the rapidity with which new populations of IDU appear and with which HIV spreads in these populations [7–12]. Here, we review the ever-changing scene of illicit (and sometimes licit) drug production, trafficking and consumption in Asia, as a background to the emergence and spread of injecting as a common route of administration and HIV infection as an almost inevitable consequence.

Methodological note

The role of the various Asian countries in the production, trafficking and use of illicit drugs is complex (Table 1). Many aspects have never been formally studied, and by their natures are intensely difficult to accurately describe or measure. The review presented here comes from a comprehensive literature review and consultation with over 400 key informants in Asia and elsewhere carried out by the Asian Harm Reduction Network under the auspices of the United Nations Joint Programme on AIDS Asia–Pacific Intercountry Team's Task Force on Drug Use and HIV Vulnerability in late 1997. Opinions expressed, however, are those of the authors.

Patterns of drug production, trafficking and use in Asia

The historical centre of opium production in the Golden Triangle region of Asia, Myanmar, continues to support a thriving opium industry, producing over 80% of the opium cultivated in southeast Asia, and increasingly turning to heroin production [7,13–15]. Trafficking of opiates out of Myanmar is continually finding new routes, along which new populations of opium users spring up. The traditional methods of opium and heroin use, that of smoking or inhaling vapours produced by heating the opiate, often rapidly give way to heroin injection, probably for reasons of cost-effectiveness. These transitions are followed almost inevitably by explosive epidemics of HIV infection [16–18]. Trafficking continues from Myanmar through Thailand to Malaysia, Singapore and onwards; major routes that have opened up over the last decade include those across the southwest of China to Hong Kong, through the northeast states of India, and across Laos and Cambodia to Vietnam and beyond [7,19–21].

Heroin is increasingly replacing opium as the major drug smoked or injected, although substantial populations still inject so-called 'blackwater opium' in Vietnam and Cambodia (left over after smoking, and dissolved in often unsterile water) [20,22]. These changes in the region have involved new and younger populations in IDU, with concomitant risk of HIV infection. Latterly, new waves of heroin smoking are being seen among even younger populations, with proportions moving from smoking to injecting [23,24].

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ISBN 0-41283-650-5 ISSN 1350-2840

Table 1. Involvement of Asian countries in illicit drugs.

Country	Major involvements in drugs	Major drugs involved	Number of drug users	Number of IDU	Injecting behaviours
Myanmar	Production, refining, trafficking, consumption	Opium, heroin, amphetamines	?	300 000	'Professional injectors'
China	Precursors, trafficking, production, consumption	Opium, heroin, amphetamines	Official: 56 000 unofficial: NA Yunnan: 100 000	60 000 60 000–90 000	Self administered
Thailand	Trafficking, consumption, some producing/refining	Opium, heroin, amphetamines	1.29 million total 257 000 amphetamines Bangkok: 36 000	?60%	Self administered
Vietnam	Trafficking, consumption	Opium, heroin	185 000–200 000	50 000+	'Professional injectors and self administered
Malaysia	Trafficking, consumption	Heroin, morphine, amphetamines	180 000–400 000 50% heroin	?	'Professional injectors' and self administered
Cambodia	Trafficking, some production, refining, consumption	Opium, heroin, amphetamines	NA	NA	Injecting occurs
Laos	Production, trafficking, refining, consumption	Opium, blackwater opium, heroin	NA	NA	Injecting occurs
[Hong Kong]	Trafficking, transhipment, consumption, finance	Heroin, amphetamines	30 000–40 000 mostly heroin	25 000–32 000	Self administered
Singapore	Trafficking, transhipment, consumption, finance	Heroin, some amphetamines	9000 in rehab, >90% heroin	?	Most smoking
Taiwan	Trafficking, consumption	Amphetamines, heroin	200 000–300 000	?	Most inject self administered
Philippines	Production, consumption	Marijuana, amphetamines	?	2000 Cebu City	Most inject self administered
Indonesia	Production, trafficking, consumption	Ecstasy, marijuana, heroin	?	30 000–40 000	Self administered
India	Production, trafficking, consumption	'Brown sugar', heroin, cannabis, buprenorphine	3 million heroin users	25 000–40 000 Manipur	Self administered
Nepal	Production, consumption	'Brown sugar', heroin, cannabis	25 000–40 000	2000 Kathmandu	Self administered
Bangladesh	Minor production, consumption	Heroin, cannabis, buprenorphine	?	?	Self administered
Sri Lanka	Production, trafficking, consumption	Heroin, cannabis, users	50 000 heroin	?	? Self administered

IDU, injecting drug users; NA, not available.

Amphetamines have been available in the region for some years, but recently there has been an upsurge in production, trafficking and consumption [25,26]. The majority of the precursor chemicals (especially ephedrine) are diverted from the pharmaceutical industry in China, and shipped to Taiwan, Japan and the Philippines for production of amphetamines, consumed locally and for export. Recently the production of amphetamines has increased in Myanmar, Laos, Cambodia, Thailand and Vietnam. From China and Myanmar the major production is trafficked for consumption in Thailand, and increasingly onwards to other southeast Asian countries [7,17].

China has seen increasingly widespread drug use from the early 1980s, coinciding with the economic 'open door' policy [27]. The highest concentrations of drug use are in the southwest, on the border with the Golden Triangle, especially in the provinces of Yunnan, Guangxi and Sichuan along trafficking routes to Hong Kong and Canton, but also spreading towards the northwest (Xinjiang Province), northeast and to the interior [28,29]. Increasing amounts of heroin and other opiates from the Golden Triangle are entering China, 90% originating from Myanmar. There is increasing evidence of domestic production and trafficking of opium and heroin in China for the growing domestic market [7,15]. The more recent and quite severe increase in drug trafficking and drug use in various cities throughout the country is closely connected with internal migration, which is associated with rapid economic development especially in the Special Economic Zones and is estimated to be as high as 120 million people [27].

In general, Thailand, Malaysia and Vietnam are both trafficking and consuming countries, although they also have limited production and refining of drugs. Thailand's opium poppy cultivation has diminished significantly over the years but importation from Myanmar continues to rise for local consumption and for shipment to world markets [7]. Recently, heroin has replaced opium as the drug of choice among the northern hill tribes of Thailand, encouraging the establishment of drug trafficking organizations within the country and the expansion of their networks [30,31]. Heroin use is very widespread, affecting most urban centres and rural and remote communities. The production, trafficking and use of methamphetamine is reported to be rising rapidly [24,32].

The use and trafficking of illicit drugs has increased in Vietnam since the 'Doi Moi', or open door policy, announced in 1986, making Vietnam an important country in the global narcotics trade. Most of the heroin and opium traffic originates in Thailand, crossing either through China or Laos before entering Vietnam. Opium is the most popular illicit drug followed by pharmaceuticals such as pethidine, morphine, and diazepam; the favoured route of administration is by injecting. The use of heroin, which had largely disappeared from Vietnam after 1975, has re-emerged since the mid-1990s, increasingly involving younger populations who smoke the drug, but also increasingly move to injecting. In recent years, there have been reports of use of methamphetamine in Vietnam [7,33].

Opium poppies are not grown in Malaysia, but because of its proximity to the Golden Triangle there has long been significant use of illicit drugs in Malaysian society. Now, as historically, heroin enters Malaysia both overland and by sea, usually from Thailand [7,8]. The movement of populations from both sides of the border has grown enormously, bringing with it an increase in the trafficking of narcotics, mainly heroin and opium [34]. The most popular illicit drugs used are heroin, followed by cannabis and amphetamines.

Cambodia and Laos are increasingly involved in trafficking of drugs from the Golden Triangle region, and consumption is concomitantly increasing in these two countries. Cambodia is a leading transmitting and trafficking country, situated in close proximity to one the world's most prolific opium growing regions. Although Cambodia is not a traditional opium producer, there are reports of opium cultivation and of amphetamine factories. Amphetamines are available at Phnom Penh's entertainment centres, and heroin and opium are available at so-called 'shop houses' [7,20,35].

Hong Kong and Singapore have their own populations of drug users, but their major importance is as transhipment points and financial centres for the drug market. Hong Kong is a major centre for trafficking of high and increasing proportions of the heroin originating from the Golden Triangle region, having been imported through China, Laos, Cambodia or Vietnam. Hong Kong has also become an important source and transhipment point for ephedrine. There has been a recent significant rise in heroin use amongst the youth, which maybe linked to the rapid social changes that are taking place [7,23]. Similarly, Singapore does not cultivate, produce or process narcotics, but is a leading regional shipping and financing centre and is used by international traffickers to transit narcotics and for the laundering of drug proceeds. Since the 1970s, heroin, mostly entering from Malaysia, has remained the drug of choice and the leading drug problem (E. Tan, personal communication, 1997) [7].

The Philippines is a major producer and exporter of marijuana; heroin use is uncommon, but opioid pharmaceuticals and amphetamine (or 'shabu') are common. Since 1990, amphetamine use has been widely detected in Taiwan, generally produced within the country, but the closure of illegal laboratories in recent years has shifted many operations to the Chinese mainland. From mid-1993, there appears to have been a shift from amphetamine to either heroin alone or a mixture of heroin and amphetamine [7,22,36,37].

India remains an important producer of legal narcotics (gum opium), pharmaceuticals such as buprenorphine and propoxyphene, and some illicit narcotics, and a crossroad for international trafficking. Following the prohibition of cannabis and opium in 1985, the heroin based 'brown sugar' from Afghanistan appeared in many major urban centres in India [7,38]. This is the domestic drug of choice except in the northeast states of Manipur and Nagaland where injectable heroin is preferred [2,39]. Although Nepal is not a significant producer of illicit drugs, there has been an increase in the number of heroin users, with most heroin coming across the open border with India [40]. Cannabis cultivation is substantial and the use of cannabis has been culturally accepted for centuries [7,39,41]. In much of northern India and Nepal, irregular, costly or scarce supplies of heroin have led to the increasing injection of opioid pharmaceuticals.

Although its neighbours Myanmar and India are large opium producers, Bangladesh is not a major producer of narcotics, but heroin and buprenorphine are the most frequently used drugs, imported from Myanmar and India, respectively. In Sri Lanka, the leading drug problem is heroin and the country has become a growing transhipment point of illicit drugs with increasingly reported heroin seizures imported from Myanmar. The major drug grown in the country is cannabis [7,39].

Populations involved in illicit drug use

Populations involved in the use of illicit drugs vary widely throughout southeast Asia in their numbers, drugs used

and modes of administration, but in relation to opiates each generally is placed along the continuum of movement from opium smoking among older generations to heroin or other opioid injecting among younger people. New drugs (such as ecstasy) and the diffusion of previously restricted drugs (such as amphetamines and opioid pharmaceuticals) are finding markets among new populations of young people, indicating further the diversification of drug markets.

Populations at risk of HIV infection through IDU are therefore being created continually in multiple ways in many parts of the region. Drug use and trafficking is associated with mobile populations and across borders, such as among ethnic minorities across the Thai–Myanmar, China–Myanmar andVietnam–China borders. In addition, it is increasingly associated with internal and external migrations and increased contact and openness with the West in relation to economic development [7,26,27]. The Asian drug scene is rapidly becoming part of the global drug scene.

Heroin has become the major drug of choice in Myanmar, primarily injected, although there is still much smoking or inhaling of heroin [26]. It was estimated in 1996 that there were up to 300 000 IDU nationwide, out of a total population of 43 million [42]. Most IDU (>90%) are young men, the highest prevalences of IDU being in border areas where there has been a traditional use of opium, as a result of socioeconomic development resulting from cross-border trade and migration. Floating populations of workers arriving in mining towns have accelerated initiation into the use of illicit drugs, mainly heroin [26,42]. Such focal points enhance the dissemination of drug use to the whole country.

In China, the official estimate of the number of 'registered' drug users was 148 000 in 1992; by 1997 this had grown to an estimated 560 000, of whom a growing proportion are IDU. In 1994, it was conservatively estimated that the number of IDU was at least 60 000. It was estimated in 1995 that there were up to 100 000 drug users in the Province of Yunnan, most of whom were believed to be IDU. Outside Yunnan, IDU varies widely by region: 60–90% of drug users inject in Guangxi, 20–30% in Guandong and Sichuan and only 5% in Guizhou Province [27,28,43].

In 1993, the Thai Development and Research Institute (TDRI) estimated that there were 1.29 million drug 'addicts' in the country, approximately 2.2% of the population, and the Office of the Narcotics Control Board estimate there are 25 000 new cases each year [44]. Up to 60% of those entering treatment centres are IDU. In 1994, it was estimated that the number of IDU was between 100 000 and 240 000 [45]. In 1991, it was estimated that there were 36 000 IDU in the Bangkok area; Bangkok has higher levels than other regions of the country, but high rates of IDU have also been reported in other larger urban centres, especially Chiang Mai and Chonburi, and increasingly among rural populations, especially hill tribes in the north and in southern provinces in association with the fishing fleets [7,46]. Heroin use is found throughout the country, whereas amphetamine use is so far generally located in the central and northern regions of the country. It has been estimated by TDRI that there are up to 257 000 amphetamine users, currently surpassing the number of heroin users [24,25].

It is estimated that there are 185 000–200 000 opiate users in Vietnam, 135 000 of whom are thought to be opium smokers, and more than 50 000 IDU, with 30 000 IDU in Ho Chi Minh City and up to 6000 in Hanoi [33]. These figures may underestimate the actual numbers. Dealers who often act as 'professional' injectors are widespread; in Ho Chi Minh City alone there are an estimated 3000 [47]. Of all IDU, 70% are under the age of 30 years, and 95% are male [48].

In 1996, it was estimated that there were 180 000–400 000 drug users in Malaysia, but the number of active IDU in Malaysia, both dependent and non-dependent, is not really known. In 1994, it was estimated that 50% of drug users used heroin, of whom 15–20% inject. Large urban centres like Kuala Lumpur and Penang have large populations of IDU, but no state is free from IDU. It is estimated that 90% of drug users are male and between the ages of 19 and 39 years, many unemployed [49,50].

A recent study in Cambodia found that although many key informants claimed that a problem with illicit drugs does not exist, others believed that there was an increased availability and use of drugs, as a result of Cambodia's lax drug laws, inadequate policing, the many socioeconomic problems and an unregulated financial system. How widespread the use of illicit drugs is cannot be accurately determined because no quantitative analysis yielding hard data has been undertaken [7,20].

It has been estimated that there are currently 30 000–40 000 active drug users in Hong Kong, the majority of whom use heroin. In 1996, the number of 'registered' drug users was 12 342, of whom >80% were male, and 89% reported heroin as their main drug, of whom most injected. There is a trend towards younger people using drugs: in 1995, 10% of the new users of illicit drugs were under 16 years old and 37% were 16–20 years old [23,51].

In 1996, there were approximately 9000 drug 'addicts' undergoing rehabilitation in Singapore's treatment centres, most (>90%) reporting heroin as their primary drug, but there is no available estimate of the numbers of IDU in Singapore (E. Tan, personal communication, 1997). It is reported that there is an increasing trend towards IDU [52].

There are conflicting reports about the number of IDU in the Philippines with one estimation of 2000 IDU in

Cebu City alone, but another study in Manila finding only one IDU out of 960 drug users. It is generally perceived that IDU is minimal in the Philippines, but there are some indications that it is more extensively practised than currently officially recognized [7,53].

Police in Taiwan estimate the total illicit drug using population as 200 000, whereas public health authorities estimate around 300 000, of whom 100 000–150 000 are heroin dependent. The proportion that is injecting is unclear, but it is believed to be high and growing [54].

The use of illicit drugs in India is widespread. Nationwide estimates of the number of drug users have not been made, but it is estimated there are around 3 million heroin users [39], plus large populations using pharmaceuticals. The State of Manipur alone has an estimated 25 000–40 000 IDU out of a population of 1.8 million [2,40]. It has been estimated that there are between 25 000 and 40 000 drug users in Nepal, of whom 10% are believed to be IDU. In the capital Kathmandu, it is estimated there are 2000 IDU [41,42]. Estimates of the number of drug users in Bangladesh are not available. There are estimated to be up to 50 000 heroin users in Sri Lanka [7].

Risk practices and trends in behaviours

For both individuals and for populations of drug users in most parts of Asia, the move from smoking or inhaling to injecting of heroin, once established, is rarely seen to revert; such transitions are far more common than transitions in the reverse direction. The major influence on these transitions would seem to be economic [43,48], but this has not been deeply investigated. Among injecting populations, the sharing and reuse of injecting equipment is subject to many pressures, including scarcity and relative cost of equipment, social organization of drug use, and custom [26,27,31,48].

Myanmar has a culture of 'shooting galleries' in which professional injectors administer an illicit drug, generally heroin, to the client, who could be located in many areas of the country, including mining areas, but are reportedly rare in urban communities. Such establishments commonly have one set of injection equipment; the IDU pays for both the heroin and for its injection, and the use of bleach or sterilization of equipment is rare [12,55]. A report from a drug treatment centre in 1993 found that 83% of new attendees shared their needles and other injecting paraphernalia [55]. The open sale of injecting equipment is fraught with problems because a person found in possession of a syringe and/or needle is liable to arrest. Prohibition and cost of injecting equipment, as well as comradeship, favour the sharing of injecting equipment [26,43].

In southwest China, heroin use is either by smoking in cigarettes, inhaling or increasingly by injecting. In 1995, a study in Yunnan Province reported that IDU in the cities favoured heroin mixed with diazepam, whereas those in the remote areas preferred opium and pain killers [44]. There are reports that most IDU from the Lonchuan county, southwest China, obtain used needles and plastic tubing from waste disposal sites of local hospitals and clinics. In 1992, a study in southwest China reported that before 1987, <1% had been injecting heroin, but by 1992, 33% of all drug users were administering their drugs by injecting [56]. Throughout southern Yunnan IDU continues to increase in popularity. Sharing of needles and syringes has been reported to be common practice in various regions of the country, with small but increasing proportions of IDU cleaning their injecting equipment; methods include either boiling the needles or washing the needles in cold water [44]. In the county of Dehong, Yunnan Province, more than 30% inject, with 70–100% sharing needles and syringes [27].

The most popular route of administration of heroin in Thailand is by injecting. There are conflicting reports in urban settings on the extent to which IDU share injecting equipment. It has been reported that since HIV prevention campaigns targeting IDU were launched, sharing of injecting equipment has dropped markedly, but these data are limited in scope and coverage [46]. In the hill tribes of Thailand, where the injecting of heroin was introduced much later than in the rest of the country, it was very common to share equipment, occasionally rinsing with water but most often not [31]. The boiling of injecting equipment or cleaning needles with bleach appears not to be widespread, resulting in the common use of inadequate cleaning methods. Amphetamines, a relatively recent introduction, are generally taken orally or smoked, but there are reports of injecting [7,57].

'Blackwater' opium is commonly injected in Vietnam. The mixing of opium with pharmaceutical products, such as diazepam, is a common practice [21,33,58]. Transitions from smoking drugs to injecting are increasing [21,33]. Most IDU in urban settings visit what are commonly termed 'shooting galleries', where the dealer who usually supplies the illicit drug also acts as the 'professional' injector. Up until the mid-1990s, there were many accounts of using the same needle and other injecting paraphernalia (the 'common pot' for the blackwater opium) for 10–100 clients in a day without any attempt at effective sterilization [21,58]. In 1996, behavioural changes were detected in some areas, and a study in Ho Chi Minh City found that an increasing number of IDU no longer shared needles and syringes. Attempts at cleaning needles and syringes by both the 'professional' injector or by the majority of IDU generally proved inadequate. The sharing of the 'common pot' containing the opium remains common practice [21,46,58]. It is estimated that 50–80% of IDU regularly share needles and syringes, with only a minority using effective methods to clean their injecting equipment [48,58]. In 1996, a study in Ho Chi Minh City reported

that 51% of IDU interviewed visited a 'shooting gallery' with 41% injecting at home. Outside urban areas in Vietnam, opium is usually smoked and little injecting has been detected to date, but there are reports of increasing prevalence of injecting in rural areas [47].

Most studies of IDU in Malaysia have found that higher percentages of drug users inject heroin rather than smoke or snort it (some participants in these studies were unaware of any other method of administration). Traffickers travel around villages selling heroin, often prepared in the syringe, resulting in the one needle and syringe being used many times across several villages [8]. A substantial proportion of IDU have shared their needles and syringes, with little effective cleaning beforehand. Needles and syringes can be purchased from pharmacies, but carrying a needle can be seen as incriminating evidence of drug use and IDU may therefore be reluctant to procure clean injecting equipment from a pharmacy [8,50].

In Cambodia, opium is both smoked and injected, and heroin is injected, as in the Phnom Penh 'shop houses', in the cafes frequented by the semiskilled Vietnamese labourers, and in certain nightclubs. Syringes and needles are available at every authorized and unauthoriz ed drugstore, without prescription [20].

A study in a voluntary rehabilitation centre in Hong Kong in 1990 and 1992, reported that 84.8% of those surveyed took drugs by injection, heroin being the preferred drug, and nearly 70% claimed never to have shared injecting equipment. A behavioural study over the period 1990–1995, reported that needle sharing was not common practice amongst IDU who had attended methadone clinics following counselling [59]. In 1996, the predominant illicit drug used continued to be heroin, and 60.6% of registered heroin users were known to favour injecting. In contrast, among newly reported cases heroin was still the most popular drug, but inhalation was the preferred route (46.7%) with injection preferred by only 19.6%. Transitions to injecting seem to take place once users have developed a habit past initial experimentation [23]. In 1995, a survey among 'street addicts' indicated that 38.5% of IDU shared needles regularly or had just ceased to do so in the previous 3 months. A methadone clinic study in the mid-1990s reported that of those who had ever shared their needles, 80% had done so in the initial period of their drug addiction [60]. Needles and syringes are easy to obtain at most pharmacies without a prescription, but despite this a study in 1996 reported instances of needle sharing as a result of a perceived lack of availability of clean syringes [61].

The typical heroin user in Singapore inhales, with heroin injecting reported to be rare. There is no information available as to whether IDU share needles or engage in any harm reduction practices, such as the use of bleach to clean injecting equipment. Needles and syringes are widely available without prescription (E. Tan and R. Chan, personal communication, 1997).

In the Philippines, the little available information suggests commonly injected drugs include morphine, analgesics and muscle relaxants, with needles and syringes purchased from drugstores, obtained without prescription. Sharing of needles occurs and results from a lack of money, an inability to gain access to clean equipment and camaraderie among friends [36,62]. A needle exchange program began in Cebu City in 1996, undertook surveys of its clients, and found trends towards safer drug taking practices (C. Aquino, personal communication, 1997).

In Taiwan, most beginners mix heroin with tobacco in cigarettes, but following a period of smoking or inhalation that might last weeks or months, they begin injecting heroin. In an analysis of clinical characteristics of heroin dependent persons admitted for detoxification in Taipei City Psychiatric Centre during the mid-1990s, 100 patients (35.3%) smoked mixed heroin and cigarettes as the only route, while the other 186 patients (64.7%) injected. The Department of Health has placed no controls on syringes and needles, which can be purchased, without prescription, throughout the country [37].

In India, brown sugar heroin has generally been administered by inhalation, but there has been a recent trend towards injecting, particularly in the cities of Mumbai (Bombay) and Chennai (Madras) [63]. More recently, the injecting of buprenorphine is gaining popularity among former heroin users [7,39]. The sharing of injecting equipment and inadequate cleaning techniques of needles and syringes is common [40,64]. In Nepal, it has been reported that injecting may be increasing. Injecting within a group is common practice, but the sharing of injecting equipment is less prevalent in the capital Kathmandu following the establishment of a needle exchange program [7,41,42]. In Bangladesh, heroin is reported to be injected and a similar trend is seen with buprenorphine, with the sharing of injecting equipment reported to be frequent in Dhaka [39,65]. Heroin users in Sri Lanka are reported to mainly administer the drug by inhalation [39].

HIV transmission

There have been several comprehensive reviews of HIV prevalence among IDU in Asian countries [4–6].

The prevalences of HIV infection among IDU in southeast Asia are among the highest that have been reported in the world; few signs exist of any major decrease of this epidemic. IDU are widespread, participate in high-risk sharing of injecting equipment with multiple partners, are mobile and mix with other injectors in the region, and have a high prevalence rate of HIV infection, therefore

Table 2. HIV and injecting drug use in Asian countries.

		Surveillance cumulative HIV infections				Surveys of HIV prevalence in IDU			
				Reported					
Country	HIV risk behaviours	Year	Estimated	*n*	%IDU	Year	Location	Prevalence	Ref.
Myanmar	>80% sharing	1993	500 000	7500	73%	1995	Myanmar	56.5%	[66]
						1994	Kachin State	93%	[42]
						1994	N. Shan State	82%	[42]
China	70–100% sharing	1996	200 000	5157	57.4%	1996	Ruili, Yunnan	76%	[67]
				Yunnan	60%	1997	Longchuan, Yunnan	57.6%	[67]
				Xinjiang	60%	1997	Yiling City, Xinjiang	70%	[67]
						1997	Baishi City, Guangxi	77.2%	[67]
Thailand	40% still sharing	1997	900 000 (Reported 43 000 AIDS cases)	NA	37%	1995	Bangkok	33%	[44]
						1995	Chiangmai Province	37.6%	*
						1995	Songkhla Province	46.5%	*
Vietnam	50–80% sharing	1997	3000–580 000	6700	70%	1997	HCMC	37.4%	[68]
						1997	Lang Son, N.Province	97%	[68]
						1996	Hanoi	2%	†
						1997	Khanh Hoa	68%	[68]
						1997	Quang Ninh	90–100%	†
Malaysia	80+% sharing	1997	50 000	21 863	76%	1996	entering DRC	40%	[8]
						1992	Kota Bharu	30%	[69]
Cambodia	NA	1997	155 000	7705	0.03%	NA			
Laos	NA	1997	NA	240	NA	NA			
Hong Kong	30% sharing	1997	2000–3000	855	1.9%	NA, but believed to be low			
Singapore	Most smoking little sharing	1997	NA	631	2.2%	NA, but believed to be low			
Taiwan	Reported sharing	1997	5000	1491	3.3%	low			
Philippines	Reported sharing	1997	18 000	916	0.3%	low			
Indonesia	Sharing common	1997	200 000	558	NA	NA, but believed to be low			
India	Sharing common	1997	3–5 million	7034	NA	1995	Manipur	55.7 %	[70]
						1997	Chennai (Madras)	15–20%	[38]
Nepal	Outside of Kathmandu sharing is common	1995	NA	331	2.7%	1995	Kathmandu	0%	[40]
Bangladesh	? Sharing common	NA				NA			
Sri Lanka	NA	NA				NA			

*Poshyachinda V, Perngparn U, Danthamronkul V, personal communication, 1998; †Kraus S, personal communication, 1997; Country Programme Advisor, Joint United Nations Programme on HIV/AIDS, Vietnam. NA, not available; HCMC, Ho Chi Minh City; DRC, drug rehabilitation centres.

increasing the likelihood of sharing injecting equipment with an HIV-positive partner [4,6]. Thus, this marginalized group of people often act as core groups and a major vector for the regional spread of HIV infection.

Various parts of southeast Asia have seen the most rapid diffusion of HIV infection among injecting drug users found anywhere in the world (Table 2). Within a period of approximately 12 months, many areas reached a prevalence of HIV infection among IDU of 40% or greater. In Myanmar recently, the HIV prevalence among IDU in Kachin State was 93% and in the Northern Shan State 82% [17,26]. Ruili county in the Province of Yunnan, China, has some of the highest rates of reported HIV infection in the country, above 70% [27]. Ho Chi Minh City has the highest reported number of HIV infections in Vietnam, making up 93% of all reported cases in the city [48]. In Bangkok, recent prevalence of HIV among IDU has stabilized to under 40% but has yet to show signs of decreasing significantly. In India, the HIV infection prevalence amongst IDU in the State of Manipur has been reported in past years as above 70%.

Discussion

What is immediately apparent from a review of the situation in Asia regarding the association of IDU and HIV infection is the dynamic nature of the patterns observed. New drugs are constantly appearing [7], and new populations are becoming involved in risky drug use practices, thus enhancing HIV transmission. Truly

explosive epidemics of HIV follow rapidly on the heels of the involvement of these new populations in injecting, providing core groups from which secondary transmission may occur. Moves from the smoking of opium to the injecting of heroin, new trafficking routes, the involvement of mobile populations such as the Thai fishing fleet and truck drivers travelling north from the Golden Triangle, internal migration associated with economic development and continuing armed conflict, are all involved in maintaining this dynamism [12,26,27,31]. Countries such as Thailand, Myanmar, Vietnam and Malaysia have all been host to large epidemics of HIV among IDU, most of which continue unabated. Other countries in the region, such as Laos and Cambodia, have not yet seen this phenomenon, but would seem to have all the preconditions for rapid shifts in administration route and subsequent HIV outbreaks [20,35]. Indonesian government authorities are very sensitive towards open dialogue on drug use issues, but recent anecdotal accounts indicate that there may be an estimated 30 000–40 000 IDU in the country (G. Loth, personal communication, 1997).

One newly emerging pattern is the wider use of amphetamines, their mixed use with heroin, and their impact on sexual risk behaviour for HIV prevalence. The coincidence of increased amphetamine availability in Thailand with decreased availability and increased price of marijuana may be just that, but this is a pattern that has been observed elsewhere. In many parts of Asia, as elsewhere, involvement of ethnic or other minorities in production, trafficking and consumption of illicit drugs [26,27] is one factor in the relative neglect that aspect of the epidemic has received in terms of response.

The methodological problems associated with monitoring both the use of particular drugs, especially those that are illicit, and the spread of HIV in association with that drug use are formidable in any setting. In many parts of Asia, these problems can be insurmountable with currently available resources and adverse social and legal contexts. As can be seen from this review of current knowledge, the result is that there are many gaps in our understanding of both patterns of drug use and of HIV transmission among drug users. To the degree to which the profile of the threat to the health of countries in Asia from epidemics of HIV among IDU can be raised, the importance of improving data on and the understanding of these patterns and their determinants will also be raised. Both are necessary underpinnings of successful prevention programs at the national and regional scale.

Two specific areas requiring urgent attention, upon which we have not touched in this review largely because of the almost total lack of data, are the role of incarceration of IDU in fostering HIV epidemics, and the often systematic discrimination against IDU. This latter includes lack or denial of access to primary health care generally, and to care and treatment for those IDU who have developed HIV-related disease. Both mitigate against both an improved understanding of the extent and nature of the HIV epidemic, and a humane and effective response to it [71].

The paradigm case of Manipur (where trafficking routes for heroin out of the Golden Triangle sprang up in the 1980s; where consequent epidemics of IDU, with continued recruitment of young people, have been occurring since the early 1980s; where HIV has been spreading at an explosive rate since at least 1989, and continues to spread at the same rates; where the initial response was confined to crackdowns and incarceration; where now there are epidemics of AIDS and tuberculosis, as well as of HIV and hepatitis C, well beyond the capacity of the medical system or indeed the society to cope; and where latterly some very brave people running small and underfunded programmes in the face of enormous difficulties have won support from a very brave government to take meaningful action) stands as exemplar for the situation in Asia. Its lessons must be learnt, and soon [2].

As well as in countries of southeast and south Asia, the preconditions for epidemics of IDU and HIV exist in western and central Asia. Lessons learnt from southeast Asia should be applied there as rapidly as possible and on a scale commensurate with the size of the potential epidemic.

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HIV series

Prevention of HIV infection in developing countries

Doris d'Cruz-Grote

The HIV/AIDS epidemic continues to spread rapidly in developing countries. Heterosexual transmission accounts for almost three-quarters of infections. Current strategies have been effective in the prevention of HIV spread within certain groups but they have had limited impact on the general spread of the epidemic. There is a need to complement these strategies with approaches that will influence the social and environmental determinants of risk to enable those vulnerable to infection to protect themselves.

The HIV epidemic continues to spread at a rate of over 6000 new infections per day,[1] the most rapid increases being observed in southern and central Africa and in South Asia (table and figure).[2] As many as 50% of all new infections are in women aged 14–24 years. By the year 2000, according to WHO forecasts, 30–40 million new infections will have occurred, 90% in developing countries.[3]

Heterosexual transmission is rising and mother-to-child transmission is also increasingly important. Significant levels of HIV infection have been detected among injecting drug users in countries in South and South-East Asia and in Latin America. We know that injecting drug users have a pivotal role in the spread of infection to the non-drug-using heterosexual population.[2,3] Documentation of seropositivity among blood donors in India[4] and Thailand underlines the importance of donor selection and the rational use of blood transfusions.[3] Since heterosexual transmission of HIV accounts for 70–80% of the cases in developing countries,[5] prevention of AIDS is and will remain linked to sexual behaviour and to the factors that affect such bevhaviour in various settings and cultures. In this review I will discuss the prevention of heterosexual transmission in developing countries.

Current programmes against heterosexual transmission of HIV are mass-awareness campaigns for the general public and interventions combined with supportive services targeted at specific groups. These programmes have been effective in the prevention of HIV spread within these groups[6–9] but have not resulted in sustained behaviour change and have failed to prevent the general spread of HIV/sexually transmitted diseases (STDs) in developing countries.[3,5,10] Most prevention programmes concentrate on influencing individual behaviour and do not take into consideration the social, economic, and structural determinants of risk that act as barriers to the adoption of preventive behaviour.[5,8,10–12]

Mass-awareness campaigns

National mass-awareness campaigns have been implemented in many parts of sub-Saharan Africa, Mexico,[13] and countries such as Thailand[6] and India[4] but very few of these have been rigorously planned or evaluated at the national level. In many cases, to be seen to be doing something as quickly as possible to halt the epidemic was deemed more important than investigating why and how and with what specific goals interventions should be undertaken. There is some evidence that mass-education campaigns in certain countries—eg, Mexico, Tanzania, and the Central African Republic—have increased public knowledge of AIDS but there is hardly any evidence of impact on behavioural change.[13–16]

Region	Mid-1996 estimated HIV prevalence*	2000 projected HIV prevalence†
Australia, Europe, and North America	>1·2 million	1 million
Latin America and Caribbean	>1·5 million	>2 million
Africa	>8·5 million	>9 million
Asia	>3 million	9 million
Global total	14–15 million	20 million

*Total number of HIV-infected adults currently alive. †Total number of HIV-infected adults in the year 2000.

Table: **WHO estimated and projected HIV prevalence in adults by "macro" region, July, 1996**

Targeted interventions

Interventions consisting of three interrelated strategies—reduction of number of partners, promotion of condom use, and control of STDs—targeted at populations at risk have resulted in increased condom use within these groups, as has been seen in sex workers in Calcutta, India,[17] Mexico,[18] and Zimbabwe[7] and in long-distance lorry (truck) drivers in Tanzania.[19] However, there is

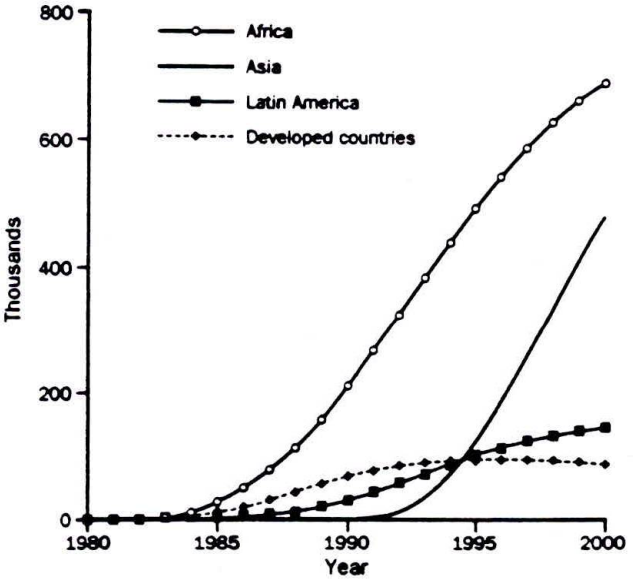

Figure: **WHO estimated and projected annual adult AIDS incidences by "macro" region**

Lancet 1996; **348**: 1071–74

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ample evidence to show that this three-pronged strategy is inadequate to meet the prevention needs of sections of the population most vulnerable to infection and who do not have the means to protect themselves.[5,8,10-12]

Reduction in number of sexual partners

Most women in need of prevention are not sex workers but women with one partner—their husband. For them monogamy is an irrelevant strategy. Studies indicate that 50–80% of all infected women in Africa have only one sexual partner,[11] and at 1991 infection rates an estimated 1500 monogamous women were being infected each day.[20] In India, 30–50% of HIV-seropositive persons are women, most of whom have been infected via heterosexual transmission and many of whom do not belong to high-risk groups.[21]

For a large subset of women who are not monogamous, having multiple partners is a means of survival. With few marketable skills, women may have to use sex as a means of earning a living for themselves and their children.[5,12,17,22] In Bombay, poor, widowed, divorced, or abandoned women reported having sex with slum landlords in return for access to resources or guarantees of physical security.[23] This observation clearly illustrates that when a woman is economically powerless to negotiate her basic needs, or is subject to domestic violence and abuse, encouraging her to negotiate safer sex is unrealistic. Thus the strategy of partner reduction is relevant only if women are free to control when and with whom they have sex.

The same principle applies to adolescents and young people living in economically and socially underpriveleged environments or in broken families. For them, selling sexual services is a means of survival not only for themselves but also often for the whole family.[24] Without a supporting network and access to education and to health services, even when they know the preventive measures they should take, they are in no position to regulate their behaviour. Likewise, single-gender labour migrant groups and long-distance truck drivers, temporarily displaced into the all-male community of work camps and hotels away from the tight control of their home communities, are particularly vulnerable to HIV/STD infection as the result of multiple partner sharing. Having no access to affordable health care and sexual health promotion programmes at their points of destination, they are not able to overcome the obstacles to risk of infection.[25]

Condom use promotion

Massive efforts to increase condom use are still impaired in some countries by high cost, poor quality, limited availability, and lack of accessibility.[12,26-28] Even when condoms are available, mens' decision to use them may be hampered by cultural misconceptions and social inhibitions. Women cannot control the use of male condoms when they cannot discuss sex freely, and they also fear being labelled promiscuous. Socially, women are under pressure to engage in sex without condoms because of the importance of fertility and of having children for the stability of marital unions and the social and economic security that this supposedly brings.[5,12,21,27]

STD control

STD control programmes were initially among the most neglected of all health-sector activities and the least utilised largely because of the stigma attached to such services.[26,27,29] There is still a tendency to regard STD control more as an individual's problem than as a public-health concern. In many countries, STD control programmes focus on commercial sex workers and male clients and are coercive in nature.[12,27,30] In the Philippines, for example, a sanitation code stipulates that girls are permitted to work as "hospitality girls" only after being issued with special identification cards. If found positive for STDs at their compulsory 2-weekly check-ups, they have their identification cards removed until they have completed treatment, and those found HIV positive have their cards removed permanently. Without the necessary counselling and support services, most of the HIV-positive sex workers move to other areas.[30] Actions of this nature can be counterproductive to AIDS prevention since they force prostitution "underground" and increase the chances of the virus spreading.

Targeting only sex workers and their clients for STD treatment means ignoring the long-term reproductive health of men and women. It is hard to ignore data indicating that the rates of STDs are high not only in adults but also and more so in sexually active youth. In Thailand, two-thirds of patients diagnosed with an STD in medical clinics are under the age of 25, and in Uganda STDs are most common in 15–19-year-olds.[31] Reproductive tract infections lead to considerable mortality and morbidity in women but have remained one of the most neglected of all health issues. Bang and Bang[32] conducted a study in two villages in Maharashtra, India, reported in 1989, which showed that 92% of the 650 women examined had reproductive tract infections and only 7·8% of these women had ever sought of received treatment for these diseases. This neglect has been further highlighted by the results of a more recent study in rural Nigeria on reproductive tract infections and abortions among adolescents. Almost half (43·6%) the adolescents less than 17 years of age reported themselves to be sexually active, 40·4% had a confirmed reproductive tract infection, and 19·4% had an STD.[3]

Tailoring prevention to developing countries

All the evidence shows that strategies which have proved effective for certain at-risk groups are not meeting the needs of those most vulnerable to infection—namely, women, youth, single-gender migrant groups, and other marginalised segments of the population living under economic and social deprivation. One of the underlying reasons is that much of the early work on prevention attempted to standardise responses and ignored the contextual factors and the role of gender in sexual behaviour.[5,8,10,12,34] Behaviour change has become synonymous with HIV prevention and its theories are being applied indiscriminately to monogamous wives, adolescents not yet sexually active, and populations who have no access to services.[11,12,35]

How can we reduce the vulnerability of women, youth, and other marginalised groups to infection and strengthen their skills for protection?

Provision of sexual health education

All individuals should have access to correct, objective, and complete information not only on HIV/AIDS but also on sexual and reproductive health. Young people are achieving physical maturity earlier, continuing their education longer, and marrying later. Consequently,

targeting abstinence as the primary goal of HIV prevention is unrealistic, as is implementing HIV/STD prevention in schools with no mention of sex. Recent studies show that comprehensive sexual health education, when implemented before adolescents become sexually active, is effective in encouraging young people to delay sexual activity and to practise safer sex when they are sexually active.[29,30]

Women's groups repeatedly emphasise the need for women to be informed about their reproductive system if they are to protect themselves from sexually transmitted infection. They have found that participatory community-organising approaches and collective action by women, as used in the Calabar Project in Nigeria,[12] have proved effective not only in encouraging women to voice their anxieties, problems, and needs but also for developing strategies and messages that are appropriate and acceptable.[12,23,34,36] Focus on women alone is not sufficient. Community-organising approaches also offer potential for addressing sexual health concerns of men such as long-distance lorry drivers, members of armed forces, and men involved in the sex industry.[6,13,22,23] Likewise, youth organisations and clubs, which already exist in some communities, have proved useful in providing social support for young girls and in providing space for both girls and boys to discuss their anxieties, become conscious of gender issues, and articulate their needs for prevention.[34,35]

Well-designed sexual health information programmes are also necessary to counter underlying prejudices that lead to stigmatisation and discrimination of people living with AIDS/HIV[37] and for advocacy to convince decision-makers to make HIV/AIDS a priority issue.

Provision of relevant services

Unless STD service provision is reoriented to meet the long-term sexual needs of men and women, prevention of HIV/AIDS will have little chance of success. AIDS has shown that solutions to health problems cannot be found by setting up narrow neatly defined programmes such as family planning, HIV prevention, and STD control. Integrated sexual health services should be designed to provide informed contraceptive choices, counselling services, good follow-up care, services for safe abortion, and facilities for the diagnosis and treatment of STDs and reproductive tract infections not only for adults but also for youths.[5,12,29,33] To achieve these goals there must be improvements in health infrastructure and additional supplies of drugs and condoms. Staff should be trained to provide ongoing preventive counselling for those who are HIV negative, and medical assistance, social support, and advice on prevention for people living with AIDS and their families.[29,37]

Studies on sociocultural and programmatic barriers to seeking health care and decision-making are necessary to make services more accessible and responsive to users' needs.[21,34] Above all, strong political commitment is imperative to ensure ready access to information, health care, and condom promotion and distribution if interventions are to be successful and sustained.[8,10,29,38]

Creation of supportive social and economic environments

Information about HIV, availability of condoms, and provision of STD services cannot by themselves lead to improvements in sexual health and HIV prevention if prevailing social, economic, and cultural constraints hinder those most in need of these services from using them. These constraints are especially important when one considers women's low economic and social status.[22]

One example of the efforts being made to improve women's socioeconomic status within an existing AIDS programme comes from Zambia. Zambian women fish traders are frequently forced to provide sex in addition to cash to buy fish from fishermen. As a way to protect these women from this form of sexual exploitation, the National AIDS Programme, in collaboration with a women's group and the Zambian Cooperative Federation, have formed an economic cooperative that conducts collective bargaining for fish as well as giving credit to women fish traders.[34] Another important initiative has been implemented in Nigeria. This project, which promotes health, including HIV/STD prevention, through a functional literacy programme and intersectoral collaboration, has improved the health of the women and their children and has strengthened their capacity for income-generation through the provision of loans.[39] Experience gained in empowering women to exercise control over their lives in other areas—eg, family planning—can have implications for HIV/AIDS prevention. In Bangladesh, through the credit programme of the Grameen Bank, rural women have become economically empowered to exercise greater control over their sexual behaviour as indicated by their increased rates of contraceptive use.[40] Although these examples focus on women, HIV prevention for both men and women will be more effective through such economic enabling approaches.[8]

However, these are only short-term solutions. There will be little progress in improving the economic status of women and in promoting gender equity unless policy revisions are undertaken to enable access to education for all, and in particular access to education, skills training, and employment opportunities for women.[5,10,22] For both men and women, the evidence emphasises the singular importance of education as a means of gaining access to work and, earning money, and of improving family welfare and health status and hence of enhancing their capacity to protect themselves from HIV/STDs.[41] Simultaneously, the sexual vulnerability of women must be addressed. There is growing concern about the link between sexual violence and HIV transmission. Sexual abuse of girls and forced sexual intercourse have never been addressed adequately.[42] The culture of silence surrounding incest, sexual abuse, and sexual coercion must be broken. Communities must question cultural and traditional practices that put girls at risk and that sanction double standards which allow men multiple sexual partners and prevent women from protecting themselves.

There has to be political commitment to put AIDS and sexuality on the agendas of development programmes by integrating HIV prevention and promotion of sexual health into development programmes and by allocating resources to restructure health services. Development policies are needed to stem the flood of labour migration by increasing economic opportunities within the countries. The strengths and contribution of community-based and non-governmental organisations in the fight against AIDS and in the support of people living with AIDS must be recognised. Not only should these organisations, which address micro and macro socio-economic factors, receive more resources, but also they should be involved in policy development.

prehensive sexually transmitted disease (STD) treatment can result in decreased HIV incidence even in the absence of any significant behaviour change [16]. This is further evidence of the preventive effect of a structural intervention, albeit a physical one which relies on enhanced service delivery. While continuing to recognize the role of individual decision-making, all structural interventions acknowledge that meaningful reduction of HIV transmission can still occur even though the range of an individual's action may be too limited in certain contexts to allow for sufficient behaviour change.

Focusing on social and environmental determinants is not so much an innovative approach as it is a confirmation of recommendations already espoused by the World Health Organization and other health agencies. The principles guiding disease prevention and health promotion were developed in the 1986 Ottawa Charter [17]. Five steps were identified in the charter: apart from the necessity of developing skills, attention is also focused on introducing appropriate health legislation, creating supportive environments, strengthening community-based action and reorienting health services. These steps place health within a broader social agenda. They also place attempts to motivate individual action in the wider context of attempts to modify conditions of risk-taking [18,19]

The term 'enabling' is not new to public health. Enabling factors have been described previously to refer to those factors that make a desired change in behaviour possible [20], so that planning for a health education programme should include motivating people to action and also removing barriers that people might encounter. Others have suggested that, to be successful, health education must include an initial focus on the policy and normative environment in which a programme will develop, as a supportive environment can facilitate, and a hostile environment impede, effectiveness [21,22]. In the context of AIDS, enabling has been used to refer to the vulnerability of populations, for example, the obstacles that women encounter in reducing risk of HIV and the corresponding need to address these obstacles [23].

Although health behaviour theory does recognize the influence of social and environmental factors on individual behaviour [24,25], this recognition is rarely carried into intervention strategies [26–28]. One source of difficulty is that non-individual risk factors are essentially of a structural nature and, therefore, not perceived to be easily modifiable [28–30]. Another possible explanation is that HIV transmission relates to sex and drug use, both areas generally subject to taboo. The relationship between such behaviours and social and environmental factors has also never been well understood and is not easily explored. In addition, the discourse of decision-makers in AIDS is largely a biomedical one [27,31] to which only the more 'scientific' models and evaluation designs, more easily measuring change in individuals than in communities, appear credible. Thus, community and societal-level changes, being difficult to quantify and measure, are relegated to the realm of the non-scientific.

In our discussion of enabling approaches, we specifically exclude attempts to alter prevailing social norms about risk behaviours and HIV prevention. While these approaches are in themselves very important, they are somewhat different from the present concern. Their effect on behaviour is through individuals perceptions, and the choices individuals make about behaviour. Social norms also have a role in shaping the national discourse about prevention and are therefore important in creating a supportive environment in which prevention can take place. Nevertheless, in this review, we limit our concerns to those structural interventions which directly remove barriers to behaviour change or erect barriers to persistent risk-taking. Two categories of determinants, and hence two types of enabling approaches, are examined in this review: economic and policy. The assignment of a specific factor to either of the two categories, however, can be somewhat arbitrary given that they are interrelated.

Economic constraints and behaviour change

Health research has shown that populations of lower socioeconomic status are also those at a higher risk of morbidity and mortality resulting from health-related problems [19]. Poverty has been associated with increased risk for a wide variety of both infectious and chronic diseases, and also with limited access to health care [29]. This finding equally applies to AIDS, as the disease has, in recent years, come to affect disproportionately poorer communities [30,32,33]. Thus, not only are poorer rural and urban communities least able to bear the economic consequences of AIDS once the epidemic is established, they are initially at heightened risk of infection. Recognition of links like these between poverty and bad health outcomes is one of the factors that drives development programmes worldwide.

Even for those who are not poor, however, an economic dimension to risk behaviours may exist. In the history of public health, numerous attempts have been made to limit or discourage risky behaviour or, conversely, to encourage healthier behaviours through the use of economic incentives. Favourable insurance rates for automobile drivers with safe driving records or for individuals who do not smoke, drink immoderately, or who exercise regularly are economic incentives used by insurance companies to reinforce certain low-risk behaviours. Elevated prices on harmful products have also been tried, as in the case of taxation on liquor in many countries or, more specifically, on tobacco products in Canada. Evidence from that country indicates that, for some groups like adolescents, smoking may be a price sensitive behaviour that can be decreased through increased taxation (Fig. 1) [34]. Similar experience has been reported from Brazil, where the elimination of a tax on imported condoms greatly reduced the price to

consumers and is believed to have contributed to a substantial increase in condom sales (L. Rodrigues, personal communication, 1995). Affordable pricing is one of the elements of social marketing programmes for condoms and other commodities as well.

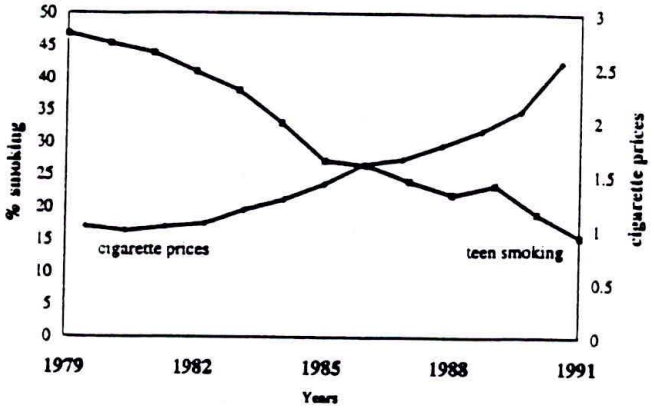

Fig. 1. Effect of cigarette prices on smoking among Canadian teenagers, 1979–1991 [34].

In recent years, AIDS research has increasingly focused attention on the vulnerability of women in sexual relationships [30,35,36], particularly when considering the constraints on women to propose or negotiate risk reduction practices with their partners [37,38]. One explanation advanced is prevailing social norms on gender roles, which encourage men but not women to make decisions about sexual matters [38]. Yet this vulnerability may also be a result of economic factors, such as women's limited access to resources and their subsequent financial dependence on their partners.

Economic factors, such as the need for some to leave their families, seek shelter in new settings, and live apart from regular partners for extended periods, heighten the probability of casual sex and the risk of HIV transmission among men and women alike. Seasonal migrant workers, truck drivers and soldiers are some of the predominantly male occupational categories associated with increased risk of HIV [39,40].

Patterns of drug use may also be associated with economic factors. Although drug use is commonly viewed as a consequence of psychopathology and influenced by peer norms, the conditions that affect initiation, mode of administration and access to treatment facilities may be shaped by economic considerations [18,33]. For example, injecting drug use can become more common than other modes of administration when it is perceived to be a less expensive way to get 'high' [41].

In no case is the evidence for the economic determinants of risk behaviour clearer than it is for sex work. Evidence from all regions of the world suggest that the overwhelming motive behind the exchange of sexual services for the provider is economic opportunity [33,42,43]. Whereas this is often a desperate survival strategy for some, it can sometimes be a lucrative alternative to existing employment opportunities for others [44]. In Thailand, for example, some female sex workers are able to generate incomes 25 times greater than textile workers [43]. In one case in Northern Thailand, the existence of training programmes and subsequent employment in the textile industry, at substantially lower wage, are not sufficient by themselves to stem the flow of young women into sex work; programme staff must also persuade family members that sex work is less acceptable employment for young girls in the age of AIDS than it once was [45]. The absence of employment opportunities to generate incomes of comparable magnitude or of educational opportunities that might lead to such employment, is why some may chose to remain in sex work [33,43].

Those involved in exchanging sex for money often have limited power to negotiate safer sex practices with clients [46]. Some of the more immediate factors explaining this include: (1) price of sexual encounter (those who earn less usually need more clients, limiting their ability to refuse services and exposing them to greater risk); (2) price of condoms (the price of condoms relative to earnings can influence the frequency of use); (3) earnings provided to third parties (many of those involved in sex work have to pay brokers, brothel or bar owners, and, in some cases, their regular partners a proportion of their earnings); (4) access to other sources of income (the absence of an alternative source of income could determine the number of clients which, in turn, influences the negotiating capacity) [42].

What are the possibilities of modifying economic determinants to reduce the risk of HIV? For sex work, a range of approaches has been proposed in the literature [28], of which relatively few have been attempted and even fewer have been evaluated. Most aim to reduce risk-taking by alleviating economic pressures on those entering or already involved in sex work [45]. A distinction can be made between approaches designed to intervene within the sex work context and those that intervene to prevent or reduce dependency on sex work (Table 1). All the options in the first column necessitate collective action to alter work conditions. This is possible when 'gatekeepers' at sites, such as bar owners and leading figures among sex workers, support such efforts. Examples of such collective action exist from Nigeria [47], Mexico [48] and Zimbabwe [49], all of which have demonstrated increased condom use. The options presented in the second column apply to all groups who are economically vulnerable to HIV infection. Approaches to increase the economic role and power of women as a means of increasing their ability to exercise control over their lives, including over their reproductive and sexual behaviour, have been tried in a number of places. Examples of such approaches exist from India [50], Zambia [51] and Bangladesh [52]. In Zambia, women fish traders are frequently forced to provide sex in addition to cash to obtain fish from fishermen. These women are now being encouraged to participate in economic cooperatives that conduct collective bargaining for fish, as a way to protect

themselves from sexual exploitation [51]. In Bangladesh, rural women participating in a revolving loan scheme have been found to be economically empowered and to exercise greater control over their sexual behaviour as shown by their elevated rate of contraception use (Table 2) [52]. Although requiring a community interest and collective bargaining effort, such measures may initially involve considerable input from external sources.

Table 1. Examples of economic approaches to HIV prevention in sex-work settings.

Interventions
Within sex-work settings
Enforce condom use in all client contacts
Integrate the cost of condoms into the price of sexual encounter (or in the rent paid by clients for rooms)
Raise prices for sexual encounter
In communities where sex work exists
Improve young women's level of literacy and education
Identify alternative income sources or provide vocational training
Develop money management and savings skills
Establish economic cooperatives
Facilitate access to accommodation

Table 2. The effect of women's empowerment on contraception use, Grameen Bank, Bangladesh, 1992 [52].

Economic and social influences on contraceptive use	% of married women aged < 50 years using contraceptives
Empowered*	65
Not empowered	45
Contributes substantially to family support	60
Contributes little or nothing	44
Living in Grameen Bank villages	54
Living in comparison villages	43

*Defined according to the following measures: mobility and visibility, economic security, status and decision-making power in the household, ability to interact in public spheres, and participation in non-family groups.

However, even in those societies where they clearly have a central economic role, women may continue to have limited negotiation power in sexual decision-making. Culturally propagated conceptions of gender roles defining men as the decision-makers often override other considerations and will continue to offer a barrier to significant HIV risk reduction for women [30,53]. Economic approaches such as those outlined above should be considered in conjunction with approaches that attempt to alter prevailing social norms. Whereas the examples here have primarily focused on women, HIV prevention for both sexes could benefit from such economic enabling approaches.

National policy, local practices and HIV prevention

As stated previously, standard health promotion practice has long recognized the importance for a supportive policy environment in which a prevention agenda can be pursued. National policies that recognize and condone the desirable outcome of disease prevention and health promotion are indeed an important first step. Throughout the history of public health, however, policy has also been directly employed to promote health. Policies mandating preventive actions such as childhood immunizations, seat belt use, motorcycle helmet laws, and fluoridation of water are examples of one type of approach. Proscriptive policies prohibiting specific health-threatening actions such as the sale of alcohol or tobacco to minors, the use of tobacco products in public settings or the sale of controlled substances for non-medical purposes, are examples of another use of structural interventions in the pursuit of public health. Similar applications for HIV prevention are much rarer but do exist. In this section, we examine the need for, and the use of, policy for HIV prevention, both as regulation at the national level and as consensus at the local level.

Restrictive legislation may act as a barrier to the adoption of preventive measures. Because of this, policy reforms have been advocated, particularly in countries where the urgency to prevent HIV has been recognized. The threat posed by the AIDS epidemic, for example, has led to calls for the decriminalization of prostitution [54] and less repressive laws concerning drug use [55,56]. In many countries, debate continues about legislation to allow distribution of condoms in schools or condoms and needles in prisons. Arguments have been made that such policy changes will facilitate HIV prevention efforts and provide greater access to health and other services.

The difficulties of changing established policy are immense and it is evident that such changes are unlikely to occur in many countries. Furthermore, it may be too simplistic to believe that tolerant legislation always creates the best environment for HIV prevention and intolerant ones the worst [57]. Effective HIV prevention for sex work have been achieved in some countries despite the illegality of prostitution [44]. Even among advocates for groups vulnerable to HIV, consensus does not exist on the appropriate policy reforms; for example, will decriminalization of prostitution ease or enhance exploitation of those involved [54]? Furthermore, some apparently tolerant societies find difficulty in taking actions that may impinge on individual rights and choices. This is especially true when the HIV prevention agenda has become intertwined with broader social agenda and issues of individuals' rights. For a long time, cities like San Francisco and Amsterdam debated closing gay bath houses, as does Toronto now. On one hand, it was argued that such an action would reduce possibilities

of unprotected multiple partner sex. Opponents argued, however, that bath houses offered a good opportunity for HIV prevention and that closing them would simply drive the behaviour underground, away from the reach of public health [58]. Similar actions have been more easily taken in other public-health domains, where the perceived benefit for the common good has been believed to supersede the potential limitations to the rights of individuals. Although none dealt with such a personal issue as sexual behaviour, the addition of fluoride to water, the requirement that passengers in cars wear seat belts and the proscription on smoking in public places are all public-health regulations that engendered controversy when they were first introduced but are now accepted.

Policies and their enforcement can vary between communities [18]. Unlike the experience of countries such as The Netherlands where policy on HIV prevention has been fairly liberal, decision makers in most countries remain cautious. Often, national policy has been tailored to the local needs [59]. Harm reduction, for example, has a goal of reducing the negative consequences of drug use, including HIV infection. The provision of clean injecting equipment to drug users, as well as information on how to continue to inject more safely, is one of these controversial approaches that are often pursued at the local level despite prohibitive national policy [60]. Unable to reach national consensus, the introduction of needle-exchange programmes was left to local decision makers.

Accepting the priority of HIV prevention over that of drug-use control is essential in adopting an integrated approach to HIV risk reduction. Evidence has shown that early action to make sterile injection equipment available is one of the key factors in maintaining stable low seroprevalence of HIV among injecting drug users [61]. Examples from several countries demonstrate the possibility of adopting such an integrated policy, where public health and law enforcement work together flexibly to meet both the needs of drug control and HIV prevention [62]. An experiment in tolerant policy on drug use in Zurich is a case in point. Designed at least in part with HIV prevention in mind, the policy created a zone of tolerance for drug use in the centre of the city, bringing the risk behaviour into the open where needle distribution and HIV prevention could be promoted. The policy may have in fact been successful in preventing HIV transmission but it had the unforeseen consequence of attracting large numbers of drug users from other cities and countries [63]. For that reason, the policy has now been discontinued and has been replaced in part by an expansion of an existing medically-supervised prescription heroin experiment [64].

In the area of prostitution, an example of the adoption of national regulation exists. Brothel owners in Thailand have been encouraged to implement the 'condom-only brothel' policy [65]. This policy regulates the behaviour of all clients visiting commercial sex establishments by mandating condom use. This has been one of the factors believed to be responsible for substantial increases in condom use in commercial sex and substantial decreases in STD seen in recent years (Fig. 2) [66].

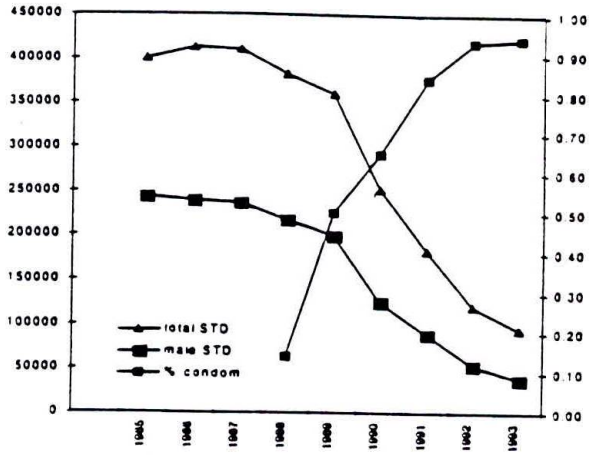

Fig. 2. Reported sexually transmitted disease (STD) cases (total and male) and estimated condom use in commercial sex, Thailand 1985–1993 [66].

Aside from national policy, attempts have also been made in specific communities to modify contexts which encourage risky sexual practices. In many African countries, initiation rites and funeral ceremonies may include multiple partner sex [67–69]. Most efforts to address this have targeted local officials and opinion leaders. Both in Zambia and Uganda, HIV prevention depended on religious leaders and village elders taking action to modify sexual practices associated with funeral ceremonies. Culturally acceptable alternatives to these risky practices were found and promoted [70]. Another approach is the development of alternative social venues for homosexual men, as was tried in American city, offering activities through which it was possible for men to meet without the sexual overtones of the gay bar [71]. Objections by a local politician to the use of government funds for this project led to its early discontinuation. In another example from Hong Kong, a 'safe sex' brothel was established to serve the needs of the local expatriate business community. This brothel, managed by social workers, reputedly provided its services without risk of STD or HIV before questions raised in the local press led to its closure [72]. In Viet Nam, many drug users get their heroin injected by 'community injectors' [41]. As numerous persons are injected with the same equipment, the potential for rapid transmission is clear. However, these same community injectors can also promote safer injecting practices.

Modifications of local practices, such as those listed above, can be promising avenues for HIV prevention. Together with national policy change, these structural interventions are a powerful addition to, not a replacement for, the more standard HIV/AIDS prevention approaches recommended. As we have seen in some of the examples, however, careful preparation and consensus building are necessary to assure the implementation and continuation of these approaches.

Conclusion

To date, AIDS prevention efforts around the world can be characterized as being too little, too late and too narrow. While countries are being exhorted and assisted to move quickly and with intensity on HIV prevention, the range of actions proposed is still narrow. As yet, AIDS prevention efforts have had limited experience with efforts that aim to modify the context of risk-taking or to go beyond debates on how to reinforce prevention efforts. It is, therefore, urgent to broaden the range of prevention options through innovative approaches addressing the context of risk.

How can this be interpreted into practical recommendations? On the broader level, international agencies are pursuing a policy of integrating HIV prevention into development programmes and allocating resources to restructure health services [73]. This is part of a long-term strategy which aims to reduce the potential for HIV transmission as well as to decrease the general health, social and economic burden of the epidemic. On the community level, there are some examples of initiatives undertaken by non-governmental or governmental organizations to support education, occupational training or other activities for those who are potentially vulnerable to HIV. Questions persist on the impact of these efforts on the AIDS epidemic, however. The discrepancy between the rapid pace of the AIDS epidemic and the much slower pace of the fundamental social change and development proposed casts doubt on whether these approaches can be effective quickly enough.

It is evident that no single approach for behaviour change, no matter how carefully or elaborately designed, will fit all individuals or population groups. However, a selection of intervention approaches tailored to specific determinants of risk can be developed [28]. The introduction of enabling approaches in HIV prevention is necessary. In all cases, this will involve lobbying for political support and policy changes. Long-term approaches will be essential to curb the further development of the epidemic [30], but, more immediately, possibilities do exist to promote a more pragmatic approach to addressing the determinants of HIV risk.

Yet challenges exist in pursuing a prevention strategy that includes enabling approaches. First is the challenge of understanding situations where risk occurs. It is essential to focus on the structures that may impede or facilitate risk avoidance, not just the individual determinants of risk behaviours. Second is the challenge of thinking more broadly and creatively about the intervention options that this understanding suggests might be needed. Third is the need to consult more widely than among the traditional providers of HIV prevention. Useful alliances with those outside public health, in particular in the domain of development, can provide new input into intervention strategies. Fourth is the need to consider how enabling approaches can work with, not replace, behavioural interventions that focus on the individual. The final challenge relates to evaluation, including the need to demonstrate the feasibility of enabling approaches through flexible evaluation designs. Some AIDS researchers argue that existing behavioural interventions have not been adequately evaluated [74,75]. Evaluation is likely to be even more difficult with enabling approaches, as standard evaluation designs might not be particularly useful. A comprehensive description of the situation and understanding of how the intervention works [76], paired with secondary indicators of behaviour change, are essential starting points in the evaluation of enabling approaches.

In practice, numerous intervention programmes have developed strategies involving improved access to condoms or the provision of adequate health services, particularly STD care, which are in themselves enabling of prevention and behaviour change. However, only a few have developed an enabling approach as the principle prevention strategy, despite the considerable evidence on the obstructive or facilitative role of social and environmental determinants. The development of such interventions is likely to require going beyond the realm of health education and intervention development as it has been customarily defined for HIV prevention. As we have shown, such attempts are common in other areas of public health and in keeping with the comprehensive definition of health promotion. The time to think creatively and more broadly about HIV prevention, to focus attention on the context of risk, and to draw on examples from other areas of public health is upon us.

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Viewpoint

Fighting AIDS or responding to the epidemic: can public health find its way?

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Josef Decosas

"AIDS is first of all a [. . .] issue". The sentence is found in scores of documents drafted by national and international organisations. The word in parentheses tells us much about the author and contributes little to the understanding of the syndrome or its spread. For the health educator searching for messages to alter attitudes and behaviour, infection with human immunodeficiency virus (HIV) is above all an individual and behavioural issue; for the social and economic planner it is a social issue; for the gay or feminist activist it is a human rights issue; for the public health specialist it is a health issue; and for the international bureaucrat it is a multisectoral issue. This last definition has the advantage of being almost unassailable because nobody really knows what it means outside the boardroom, where terms like this have their own reality.

A complex issue, by definition, has many different facets. There is no reason why HIV should differ from any other aspect of the human condition. Cardiovascular disease is a social issue; war and unemployment are health problems; and hydroelectric power generation raises questions about human rights. We seem to be perfectly content to live with this complexity, so why is there a compulsion to define exactly what kind of issue AIDS is?

The answer to this question lies in the peculiar nature by which HIV entered our collective conscience. When the world first heard about HIV, when "global mobilisation" began, AIDS was an abstract concept to all but a few groups who had already experienced death and sickness in their midst. Even now, over a decade into the epidemic, this is the prevailing situation in a large part of the world. The idea that HIV was a microbial invader that had to be fought with a single-minded and not too complex machinery was a choice few of us questioned because abstract problems lend themselves to simplistic solutions. Why introduce complexity where no complexity is experienced? Thus the "global fight against AIDS" was born, modelled on the tried although not always successful recipe of disease eradication, and borrowing the jargon of war to inject it with passion.

The same documents that declare AIDS to be one issue or another bemoan the problem of the war on HIV in their first paragraphs: "In the absence of an effective vaccine or cure . . .". In other words, a traditional war was being planned, but there were no traditional weapons. The search for the magic intervention began. Was it to be health education, abbreviated as IEC (for information, education, communication) to give it a high-technology flair? Low interest credit for women? Condom social marketing? Community development? Peer education among prostitutes? Sexually transmitted disease (STD) control? Female education? Whatever the intervention, it had to show results and it had to be cost-effective. The representatives of the financing agencies demanded as much.

A successful war demands an army of loyal soldiers, and the public health professionals and their institutions quickly fell into line. They become instant health education experts, condom marketers, community developers, and, of course, cost-effectiveness analysts. Some even became quite good at it. But where was the discipline of public health? It seems that it moved to Cuba, where, as Scheper-Hughes tells us, the war on AIDS is being won with the traditional public health methods.[1] But then, the Cuban success is not quite credible, and the response is neither feasible nor acceptable anywhere else.

Every war has its victims. The victim of the war on AIDS is the discipline of public health. While our institutions are desperately searching for the recipe to "stop AIDS" as quickly and cheaply as possible, our attention is being averted from what we know best. Is it really so important that all doctors demonstrate the use of a condom to their patients? Do we really need to spend so much time and effort to find the conclusive proof that treatment of sexually transmitted infections slows the spread of AIDS? Do we need a high-powered public health professional to coordinate the activities of prostitute collectives and boy scout troops? Surely we have enough on our hands.

The countries in which I work are facing a potentially devastating epidemic of tuberculosis. We have decades of experience on how to respond to such a threat. Why is this not the central preoccupation of the public health specialists working in AIDS? HIV has finally brought the long-hidden epidemic of sexually transmitted infections out of the closet. We know about the tremendous toll of suffering and disability associated with STDs, so why are we spending so much time trying to convince ourselves and others that STDs facilitate HIV transmission? Surely the fact that there is a serious neglected public health problem should be sufficient for us to move into action. We have known for decades that the health care services in Africa are woefully inadequate and we can now observe them being stretched to another limit because of AIDS. This is sufficient cause to rethink the methods of delivering medical care on this continent. Why are we even discussing the cost-effectiveness of screening blood for transfusion? Is it important that contaminated blood contributes little to the spread of HIV? Is that an acceptable reason to transmit a preventable infection?

The HIV pandenic has given new steam to the tuberculosis and STD treatment programmes and has led to new initiatives in providing care for the sick. It has generated improvements in the safety of transfused blood. But these are orphan activities. They have to be justified in terms of their effectiveness to stop AIDS and they are constantly threatened with cuts if they are not found to be

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cost-effective. All too frequently they are tossed into the salad of a project which includes anything from puppet theatre to demographic modelling.

Of course, we need public education campaigns. We need economic and demographic impact analyses. We need human rights conferences. We need puppet theatre, and we need condom marketing. These activities are all appropriate public responses to the HIV epidemic. They are as appropriate and as necessary as tuberculosis and STD treatment services. But how can one possibly measure the effects of these diverse activities on a single cost-effectiveness scale? This can only be done if "stopping AIDS" is the focus. One becomes a consumate watcher of minute trends, a neurotic seeker of minimal effects. Programmes are being evaluated to death and turned upside down regularly to concur with current fashions of what is more effective at preventing HIV infection. Technical agencies become political lobbies for the activities they have staked for themselves.

The concept of a war on AIDS with its goal to stop HIV is seriously flawed and should be discarded. Most regions in the world have a well-established epidemic of HIV. This epidemic requires a social response ranging from a review of legislation to a rethinking of the national industrial devlopment plans. It also urgently requires new programmes, new approaches, and some radical reforms in health care and in public health. These needs are unrelated to the goal of stopping the epidemic. They are the needs of adapting our public and private lives to the fact that we live in the times of HIV. The role of public health in responding to this fact should be to take HIV into consideration in the practice of public health. For me and for most readers of *The Lancet*, AIDS is and will always remain a health issue. But that is due to our choice of profession. Our biggest potential contribution to the global response to AIDS is to practise this profession well.

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BOOKSHELF

Genetic factors in drug therapy

David A Price Evans. Cambridge: Cambridge University Press. 1993. Pp 657. £120/$175. ISBN 0-52141296X.

Most physicians can recall patients who claim a poor relationship with drugs. "I'm peculiar when it comes to drugs, they all give me side-effects" is the response to the suggestion that we try an alternative agent. In most cases the reason has more to do with anxiety or suspicion about drug treatment than the pharmacology of the drugs concerned. For some patients, however, there may be a biochemical or immunological explanation, related to a difference in drug metabolism or tissue response. Pharmacogenetics is the study of genetic factors that contribute to inter-individual variability in drug response and our current understanding of the subject is summarised in Price Evans' book.

The book begins with chapters on genetic factors influencing drug "biotransformation". Several metabolic processes concerned with drug metabolism have now been shown to exhibit genetic polymorphism, dividing the population into extensive/rapid or poor/slow metabolisers of certain chemicals. The consequences of being a poor metaboliser depend upon the drug, particularly the steepness of the dose-response curve and the proximity of plasma concentrations required for therapeutic effect to those that produce toxicity. For some drugs the consequences are dramatic. Examples are prolonged apnoea in patients lacking cholinesterase and marked reduction in blood pressure and collapse in a poor metaboliser of the hypotensive agent debrisoquine. For other drugs exposure to high plasma concentrations is well tolerated. Conversely, if the effect of the drug depends upon conversion to an active metabolite, a poor metaboliser may be undertreated by a standard dose. Debate over the value of routine screening for poor metabolisers of relevant drugs receives full consideration here. The conclusion is that there are few if any indications. Such a practice does not substitute for tailoring the dose to the individual according to clinical response and in some cases by measuring plasma concentrations.

The chapters on variation in response to drugs include discussions of glucose-6-phosphate dehydrogenase deficiency, hepatic porphyrias, malignant hyperthermia, and chlorpropamide-alcohol flushing. The author comments that progress in our understanding of the genetic basis of drug metabolism has been more rapid than in the genetic basis of variation in drug response. He predicts that this may be redressed as more receptors are cloned and the functional implications of structural polymorphisms defined. An example of this is the recent linking of malignant hyperthermia with mutations in the ryanodine receptor gene.

An interesting aspect of the study of genetic factors influencing drug metabolism and response is the potential insight this may provide into the aetiology of disease. For example, the metabolic pathways that deal with the clearance of drugs are also involved in the metabolism of environmental toxins. Not surprisingly, the disease process most commonly studied to date is cancer. Associations between cancer (bronchial, bladder, gastrointestinal, breast, lymphoma) and "seven pharmacogenetic polymorphic enzyme systems" have been sought but the results are conflicting. The author argues that in some cases the disease process may have influenced the phenotyping test employed and suggests that genotyping of individuals included in such studies may help resolve the situation. The promise of this approach remains to be realised.

Genetic factors in drug therapy contains historical detail as well as recent developments and provides addresses of centres of expertise, presumably for further information or consultation in managing particular patients. There are some annoying errors, such as the partial transposition of table 16.3 with 25.2, but these should not dissuade those new to the subject as well as more experienced pharmacogeneticists from dipping in.

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An Ecological Perspective on Health Promotion Programs

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During the past 20 years there has been a dramatic increase in societal interest in preventing disability and death in the United States by changing individual behaviors linked to the risk of contracting chronic diseases. This renewed interest in health promotion and disease prevention has not been without its critics. Some critics have accused proponents of life-style interventions of promoting a victim-blaming ideology by neglecting the importance of social influences on health and disease.

This article proposes an ecological model for health promotion which focuses attention on both individual *and* social environmental factors as targets for health promotion interventions. It addresses the importance of interventions directed at changing interpersonal, organizational, community, and public policy, factors which support and maintain unhealthy behaviors. The model assumes that appropriate changes in the social environment will produce changes in individuals, and that the support of individuals in the population is essential for implementing environmental changes.

INTRODUCTION

During the past 20 years, there has been a dramatic increase in public, private, and professional interest in preventing disability and death in the United States through changes in individual behaviors, such as smoking cessation, weight reduction, increased exercise, dietary change, injury prevention, protected sexual activity, and participation in screening and control programs. While much of this interest in health promotion and disease prevention has been stimulated by the epidemiologic transition from infec-

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Health Education Quarterly Vol. 15(4): 351–377 (Winter 1988)
© 1988 by SOPHE. Published by John Wiley & Sons, Inc. CCC 0195-8402/88/040351-27$04.00

tious to chronic diseases as leading causes of death, the aging of the population, rapidly escalating health care costs, and epidemiologic findings linking individual behaviors to increased risk of morbidity and mortality,[1] more recent development, such as the AIDS epidemic, have also contributed.

Within the private sector, this interest in health promotion has led to the extensive development and implementation of health promotion programs in the worksite,[2] increases in the marketing of "healthy" foods,[3] and increased societal interest in fitness.[4] In the public sector this interest has led to national campaigns to control hypertension[5] and cholesterol,[6] the establishment of the Office of Disease Prevention and Health Promotion within the Public Health Service and the Center for Health Promotion and Education within the Centers for Disease Control, the development and implementation of community-wide health promotion programs by both governmental agencies and private foundations,[7] and the establishment and monitoring of the 1990 Objectives for the Nation in health promotion.[8] Within the professions, interest in health promotion led to the publication of the Lalonde Report in Canada,[9] John Knowles' work on "The Responsibility of the Individual"[10] and the Surgeon General's Report[11] on Health Promotion/Disease Prevention in the United States, and "Health Promotion: A Discussion Document on the Concept and Principles" in Europe.[12] More recently, journals have appeared which are devoted exclusively to articles on health promotion programs and activities (Note 1); existing journals both within and outside of traditional public health disciplines have devoted theme issues to health promotion topics (Notes 2 and 3); international conferences on health promotion have been held (Note 4); and health education training programs have begun to focus more extensively on health promotion topics and issues.

However, The increased interest in health promotion has not been without its critics. Proponents of individually-oriented behavior change strategies have been accused of supporting a victim-blaming ideology which

> serves as a legitimization for the retrenchment from rights and entitlements; in relation to the social causation of disease it functions as a colossal masquerade. The complexities of social causation are only beginning to be explored. The ideology of individual responsibility, however, inhibits that understanding and substitutes instead an unrealistic behavioral model. It both ignores what is known about human behavior and minimizes the importance of evidence about the environmental assault on health. It instructs people to be individually responsible at a time when they are becoming less capable as individuals of controlling their total health environment. Although environmental factors are often recognized as "also relevant," the implication is that little can be done about an ineluctable, technological, and industrial society . . . . What must be questioned is both the effectiveness and the political uses of a focus on life-styles and on changing individual behavior without changing social structure and processes (page 256).[13]

In discussing the life-style theory of disease, Tesh notes that "the life-style hypothesis approaches disease as though ill health is the result of personal failure. It dismisses with a wave of a hand most environmental toxins and it ignores the crucial connection between individual behavior and social norms and rewards. It is, in fact, a victim-blaming approach to disease" (page 379).[14] While both of these authors recognize that a life-style approach to disease prevention may yield marginal improvements in health, they suggest that prevention strategies that focus on individual behavior changes

should remain secondary to environmental approaches, including changes in the physical *and* social environment (Note 5).

In responding to some of the health promotion critics, Green[15,16] notes that few health promotion programs take an exclusively health behavior focus, and that programs which focus on system change must ultimately be concerned with both the behavior and health of individuals. Moreover, system-change approaches ultimately rely on the consent of the governed in a democratic and pluralistic society, and must deal with the issue of conflicting values. This suggests that the major challenge of system-change approaches is implementing the changes.[17]

Green's position is partially supported by data from the National Survey of Worksite Health Promotion Activities in which it was reported that of the 27% of worksites offering stress management activities, "82.2% said they provided information to employees, while the same percent mentioned introducing organizational changes to intervene with stress-producing activities (page 20)."[18] Also, as Diana Chapman Walsh has noted, employee and union support are critical to introducing systems approaches to smoking control in the worksite.[19]

However, Green's response fails to recognize that the language we use, and the models we adopt for health promotion programming, may still inadvertently serve to direct our attention toward certain types of interventions and away from others.[20] Specifically, the use of terms such as "life-style," and "health behavior" may focus attention on changing individuals, rather than changing the social and physical environment which serves to maintain and reinforce unhealthy behaviors. Green articulated this focus in an earlier article.[21]

> . . . The dominant contributions to the literature on interventions in health have been, perhaps regrettably, from psychology. . . . Even in large-scale community interventions such as the Stanford three-community studies, the behavioral science contributions to planning the interventions have been made largely by psychologists. The result is that the behavioral change interventions have tended to emphasize the individual, and have been most useful in patient education. This concentration of behavioral science applications is sometimes at the expense of action on needed change in organizational, institutional, environmental, and economic conditions shaping behavior (page 217).

Thus, there is still the risk of a paradigm emerging for health promotion activities which neglects the social causation of disease by its emphasis on individuals and individual choices.[22]

The role of life-style and individual choices in determining health status may also be misunderstood or misapplied by the general public. In a recent talk, the Surgeon General, C. Everett Koop, noted the public retribution against cigarette smokers, drunk drivers, teenagers who become pregnant, drug addicts, and wife beaters, and the possibility that such retribution would spread to AIDS victims.[23] The Circle K Corporation, as announced in a recent letter to employees, has dropped health insurance coverage for conditions it defines as "personal lifestyle decisions," including AIDS, alcoholism, and drug use.[24] Thus, even if professionals working in the health promotion arena are successful in incorporating environmental influences into their interventions, the language used to describe health promotion activities may, inadvertently, be misused to support a victim-blaming ideology.

The extent to which health promotion focuses on individuals and individual choices and ignores the social and organizational context of health-related behaviors may also

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affect the extent to which we are able to reach specific groups in society. For example, Minkler[25] has discussed the problems of developing health promotion programs to reach the elderly in long-term care settings, and in reaching the poor, inner city elderly.[26] Similar problems are inherent in reaching groups in society who are at greatest risk for behaviorally related health care problems, such as the poor, intravenous drug users, delinquent adolescents, and the socially isolated.

ECOLOGICAL MODELS

One conceptual framework which serves to direct attention to both behavior and its individual *and* environmental determinants is an ecological perspective, such as that proposed by Urie Brofenbrenner.[27,28] In Brofenbrenner's model, behavior is viewed as being affected by, and effecting, multiple levels of influence. Specifically, Brofenbrenner divides environmental influences on behavior into the micro-, meso-, exo-, and macrosystem levels of influence. The microsystem refers to face-to-face influences in specific settings, such as interactions within one's immediate family, informal social networks, or work groups. The mesosystem refers to the interrelations among the various settings in which the individual is involved. These may include family, school, peer groups, and church. The mesosystem is the system of microsystems. The exosystem refers to forces within the larger social system in which the individual is embedded. Examples might include unemployment rates which effect economic stability. The macrosystem refers to cultural beliefs and values that influence both the microsystem and the macrosystem. Examples would include cultural beliefs about smoking, such as that promoted by the Marlboro man, or the importance of selected foods in establishing cultural identity, such as black-eyed peas and collard greens on New Year's day. Not only do each of these subsystems affect behavior, but the subsystems themselves may change as their members are replaced or altered. Thus, an ecological perspective implies reciprocal causation between the individual and the environment, sometimes referred to as a transactional model (Note 6).[29,30]

By combining a theory of individual development with Brofenbrenner's ecological model, Belsky[31] has developed a framework to account for individual, family, social, and cultural influences in child abuse. Brofenbrenner's ecological model has also been used as a framework for viewing Type A behavior,[32] and identifying potential system-level interventions. While not explicitly linked to Brofenbrenner's model, Winett[33] has used an ecological model for assessing health life-styles. Also, Jackson[34] has developed a behavioral-environmental model of health problems that has been applied to health promotion issues. Seidman has applied an ecological model using levels of analysis to the problems confronting community psychology,[35] and Kersell and Milsum[36] have used an ecological approach to integrate individual and environmental factors in studying behavior.

A public health model which can be viewed as an ecological or systems model is the host-agent-environment model.[37,38] Whereas most appropriately used with infectious diseases—because of the usual presence of a single agent—the host-agent-environment model indicates that population changes in infectious disease rates may be caused by changes in the host, the agent, or the environment. For example, populations may develop resistance to specific infectious diseases, thus lowering the infection rate. The

agent may become more or less virulent; or the environment may affect the distribution or importance of specific vectors.

The importance of ecological models in the social sciences is that they view behavior as being affected by, and affecting the social environment. Many of the models—like Brofenbrenner's—also divide the social environment into analytic levels that can be used to focus attention on different levels and types of social influences and to develop appropriate interventions. Thus, ecological models are systems models, but they differ from traditional systems models by viewing patterned behavior—of individuals or aggregates—as the outcomes of interest (Note 7).

One of the problems with many ecological models of social behavior is that they lack sufficient specificity to guide conceptualization of a specific problem or to identify appropriate interventions. For example, the host-agent-environment model, by collapsing the physical and social environment into a single source of influences, is difficult to apply in identifying appropriate interventions of many current health problems, particularly those related to health promotion. Moreover, the host-agent-environment model was originally used with a focus on morbidity or mortality as outcomes, and behavior as a contributing host characteristic, rather than viewing behavior as an outcome of interest.

AN ECOLOGICAL MODEL FOR HEALTH PROMOTION

A variation on Broffenbrenner's model—which is used as the conceptual framework for this theme issue of *Health Education Quarterly*—also borrows from the work of Belsky,[31] and Steuart.[39] In this model, patterned behavior is the outcome of interest, and behavior is viewed as being determined by the following.

(1) intrapersonal factors—characteristics of the individual such as knowledge, attitudes, behavior, self-concept, skills, etc. This includes the developmental history of the individual.
(2) interpersonal processes and primary groups—formal and informal social network and social support systems, including the family, work group, and friendship networks.
(3) institutional factors—social institutions with organizational characteristics, and formal (and informal) rules and regulations for operation.
(4) community factors—relationships among organizations, institutions, and informal networks within defined boundaries.
(5) public policy—local, state, and national laws and policies.

An implicit assumption of these levels of analysis is that health promotion interventions are based on our beliefs, understandings, and theories of the determinants of behavior, and that these five levels of analysis reflect the range of strategies currently available for health promotion programming. Other levels of analysis could be employed as understanding of the causes and potential interventions to modify health related behavior change.

The following discussion will review some of the processes operating at each of these levels of analysis, how they affect health related behaviors, and potential health promotion interventions that may be employed at each level of analysis.

Intrapersonal Factors

As we have noted, many of the behavior change models used in health promotion have been borrowed or adapted from psychology.[21] Psychological models which have been used to explain health related behavior or in program development include: value-expectancy theories and attitude change models, such as the health belief model[40] and the Fishbein theory of reasoned action;[41] social learning theory;[42,43] concepts of control, including locus of control, [44] and the psychology of control;[45] models of stress and coping;[46] attribution theories;[47] personality theories, such as type-A behavior[48] and the Hardy Personality;[49] models of decision making;[50] developmental models;[21] and models which incorporate incentives, borrowed from social learning theory or operant conditioning.[51,52]

When psychological theories are applied to specific health problems or health related behaviors, the resulting models may incorporate physiological processes and/or interpersonal influences. Models of smoking acquisition and maintenance, for example, may include concepts of nicotine metabolism and excretion,[53] and the role of family and peers as role models or social influences in the acquisition of smoking behavior by teens.[54]

Our interventions may also incorporate techniques to modify the nature and extent of social influences. For example, many adolescent smoking prevention programs incorporate peer pressure resistance training (or social inoculation) and information about parental influences;[55] and smoking cessation programs and weight loss programs may incorporate social support mechanisms. However, even when programs incorporate social influences as part of the intervention—such as in peer counseling programs—the purpose is to change individuals, rather than to modify the social environment.[56] Adolescents are trained to resist interpersonal influences related to smoking, rather than attempting to modify the norms and values that adolescents' cliques, networks or families have about smoking. These interventions may reflect the implicit assumption that the proximal causes of behavior and/or mechanisms for producing behavioral changes lie within the individual, rather than in the social environment.

Interventions at the intrapersonal level, then, use a variety of intervention strategies or levels of intervention—such as educational programs, mass media, support groups, organizational incentives, or peer counseling—but the theory of change is one of changing individuals, and the targets of the intervention include characteristics of the individual, such as knowledge, attitudes, skills, or intentions to comply with behavioral norms. This distinction between levels of intervention and the targets of interventions is an important one in understanding ecological strategies, and is similar to Steuart's distinction between units of practice (the theory of the problem) and units of solution (levels of intervention).[57]

Interpersonal Processes

Interpersonal relationships with—family members, friends, neighbors, contacts at work, and acquaintances—are important sources of influence in the health related behaviors of individuals. For example, significant others are important influences in the decision to visit a physician for non-emergency care, and the timing of doctor visits.[58] Social relationships affect: How individuals cope with stress;[59] the acquisition and

maintenance of alcohol and drug use behaviors;[60] decisions about where to live;[61] the number of preventive health behaviors that individuals engage in;[62] the risk of mental illness;[63] adolescents' risk of pregnancy,[64] and the ability of adolescents to cope with pregnancy;[65] political attitudes;[66] and the risk of morbidity and mortality.[67]

Social relationships are essential aspects of social identity. They provide important social resources, including emotional support, information, access to new social contacts and social roles, and tangible aid and assistance in fulfilling social and personal obligations and responsibilities.[68] These social resources, frequently referred to as social support, are important mediators of life stress,[69] and important components of overall well being.[70]

Although the influence of interpersonal relationships on the health related behaviors of individuals is widely recognized, health promotion interventions that use interpersonal strategies have typically focused on changing individuals through social influences, rather than on changing the norms or social groups to which individuals belong. Examples in the areas of adolescent drug use and adolescent pregnancy prevention programs are discussed below.

Drug Use Prevention Programs

Drug use prevention programs that incorporate social influence interventions have viewed social influences on drug use as either "peer pressure," or within a social influence model in which drug use is viewed as being affected by individuals acquiring positive attitudes, values, or norms regarding drug use from their social groups. Interventions based on a peer pressure model provide adolescents with knowledge and skills to resist negative peer influences; whereas interventions based on a social influence model include information on the social antecedents and consequences of drug use, and attempt to modify individuals' perceptions of group norms about the use of drugs through the use of peer counselors.[71]

The problem with these approaches to incorporating social influence interventions into health promotion programs is that they ignore important aspects of the structure and function of social relationships. Peer influence and coercion are approached as if they were the result of a collection of dyadic interactions. What is missing is a recognition of the importance of the source of influence and the social groups to which individuals belong.[72] For example, one can think of individuals as belonging to one or more social networks, with networks defined as individuals who share linkages. Networks vary in both structure and function. Structurally, some networks are relatively homogeneous, whereas others are more heterogeneous. In some networks all members are connected to one another, while other networks may be more diffuse (less dense). In some networks, individuals share multiple linkages (multiplexity), while in other networks relationships are less tight. Functionally, networks may provide individuals with a variety of social resources, including information, access to social contacts, social identity, emotional support, and instrumental support.[73] Both the structure and function of adolescent social networks may affect the risk of drug use.

Structurally, we may hypothesize that adolescents who have primary membership in a dense, homogeneous network will be more influenced by the norms and values of that group than individuals who belong to multiple, less dense, less homogeneous groups.[74] Since adolescent social networks may be more or less accessible depending

upon both the characteristics of the network and the characteristics of the individual. individuals may be attracted to what are perceived as more deviant networks because they are perceived as being more accessible, or because the deviant networks occupy positions of relatively high status, or are more influential within a given setting.[75,76]

Funtionally, the nature of the networks to which an individual belongs will affect access to and the acceptability of information—such as that pertaining to drug use. As Wellman[77] notes,

> People do not form their attitudes in direct response to their attributes, which in themselves have no causal force. Rather, people acquire norms, as they do other pieces of information through their ties in social networks. Information flows between network clusters through shared members. Where these clusters have few links to other parts of the network, distinctive subcultures form. Thus, not only is normatively guided behavior constrained by the structure of networks, but the inculcation of these norms is differentially reproduced through these networks (page 165).

Networks influence not only the behavior of individuals within the network, but also the behavior of individuals who are outside of the network linkages. In his study of adolescent network relationships within schools, Cairns[74] has reported that adolescent cliques may exist among aggressive students—instead of aggressive individuals being socially isolated as previously reported in the literature—and that aggressive cliques may be the dominant social grouping in some schools. Thus, cliques composed of aggressive students may be feared and respected by other students and may influence the behavior of students who are not members of the aggressive clique by effecting their relationships with other students in the school.

Therefore, using a network framework, we can conceptualize schools as representing overlapping friendship networks with varying degrees of influence on individuals' behaviors, depending upon the norms of the group(s), the importance of the networks for the individual, and the extent to which the individual is exposed to conflicting information through belonging to multiple networks.

This reframing of the problem of adolescent drug use from one of nebulous peer influences to one of how existing network structures may influence individuals' behaviors, allows one to begin thinking about non-individual interventions for drug abuse prevention. That is, our drug use prevention programs might focus on:

(1) Changing the norms about drug use within existing networks;
(2) Increasing accessibility to less deviant adolescent peer groups;
(3) Creating alternative networks; and
(4) Decreasing the desirability of membership in deviant networks.

Adolescent Pregnancy Prevention

Similar strategies apply to adolescent pregnancy prevention,[78] programs to increase seat belt use,[79] and programs to promote other positive behaviors.[80] In adolescent pregnancy prevention, for example, there is evidence that friendship patterns both effect and are effected by levels of sexual experience, at least among white adolescent males and females. White adolescent females who have sexually active best friends are more likely to become sexually active than if their best friends are not sexually exper-

ienced. White males, however, may select best friends on the basis of sexual experience, rather than being directly effected by best friends' level of sexual activity.[81,82] Thus, there is evidence for differential friendship patterns based on sexual experience.

Families and sexual partners may also influence adolescents' risk of pregnancy. For example, the age at which adolescent females initiate sexual activity is associated with the age at which their mothers initiated intercourse, and adolescent females with mothers or siblings who became pregnant during their teens are also more likely to become pregnant as teenagers. Adolescents in more committed relationships with their partners, and who have better communication patterns with their partners are more likely to use effective contraceptives.[83]

This evidence of peer and family influences on risk factors for adolescent pregnancy suggests that prevention programs need to include interventions directed at these sources of influences. Specific types of interventions could include family support programs network development, support groups, skills training,[84] and the development of norms for contraceptive use in male adolescent networks.

Interpersonal Interventions

The importance of interpersonal influences in drug use and adolescent pregnancy suggests that, from an ecological perspective, interpersonal approaches should be designed to change the nature of existing social relationships. Specifically, they should be designed to modify the interpersonal social influences which serve to encourage, support and maintain undesirable behaviors. While the ultimate target of these strategies may be changes in individuals, the proximal targets are social norms and social influences.

Organizational Factors

Implicit in the preceding discussion is the assumption that an ecological perspective tends to refocus attention away from strictly intra-individual factors and processes which affect behavior and more towards environmental determinants of behavior, such as the effects of interpersonal relationships. A third level of environmental considerations within the ecological framework concerns organizations. Specific areas of concern include: how organizational characteristics can be used to support behavioral changes; the importance of organizational change as a target for health promotion activities; and the importance of organizational context in the diffusion of health promotion programs.

Organizational Supports for Behavior Change

With many people spending one-third to one-half of their lives in organizational settings—beginning with formal day care settings and extending through primary and secondary schools, universities, and work settings—it is obvious that organizational structures and processes can have substantial influence on the health and health related behaviors of individuals. In the worksite, for example, the technology of production

may expose individuals to hazardous chemicals and risks from injuries and accidents. The pace of work, excessive work loads and responsibilities, job complexity, shift work, and monotony have all been related to stress at work and to subsequent health effects. Management styles, lack of participation by workers, poor relationships with supervisors, and communication problems are also social worksite hazards.[85]

Organizations may have positive as well as negative effects on the health of their members. Organizations provide important economic and social resources. Organizations are important sources and transmitters of social norms and values, particularly through individual work groups and socialization into organizational cultures.[86] Voluntary organizations, such as neighborhood and professional associations, may serve as important mediators or mediating structures between individuals and the larger political and economic environment.[87] Organizational memberships are also an important component of social identity, and free time may be organized around participation in voluntary associations, such as churches, professional groups, and local neighborhood organizations.

As a context for health promotion activities and programs, organizations—particularly worksites—provide the opportunity to gain access to large groups of people where they spend much of their time.[88] Organizations provide the opportunity to build social support for behavioral changes, particularly if the new behavior is a group norm.[89] Organizational characteristics, such as the use of incentives, management and supervisor support, changes in rules and regulations (e.g., smoking restrictions), changes in benefits (e.g., insurance coverage and child care), and changes in the structure of work (e.g., time off to participate in health related activities) may all be used to support behavioral changes.[90,91]

Many of these characteristics of organizations have been used to support health promotion activities within worksites. Group competitions—which may promote group solidarity and cohesion—have been used in weight loss programs.[92] Incentives have been used to promote smoking cessation and seatbelt use.[93,94] Stress reduction interventions have included improving worker supervisor relationships through supervisor training.[95] Corporations have begun to ban smoking at work and/or establish nonsmoking areas,[96] and some corporations have included environmental modifications—such as changing and/or labeling food offerings in cafeterias—to support diet and weight loss changes.[3] Companies may also allow workers time off from work to participate in worksite programs, or may restructure working hours to encourage participation.[97,98]

Organizational Change As the Target for Health Promotion

While many worksite programs have used organizational changes to encourage or support behavioral changes among employees, the target of these interventions is usually employees, and not the organization itself. An important component of organizational strategies that may be under-emphasized in worksite programs is creating healthier environments in addition to creating healthier employees.[99] A focus on healthier environments may require that health promotion programs adopt an organizational development role, and establish linkages to other health-related efforts within the organization, including environmental protection, safety, and union and personnel activities. For example, a major health promotion effort in the worksite could involve

the development of adequate day care services or alternative work schedules for workers with young children, in addition to offering classes in stress and time management. The Green[100] article in this issue of *Health Education Quarterly* discusses the differing responsibilities of management, workers, and unions in achieving a comprehensive ecological approach to workers' health.

This discussion assumes that one of the purposes of health promotion programs in the worksite is to change "corporate culture"; that is, to include concerns about health outcomes in both tactical and strategic organizational decision making, and to include health related norms and values as part of the corporate ideology. There are existing examples of this both within and outside of the worksite. Johnson and Johnson[101] has established as a corporate goal having the healthiest workers in the world through changing workers and changing the worksite environment. In this issue of *Health Education Quarterly*, Robins and Klitzman[102] discuss the impact on worksites of a program to address the new Federal regulations governing hazard communications. They suggest that health education programs in the worksite can influence the importance of health as a worksite issue. Parcel, Simons-Morton, and Kolbe[103] discuss four phases of change in facilitating adoption of broad-based health programs in schools, including institutional commitment, changes in policies and procedures, changes in the roles and actions of staff, and new learning activities.

Organizational Influences on Program Diffusion

Nowhere is reciprocal causation between programs and organizations more evident than in the adoption, implementation, and institutionalization of programs in community settings.[104] Few community health promotion programs are "free standing." Rather, community health promotion programs are almost always initiated or conducted within some type of community organization or agency. Such organizations have been termed "host organizations."[105] Because funding has been available from federal and state sources, and private foundations, many organizations including schools, local and state health departments, hospitals, and voluntary community health agencies have initiated and implemented health promotion programs.

A current area of concern among health promotion practitioners and researchers is the extent to which health promotion programs located within host organizations survive over a long period of time in order to become firmly rooted in their host organizations. Because the missions and goals of these host organizations are often incompatible with health promotion program objectives and activities, many programs do not survive their initial period of grant funding. Such programmatic deaths can be both wasteful and harmful. They are wasteful in that it often requires considerable financial and human resources to implement successful programs. Premature termination, therefore, can be disruptive both to the organization that has made accommodations to implement the program, and to staff careers, since workers often make significant investments in such programs. Program termination can also be harmful in that it may be much harder for organizations to reestablish community trust after successful programs are prematurely ended.[106]

When health promotion programs do survive past the initial funding period and become integrated into the host organization, they are said to have become institution-

alized.[105] An important goal of health promotion program practitioners, then, is to facilitate the institutionalization of successful programs.

Program institutionalization is often thought of as the final step in an organizational process. An organization first becomes aware that some type of problem exists, it searches for and evaluates potential solutions to the problem, it selects a particular course of action, it implements the course of action (usually on a trial basis), it modifies what it has implemented, and over time, the innovation becomes integrated into the organization (i.e., institutionalization occurs).[107] In this process model of program innovation, the innovation both modifies and is modified by the host organization.

Important organizational processes operate at each stage to affect the degree of implementation, and the depth and breadth of institutionalization. For example, at the implementation stage, support from upper level management for the innovation, training of staff, and material support, are related to the degree of implementation. During the institutionalization phase, perceptions of the costs and benefits of the innovation, the development of coalition support around the innovation, the consistency between the innovation and the organization's mission and goals, and the extent to which there is an appropriate niche for the innovation within the organization, are all related to successful institutionalization.[105]

This suggests that an important organizational focus for health promotion programs and staffs must be on securing upper level organizational support for program implementation. Staff must also develop support for health promotion activities within the host organization, assuring that program goals and the host organization's mission and goals correspond, and develop and occupy a niche for program activities within the host organization for program institutionalization. In this issue of *Health Education Quarterly*, Monahan and Scheirer[108] discuss how the diffusion of preventive health programs in schools may be stimulated by external program advocates. Program advocates, such as state offices, may serve as linking agents between end users and the developers of an innovation to facilitate adoption and implementation.

Organizational Change and Health Promotion

This discussion of organizational processes in health promotion suggests that organizational changes are inherent in an ecological approach. Organizational changes are necessary to support long term behavioral changes among individuals, organizational change is an essential component of creating an organizational culture supportive of health issues, and organizational changes are necessary prerequisites for the adoption, implementation, and institutionalization of health promotion programs.

Community Factors

The concept of "community" has been identified as one of the key ideas in sociology,[109] and has historically occupied a central role in public health.[110] However, the term "community" has been defined in so many ways and used in so many contexts, that it has lost much of its meaning. Community may be used to refer to the psychological sense of community,[111] a political entity,[112] a functional spatial unit meeting

sustenance needs,[113] a unit of patterned social interaction,[114] or simply an aggregate of individuals in a geographic location.[113]

For the purposes of this paper community is viewed as having three distinct meanings. First, community refers to mediating structures, or face-to-face primary groups to which individuals belong. This view of community embraces families, personal friendship networks, and neighborhoods. This is analogous to Brofenbrenner's definition of a mesosystem.[27] Second, community can be thought of as the relationships among organizations and groups within a defined area, such as local voluntary agencies, local governmental health providers, local schools, etc. Third, community is defined in geographical and political terms, such that a community refers to a population which is coterminous with a political entity, and is characterized by one or more power structures.[115,116] The importance of these varying definitions of community is that they have differing implications for the development and implementation of health promotion interventions.

Community As Mediating Structures

An important component of community includes what have been called "mediating structures."[87] These include family, informal social networks, churches, voluntary associations, and neighborhoods, that may be important sources of social resources and social identity.

These mediating structures are repositories and important influences on the larger communities' norms and values, individuals' beliefs and attitudes, and a variety of health related behaviors. Because mediating structures represent strong ties, changes in individuals without the support of these mediating structures is difficult to achieve. Mediating structures also serve as connections between individuals and the larger social environment.[87]

Health promotion programs may use these mediating structures to deliver services within communities, or may attempt to develop or strengthen existing neighborhood organizations. For example, Eng, Hatch, and Callan[39] have discussed the important social functions that churches provide in rural, black communities, and the use of these organizations as the focal point for health related interventions. Lasater, Wells, Carleton, and Elder[117] have also discussed the use of churches as intervention sites in a spin off of the Pawtucket Heart Health Program. A community organization approach is represented by Minkler's work[26] in the Tenderioin District.

Community As Relationships Among Organizations

The second definition of community concerns the relationships among organizations within a political or geographic region. In many communities, the total resources available for health and human services is severely limited. This is particularly true in rural areas and small towns, and in some areas of the country where cities and states are facing fiscal crises. Thus, in many communities organizations and agencies may compete with each other for scarce resources, including donations, volunteer time, media attention, and city and county tax dollars. Since many community organizations may provide similar or related services, resource competition may carry over to

competition and lack of collaboration in programming, resulting in inefficient use of resources. Since health promotion services, as with basic health services, are generally provided through existing community organizations, relationships between the host organization and other community agencies may be a critical issue in the development and delivery of services. A community focus, then, for health promotion activities may include increasing coordination among community agencies, and coalition building to influence community awareness, local health policies, and resource expenditures.

Discussions of interventions to promote interagency coordination are provided by Hasenfeld and Tropman[118] and Roemer.[119] Specific to health promotion/disease prevention, Winder[120] discusses the development of a pesticide forum to coordinate community concerns and health agency involvement with environmental pollutants. Minkler[26] addresses involving community organizations in work with the poor, inner city elderly, Defrank and Levenson[121] discuss the formation of a health promotion consortium, and Freudenberg and Golub[122] discuss the formation of a New York City Coalition to End Lead Poisoning.

Community As Power

The third definition of community within the context of health promotion concerns community as power structures. Power structures in cities, counties, and states, often play a critical role in defining community health problems and allocating resources—including funding, technical assistance, staffing, materials, and official and unofficial approvals—for their amelioration.

One of the most important roles played by community power structures is in controlling what issues are allowed to be placed on the public agenda.[115] Since health promotion issues may have political and economic ramifications, there will be potential consequences for powerful segments of the community. For example, smoking is not just a health issue. It is also an important economic issue. In the South the economics of smoking effects farmers, warehouse workers, and cigarette manufacturers. Elsewhere in the United States, smoking is an economic issue to those who transport tobacco products, advertising agencies, sales organizations, retailers, and governments that benefit from taxes on tobacco products. Similarly, diet, nutrition, and obesity problems are of economic interest to farmers, food processors, retailers, and restaurants.

Those who plan and conduct health promotion programs often overlook the political and economic consequences of their proposed interventions. Such oversights can lead to programmatic failure because important community power structures actively or passively block effective program implementation due to real or potential threats to their political and economic interests.

Also, those with the most severe health problems within a community are often those with the least access to sources of community power. They are the poor, the minorities, the rural, the uneducated, the unemployed or the underemployed, the homeless, the handicapped, and those with socially derided health conditions such as AIDS, mental illness, and alcoholism. Such groups are often left out of the process of defining problems and developing programmatic solutions. Such groups are often labeled perjoratively as "the hard to reach." They are hard to reach because their individual problems are so severe that they have little time, energy, or resources for partici-

pating in larger community structures and activities. Such groups are rarely politically organized and are cut off from community political processes and community power structures. Because of their social and political isolation they become the objects of services and programs which, while well intentioned, often fall short of solving basic problems.

An essential component of community health promotion, then, is increasing access by the disadvantaged to larger community political and power structures. Strategies to achieve this goal may include: (1) establishing contacts among divergent community networks,[123] (2) including representation from the disadvantaged population on community boards;[124] and (3) community organizing strategies.[122,125]

Community Interventions

The preceeding discussion indicates that defining communities as aggregates of individuals sharing common demographic or geographic characteristics neglects an important aspect of community, that is communities as relationships. Neglecting relationships may reduce the acceptability of our interventions within specific subgroups by neglecting the variations that exist within geographical areas in values, norms, attitudes and behaviors. These variations are not random, however, but are linked to specific networks and subcultures. The extent to which our interventions conflict with or support subcultural norms and values is the extent to which we can expect specific subgroups in the community to resist or support our approaches. Furthermore, neglecting the relational features of communities may also lead us to disregard important characteristics of communities that may be used to support health related interventions.

Public Policy

One of the defining characteristics of public health—apart from its emphasis on the health of populations rather than the health of individuals—is the use of regulatory policies, procedures, and laws to protect the health of the community.[126] This use of regulatory policies has had a dramatic effect on the health of the population. McKinlay and McKinlay, for example, have estimated that the most of the decline in mortality that occurred in the United States between 1900 and 1973 occurred as a result of improvements in water supply, sanitation, housing, and food quality,[127] including laws governing the pasturization of milk.[128]

The success of these policies in reducing death and disability from infectious diseases has led to the development of public policy approaches to address health risks from chronic diseases. These include: policies that restrict behaviors, such as prohibitions on smoking in public buildings and restrictions on alcohol sales and consumption;[129] policies which contain behavioral incentives, both positive and negative, such as increased taxes on cigarettes and alcohol;[130] policies which indirectly affect behaviors, such as reduced price supports for tobacco;[131] and policies that allocate programmatic resources, such as the Prevention Block Grants, establishment of health promotion centers in selected universities, and the establishment of health promotion offices and agencies in federal and state government. Policies may also affect access to health

promotion resources through the establishment of eligibility criteria, and the appropriateness of health promotion interventions by restrictions on how programmatic resources may be used. Examples include federal restrictions on adolescent pregnancy prevention programs and the use of AIDS money in the development of promotional materials.

There are several important roles for health promotion professionals in policy development, policy advocacy, and policy analysis.[132] Policy development activities may include increasing public awareness about specific health and policy issues, and educating the public about the policy development process. Public advocacy can take the form of encouraging citizen participation in the political process—including voting and lobbying, organizing coalitions to support health policy related issues, and monitoring policy implementation, at the federal state, and local level. A policy analysis role would include providing policy makers, the general public, and target populations with policy options and promoting public input into the policy making process.

There is an important link among these policy roles and the concepts of community discussed earlier. Policy development, public advocacy, and policy analysis have important implications for communities. Berger and Neuhaus[87] argue that public policies should be designed to strengthen, rather than weaken the voluntary associations which serve as mediating structures. As Milio[131] notes, "the task for public policy becomes one of creating environments—all of which have biotic and constructed socioeconomic and interpersonal facets—that are likely to elicit health responses for most people most of the time (page 4)." While Milio is generally speaking of the larger social environment, her statement also applies to the mediating structures in communities.

It is also important to recognize that mediating structures in a community serve as connections between individuals and the larger social environment. Mediating structures serve as points of access to, and influence on, the policy-making process. Thus, the task of health promotion professionals—whether in policy development, advocacy, or analysis—is to strengthen the ability of mediating structures to influence policy; thereby, strengthening the mediating structures and their ability to meet the needs of their members.

IMPLICATIONS OF AN ECOLOGICAL APPROACH

The preceding sections of this article have focused on identifying the need for and characteristics of an ecological perspective on health promotion, with brief examples to clarify each level of the ecological model. The purpose of an ecological model is to focus attention on the environmental causes of behavior and to identify environmental interventions. The six papers included in this theme issue provide in-depth reports on a variety of applications of ecological perspectives, addressing different health programs in a variety of settings. As we have noted, and as the authors of the subsequent articles make clear, recent examples of practice applications of ecological models do exist, although they do not dominate, the landscape of health promotion programs. Further, some of the differences between individually-focused and ecologically-focused health promotion strategies are subtle, the central differences being in underlying philosophies and specified targets of change.

Wallerstein and Bernstein[142] discuss the adaptation of Paulo Freire's ideas about empowerment education to health education, and present a case study of an Alcohol

and Substance Abuse Prevention (ASAP) program in New Mexico. Freire's ideas emphasize education as liberation, social action to promote participation of individuals, organizations, and communities; and gaining control over one's life and society. The ASAP program uses peer education, experiential learning through interviews with patients and jail residents, and adoption of active political and social roles in the community. The program aims at change at the institutional, public policy, and community levels as means to effect interpersonal and intrapersonal health related behaviors.

In a review of environmental interventions to promote healthy eating, Glanz and Mullis[3] describe an interdisciplinary perspective on voluntary, organizationally-based initiatives to reduce barriers to following healthier diets and creating opportunities for action on a *population-wide* basis. They discuss five distinct types of interventions, originating from various health and non-health sectors in society: changes in the food supply, point of choice nutrition information, collaboration with private sector food vendors, worksite nutrition policies and incentives, and changes in the structure of health and medical care related to nutrition. Each of these types of interventions can reach large segments of the population without imputing individual responsibility for poor eating habits or requiring attendance at traditional educational programs. These programs directly target several levels of an ecological model: institutional, public policy, community, and the physical environment.

Monahan and Scheirer[108] address the role of state health department dental offices as *linking agents* in the diffusion of fluoride mouth rinse programs (FMRPs) in public schools. They use a social ecology perspective to analyze the various levels affecting the use of linking agents. Their findings indicate that the state dental offices acted as pivotal interpersonal links in both program initiation and continuation, and that the linking agents' long term commitment promoted institutionalization of the school FMRPs.

Another article focusing on school health promotion examines the phases of change in a cardiovascular risk reduction program which integrates organizational change with student learning strategies. Parcel, Simons-Morton, and Kolbe[103] engaged the involvement of individuals and groups in the schools at all levels—students, teachers, administrators, and school district personnel—to facilitate adoption of broad-based health programs. They identified four key phases of change: institutional commitment, changes in policies and practices, changes in the roles and actions of staff, and finally, new learning activities. Thus, effective implementation of school health promotion programs requires active strategies to facilitate organizational adaptations to the innovation, and the support of providers and administrators to ensure institutionalization.[133]

The growth of workplace health promotion has been a key area which has stimulated critics of individually-oriented life-style change programs. In this issue, Robins and Klitzman[102] present a description and evaluation of a hazard communication program in one corporation with many local plants. They found that programs which were more effectively implemented and better rated by workers were more likely to stimulate changes in organizational and working conditions at the plants. They stress the importance of reaching people at all levels of decision making, and apply the ecological model to the workplace in terms of five levels of intervention: the worker, the work unit, the local plant, the corporation/institution, and society as a whole.

The concluding paper by Kathryn Green[100] addresses issues of responsibility for health and control of factors influencing health in the context of workplace health

programs. She presents a matrix dividing influences on worker health in terms of the extent of control by employers and workers, and then analyzes the responsibilities of parties involved in workers' health. The worker, union, employer, and government each bear responsibility for various areas of physical and psychosocial health. Such an ecological approach to workers' health will result in the use of a variety of change strategies and recognition of the limits of worker control over situational, regulatory, and societal factors.

These articles identify important issues in adopting an ecological perspective. First, several of the articles discuss the importance of environmental supports for delivering health promotion services. While some health promotion programs are short term—such as health fairs and some screening programs—developing environmental and organizational support is necessary for adequate program implementation and ultimate institutionalization.

Second, two of the articles discuss the use of environmental interventions to support individual behavior changes. These include changes in: the physical environment; organizational rules and regulations; and corporate culture. However, neither program attempted to address all levels of the model. Choices in where to intervene will be largely a function of program resources, the mission and goals of the host organization, and the theoretical model guiding the intervention. The importance of an ecological perspective is that it broadens our outlook to include environmental interventions that may support the behavior change process. This suggests the need to incorporate ecological models in our training programs, and to consider the development of specialty areas in health promotion practice.

Third, these articles identify the importance of evaluating health promotion programs at multiple levels. Since we know relatively little about how specific interventions may effect changes in organizational and community environments, and how these environmental changes may affect the initiation and maintenance of behavior changes on the part of individuals, an important aspect of health promotion program evaluation is to describe the change process.

A fourth issue raised by authors in this issue concerns placing sole responsibility for health on individuals by over-emphasizing the role of behavior in determining health. Even viewing behavior within an ecological perspective will not adequately address many of the sources of ill health, such as economic inequities, discrimination, genetics, toxic exposures in the environment, unemployment, etc., except as they effect behavior. While an ecological model could be used to identify environmental sources of ill health, the focus of the model as presented in this article is on environmental influences on behavior. The effectiveness of interventions using the model, then, will be limited by the extent to which behavior contributes to health or illness.

Perhaps the most critical issues in applying ecological approaches to behavior change are ethical ones. While strategies based on an ecological model tend to minimize the likelihood of victim blaming, they can result in charges of coercion.[134] Policy approaches, such as raising the taxes on cigarettes, or banning smoking in public spaces, may be viewed as restricting individual rights and freedoms. Corporate incentive programs for weight loss or smoking cessation may be subtly coercive when behavior change is viewed as linked to job retention, promotion, or salary increases. Social support interventions may also be coercive when interpersonal social influences are used to achieve behavioral changes. Even mass media approaches may be coercive when they are based on appeals to emotions, or manipulate information.[135] Such

approaches can also be viewed as a form of paternalism and are considered by some to be an invasion of privacy.[136]

An essential component of ecological strategies—in order to minimize the problems of coercion and, particularly, paternalism—is active involvement of the target population in problem definition, the selection of targets of change and appropriate interventions, implementation, and evaluation. The process of using ecological strategies, then, is one of consensus building.

By involving the target population in the description of the problem and its sources, important health education has already occurred.[137] As noted by Wallerstein and Bernstein in this issue of *Health Education Quarterly*, the process of planning and implementing programs also shapes our consciousness about the causes and responsibilities for health and illness, and may empower individuals and collectivities to address health related problems.

However, the active involvement of the individuals and groups affected by health promotion programs will not solve all of the problems associated with ecological strategies. In many cases, it may not be possible to build consensus among all of those affected, and in mass media campaigns, for example, it may not be clear who should be involved in the consensus-building process.

In some cases, it may not be necessary to ethically justify restriction of individual freedoms when the exercise of those freedoms imposes a clear harm to others. For example, exposure of non-smokers to sidestream smoke may impose a health threat. In the case of health threats, it is the responsibility of decision-makers to protect the health of non-smokers by restricting the behavior of smokers. In other cases, where the behavior of the individual has only direct effects on that individual, the ethical acceptability of using coercive strategies is much less clear.[138] For example, coercing individuals into participating in an exercise program may be ethically questioned. Some writers have suggested a communitarian ethic as a justification for ecological strategies to protect the public from voluntarily assumed risks to health.[139] Other writers have argued that many of the "voluntary" risks to health are not assumed voluntarily at all; rather social factors influence and determine the risks that individuals assume.[140] Thus the use of social interventions to offset prevailing social influences are both appropriate and ethical. In reality, not all ecological strategies are coercive, and the use of coercive strategies will ultimately be restrained by legal and social sanctions. The prevention of public resistance to ecological strategies will require educational approaches to, "Assure informed consent from the public, and to assure that individuals who are not ultimately protected by them are still in a position to protect themselves."[141]

Notes

1. For example, the *American Journal of Health Promotion, Health Promotion: An International Journal,* and *Corporate Commentary* are all devoted to health promotion issues.
2. For example, *Health Education Quarterly* has recently published theme issues on "Ethical Dilemmas in Health Promotion," 14(1), 1987, and "The Role of the Schools in Implementing the Nation's Health Objectives for the 1990's," 15(1), 1988, The *Canadian Journal of Public Health* recently published a "Special Health Promotion Issue," 77(6), 1988.

3. For example, the *Journal of Social Issues* recently devoted a theme issue to "Children's Injuries: Prevention and Public Policy." 43(2), 1987.
4. For example, the First International Conference on Health Promotion was held in Ottawa, Canada, November 17–21, 1986.
5. Similar issues have been raised within health education. See for example, Freudenberg, N.: "Shaping the Future of Health Education: From Behavior Change to Social Change." *Health Education Monographs*, 6(4): 372–377, 1978.
6. Reciprocal determinism is a component of many psychological models, such as Bandura's social learning theory. However, the sense of transactional models is that individuals and environments interact over time to jointly determine each other. This is distinct from some interactional models in which individuals and environments jointly contribute to behavior, such as those tested by analysis of variance or regression models.
7. Systems models, on the other hand, frequently use outcomes such as system functioning or production.
8. A network framework also suggests that we need to reconceptualize peer education models for preventing drug abuse. Clearly, peer educators should be selected based on their position within existing networks. Instead, many peer education programs rely on self-selected peers who may be peripheral to the existing networks within a school. Thus, we would expect the success of peer education programs to vary, depending upon the selection criteria for the peer educators.

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Section on AIDS

THINKING AND RETHINKING AIDS: IMPLICATIONS FOR HEALTH POLICY

Elizabeth Fee and Nancy Krieger

In the United States, we see three main phases in the construction of the history of AIDS, with each having very different implications for health and social policy. In the first, AIDS was conceived of as an epidemic disease, a "gay plague," by analogy to the sudden, devastating epidemics of the past. In the second, it was normalized as a chronic disease, similar in many ways to diseases such as cancer. In the third, the authors propose a new historical model of a slow-moving, long-lasting pandemic, a chronic infectious ailment manifested through myriad specific HIV-related diseases. The new paradigm of AIDS incorporates the positive aspects of both earlier conceptions. It emphasizes, like the plague model, the etiology, transmission, and prevention of disease but rejects its assumption of a time-limited crisis. It takes from the chronic disease model an appropriate time frame and concern with the clinical management of protracted illness but insists on the primacy of prevention. The authors criticize both infectious and chronic disease models for their individualistic conceptions of disease and their narrow strategies for disease prevention. They further argue that the traditional distinction between, and approaches to, infectious and chronic diseases need to be rethought for other diseases as well as for AIDS.

The history of AIDS does not simply present itself as a chronological succession of events. It is a history that necessarily is constructed and that cannot simply be inferred from the biological properties of HIV or the pathological realities of disease.[1] The history of AIDS is a human affair, and is part of a cultural process of attempting to come to terms with a new and often terrifying series of events—of young people dying before their time, of the intermingling of sex and death—in a period in which the world itself is changing before our eyes and stability is an unlikely dream.

Centered on the bodily experiences of illness and death, the social meaning of the history of AIDS intimately touches upon our ideas about sexuality and societal divisions, social responsibility and individual privacy, order and instability, and

[1] In this article we refer to AIDS as a disease and also to HIV-related diseases. The pathological events initiated by HIV, including the destruction of the immune system, are appropriately designated as a single disease process. This in turn permits the expression of various opportunistic infections and other disorders (e.g., Kaposi's sarcoma), which have been part of the changing case definition of AIDS elaborated by the Centers for Disease Control. These latter infections and conditions are referred to as HIV-related diseases. This somewhat confusing terminology is itself part of the historical process of the scientific construction and definition of disease.

International Journal of Health Services, Volume 23, Number 2, Pages 323–346, 1993

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above all, health and the prospect of happiness. Understanding how we respond to AIDS, how we think about this epidemic, is consequently important not only for what it reveals about the ways in which health policy is created, but also for what it implies about our ability to meet the challenge of future emerging diseases and longstanding public health problems. By thinking and rethinking the history of AIDS, we may thus be able to deal more effectively with a larger array of unsolved health issues.

Within the United States, we see three main phases in the construction of the history of AIDS, with each having very different implications for health and social policy. In the first, AIDS was conceived of as an epidemic disease, a "gay plague," by analogy to the sudden devastating epidemics of the past; in the second, it was normalized as a chronic disease, similar in many ways to diseases such as cancer; in the third, we propose a new historical model of a slow-moving, long-lasting pandemic, a chronic infectious ailment manifested through myriad specific HIV-related diseases.

THE FIRST HISTORY: AIDS AS PLAGUE

At first, AIDS had no history. A strange set of events occurred that were, for the most part, ignored. Some apparently healthy young men exhibited rare opportunistic infections and then died; only a few physicians and epidemiologists were aware that something extraordinary was happening. Noticing that several of the young men were homosexual, the epidemiologists gave the phenomenon its first name, gay-related immunodeficiency disease (GRID). The epidemiologists became fascinated by an apparently exotic lifestyle that included drugs (poppers) and large numbers of sexual partners. As the numbers of reported cases grew, the disease began to acquire its social identity as a new epidemic, a "gay plague" (1, 2).

The dawning recognition of a novel disease, a "gay plague," touched two central social ideas. One was the idea of homosexuality as a social, political, and medical problem; the old association of homosexuality with disease was resurrected and reinforced in cultural perception. But even more powerful was the idea of a new epidemic disease. AIDS shocked the western medical world, appearing as a throwback to an earlier era of infectious and fatal epidemics. AIDS seemed to appear out of historical context, at once entirely new, but also old; it properly belonged to a distant and less comfortable past, before economic and scientific progress had combined to banish the ancient plagues. People in the western world had become familiar with a "modern" pattern of chronic diseases, a familiar litany that began with heart disease and cancer and included a long list of disagreeable but nonfatal illnesses. The chronic diseases were associated with aging, and many considered them the characteristic ills of affluent societies (3–5).

Mass infectious diseases had ceased to command the attention of health policy analysts in the advanced industrial world; for the most part, they were firmly relegated to the third world as diseases of underdevelopment. Even there, the worldwide eradication of smallpox seemed to suggest that it was but a matter of time, organization, and resources until the major infectious diseases would be eradicated. AIDS challenged this hubris, together with the assumption that the late 20th century division of diseases into infectious and chronic disorders naturally fitted an economic and geographic

distribution, with the chronic diseases appearing in highly industrialized nations and serious infectious diseases in the less developed countries. AIDS appeared at first as a disease of the United States, Western Europe, and Australia. A disease of unknown origin, a silent, fatal infection that killed young men in the prime of life, it seemed to be associated with societies of affluence and perhaps even hedonism (6). AIDS, it was true, quickly appeared rampant in Africa, but there it appeared in a different guise—as a disease of heterosexuality and of poverty. There was some connection between the two, but it seemed to many that the phenomena of AIDS in Africa and America were quite distinct. At the same time, Americans suspected that AIDS had been born in Africa; the idea, once publicly discussed, was indignantly rejected by Africans. Nations were busy blaming each other for an epidemic that none wanted to claim (7).

As the statistics on AIDS cases mounted, its identity as an inescapable "plague" seemed confirmed. It appeared to mimic the frightening epidemics of the past: cholera, yellow fever, leprosy, syphilis, and the Black Death. The history of AIDS—the history that seemed relevant to understanding the new epidemic—would be the history of the epidemics of the past (8, 9). This somewhat arcane branch of medical history suddenly gained new social relevance; policy analysts, lawyers, and journalists all wanted to know whether past epidemics could provide some clues to the contemporary crisis. How had societies attempted to deal with epidemics in the past? The contemporary meaning of the plague was read in the face of AIDS (10).

This first reading of the history of AIDS accurately captured and reflected the fear and confusion surrounding the disease. It also provided a frame of reference for talking about the many ethical, legal, and health policy issues it raised. The history of plague implied, for example, a history of quarantines, and quarantines for those with AIDS was, at least in some circles, a serious policy proposal (11–15). The history of most past epidemics (at least as read by liberal historians) suggested, however, that quarantines were more an expression of social distress and fear than an effective measure for controlling disease (16, 17).

The new historical approaches to AIDS prompted by the plague analogy examined such contemporary issues as social discrimination against those groups perceived as the purveyors of infection: in past epidemics, those so stigmatized had been prostitutes, the poor, or minority racial groups; they had been Jews, or Irish, or Italians. The unreasoning prejudices of the past now seemed to be reflected in contemporary social discrimination against gay men and intravenous drug users. To a considerable degree, the history of past epidemics was read as a cautionary tale of the health and social policies that should *not* be adopted in these more enlightened days.

The perception of AIDS as a devastating epidemic discontinuous with the immediate past fed into the millenarian tendencies of the late 20th century. The relatively stable organization of social conflict in the postwar era was dissolving into uncertainty; the capitalist world was mired in economic crises, recession, debt, bank failures, long-term unemployment, and the collapse of an older industrial base; the communist world was fragmenting into a series of political, economic, and national crises that succeeded each other at breathtaking speed; environmental degradation and global warming seemed to many to threaten the final destruction of an exploitative world

order. Popular books announced the "end of history" and the "end of nature" (18, 19). AIDS fed this late 20th century sense of overwhelming catastrophe and continuing apocalypse (6).

In this context, the infectious disease paradigm of equilibrium disturbed and paradise lost took on new meaning. Many who were ecologically minded viewed humanity's meddling with technology as having disrupted the niches of natural organisms, thus creating the possibilities for transmission of new diseases (20, 21). Conversely, conservative social commentators saw the problem not so much as one of technology but as one of deviance. They viewed the disease as the revenge of nature on liberal society and appealed to a lost world of "traditional values" and a more stable and authoritarian order (13; 22, p. 48).

The growing sense of crisis, fanned by a sudden outburst of media attention and by the ever-climbing statistics of those ill and dying, aided the widespread adoption of the historical metaphor of an inexorable "plague." The language of plague, of crisis, of epidemic was in turn adopted by a gay community that organized to demand social and political attention to the disease, financial resources to care for those affected, accelerated scientific research to develop a cure and preventive vaccines, and mass public education to help prevent further transmission of infection. In the face of seeming societal indifference, gay activists demanded a "War on AIDS," thereby adopting the military metaphor often used by government to indicate that it takes a problem seriously enough to devote significant financial resources to its solution (6, 23). (Thus, we have had a "war on cancer" and a "war on drugs" but not yet a "war on homelessness" or a "war on illiteracy.")

The growing sense of crisis eventually permeated the levels of the federal government, and money began to fuel a massive scientific effort first to identify and then to understand the viral mechanisms of the disease. With the new flow of funding for research, scientists readily turned their attention to the race for discoveries. The view of AIDS as epidemic fed scientific competition between laboratories and nations; the competition for research funds was encouraged by the perception that large profits would reward those able to produce the laboratory tests, vaccines, and pharmaceuticals so urgently needed to address the disease. The scientific competition to unlock the secrets of AIDS seemed at once more intense, more glamorous, and more hopeful than the long struggle to deal with diseases such as cancer. Infectious diseases were believed less intractable than chronic ills; the media waited breathlessly to announce new scientific breakthroughs.

In 1983, those waiting were rewarded with the announcement of the discovery of the viral cause of AIDS, not once but twice—by both French and American researchers (20, pp. 47–82). This is not the place to recount the international dispute that followed, nor the political compromise by which France and the United States agreed to share credit for the discovery and to divide the considerable royalties from the patented HIV diagnostic test (20, 24). Mirko Grmek's (20) account is persuasive, but for our purposes here, it is sufficient to note that the discovery of what would be called, by international agreement, HIV would transform both the scientific and the public perception of the epidemic. The identification and naming of the viral cause of AIDS seemed to offer the first real hope that it could one day be controlled.

The Health Policy Implications of the First Paradigm

The plague analogy reflected social fears and also helped fan them. A crisis mentality marked by panic and confusion had surfaced; angry parents pulled their children from schools where HIV-positive children were enrolled. Health departments closed gay bathhouses, describing them as a locus of contagion. Newspapers and magazines, including some prominent medical journals, published accounts that suggested the entire population was at threat, that AIDS could perhaps be spread by mosquito bites, by household contacts, or by kissing (25–27). Careful epidemiological statements about the unlikelihood of infection by casual contact failed to pacify much of the population who wanted definitive assurance that they and their families were not at risk. People began to fear infection from restaurant and service workers, from their coworkers in offices, and from public toilet seats. In this atmosphere of panic, many people with AIDS lost their jobs, their apartments, their health insurance, and even their friends (28). The mounting statistics being reported by the media suggested an exponential increase in cases and deaths, the inescapability of the epidemic, its potential spread from defined risk groups to the "general population," and the conviction that the fragile and burdened health care system would soon be overwhelmed.

The escalating public sense of crisis had met with government indifference to a disease that was killing gay men; the Reagan administration was already committed to cutting taxes and social expenditures, reducing health care costs, and turning over health and safety regulations to private enterprise (29). The confrontation between the Washington policy establishment and gay community and public health leaders prompted many to become involved in demonstrations, lobbying, and the creation of alternative services and clinics. The previous organization and growing sense of self-identity and power of the gay community in cities such as New York and San Francisco were now channeled into the struggle to redefine national policy so as to address the emergency.

The sense of emergency could work two ways: to generate funding for AIDS services and research or to make a case for Draconian methods of prevention and social policies of exclusion. In the first instance, the perception of a sudden, time-limited epidemic was used to justify the funding of AIDS services by taking money from other budgets, such as those for Native American health services and for other sexually transmitted disease programs (30, 31). Such transfers meant that overall health expenditures could be contained; the money for AIDS was only a temporary measure—until the emergency passed. In the second instance, immigration policies, requiring the exclusion of those who were HIV-positive, harkened back to an older conviction that diseases came to America from outside and could be avoided by identifying and refusing to admit the sick. Within the cities most affected, gay communities coped with the dying while conservative commentators pronounced the disease God's retribution on the sinful (31, p. 18). Within the state of emergency, relatively simple methods of prevention were developed to promote condoms and clean up the blood supply.

The emphasis on AIDS as a sexually transmitted disease and the consequent social and epidemiological interest in the sexual practices associated with viral transmission produced an extraordinary new willingness to discuss sexual activities in graphic terms,

at least within scientific and health policy circles.[2] Public discussion of sexual transmission was more guarded, with some of the pronouncements about transmission through the exchange of bodily fluids so vaguely worded that the populace was probably more confused than enlightened by the information.

Despite the cautious approach to public description of sexual activities, AIDS did bring new kinds of visibility to the gay community. For the first time, large numbers of gay men (and women) were seen on television screens and in newspapers and magazines talking about AIDS, lobbying, fundraising, and articulating alternative views. Health policy was, for perhaps the first time on such a large scale, being made outside the usual professional circles. Professional boundaries became permeable as people with HIV-related diseases declared themselves de facto experts and began the process of renaming themselves, redefining their illness, questioning medical authority, criticizing government spokespersons, demanding new and more appropriate services and more effective drugs, and insisting on both their rights to confidentiality and their rights to public expression and influence (34). The gay community refused the diagnosis of "promiscuity" as the problem and insisted upon "safer sex" rather than celibacy. Taking responsibility for AIDS as a disease, they also refused the language of guilt and innocence and claimed a more scientific and more humanitarian view of the epidemic as the problem of containing a virus while protecting the interests of those already infected.

The Problems of the First Paradigm

The sense of AIDS as an immediately catastrophic epidemic, a sudden, unexpected, and disastrous return to a vanished world of epidemic disease, began to change in the late 1980s. People were not, in fact, dying as rapidly as had initially been predicted. It became clear that there was a long latency period; people lived with HIV infection for 10 to 12 years, and it was not the sudden killer it had at first been perceived to be. The sense of immanent epidemic was diluted because a relatively low proportion of the population was ill. One may, for example, contrast AIDS to the influenza epidemic of 1918 when 20 percent of the population became ill, of whom 2 to 3 percent died (i.e., 0.4 to 0.6 percent of the total population); now 0.1 percent of the population had become sick over a ten-year period (35). Once the first series of shocks over AIDS had passed, the society, like many of those infected, was learning to live with AIDS (36).

In the first epidemic of fear of AIDS, a tactic of many of those arguing for increased resources to be devoted to the disease had been to stress the fact that AIDS was not

[2] One can, for example, trace the increasingly explicit use of language within the august pages of the *American Journal of Epidemiology*. Compare the clinical but quasi-graphic listing of sexual practices in the article by A. R. Moss et al. in 1987 (32)—oral insertive, oral receptive, swallow semen, oral-anal insertive, oral-anal receptive, rectal insertive, rectal receptive, urine exposure active, urine exposure passive, manual-rectal insertive, manual-rectal passive, use of dildos insertive, use of dildos receptive, douching—with the exhaustive listing of sexual practices in the article by R. A. Coates et al. in 1988 (33)—mutual masturbation, primary inserts penis in contact's mouth, primary ejaculates in contact's mouth, contact inserts penis in primary's mouth, contact ejaculates in primary's mouth, primary inserts penis in contact's anus, primary ejaculates in contact's rectum, contact inserts penis in primary's anus, contact ejaculates in primary's rectum, primary inserts finger in contact's anus, contact inserts finger in primary's anus, primary inserts tongue in contact's anus, contact inserts tongue in primary's anus, primary inserts object in contact's anus, contact inserts object in primary's anus, primary inserts hand in contact's anus, contact inserts hand in primary's anus.

limited to the homosexual community but potentially threatened the whole population. If it had struck the gay population first, this was merely a contingent fact; AIDS in Haiti and in Africa was a heterosexual disease, and its spread to the "general population" was just a matter of time. The crisis could not be contained in gay bars and bathhouses but would soon spill out into America's suburbs, schools, and churches. The death of movie idol Rock Hudson in 1985 was, ironically, taken by many in the United States to mean that "anyone" could get the disease; for the first time ever, President Reagan spoke about AIDS (37, 38).

With the passage of time, however, the warnings about a brushfire epidemic had come to seem overly alarmist. The disease had indeed spread, but not in any perceptible way to suburban havens; instead, it had spread to inner city minority populations and specifically to those using injectable drugs and their sexual partners (39). Despite anecdotal newspaper stories about wealthy young white women who had contracted the infection, the epidemic had not deeply affected worried white communities but was largely contained within the several well-defined risk groups.

The transmission of HIV did not, after all, follow the plague model. Diseases like plague spread very easily, whereas it had become clear that transmission of HIV is quite difficult. It requires direct contact between people, usually by choice or else by the anonymous but still intimate exchange of blood through transfusions. Once the blood supply had been made safe and people had been made aware of the need for caution in having sex or sharing drugs, AIDS began to be perceived as potentially containable. The population, initially hoping for a miracle cure, had been repeatedly told that a vaccine would take at least ten years to develop; people were thus learning to accept a longer time frame for the disease.

Another reason for a diminished sense of an epidemic emergency was the discovery of some apparently effective palliative treatments and the promise of more experimental therapies to come; there was now some prospect of hope for those infected. Hospitals, clinics, and other health care institutions were working out new ways of providing services for AIDS patients; the disease was no longer such an anomaly and was becoming a more routine and expected sector of health care delivery.

Perhaps most importantly, the groups affected were themselves refusing to look on the disease as a death sentence. Numerous people with AIDS (PWAs) were surviving for many years and were vociferously insisting that the previous emphasis on dying be replaced with a new more optimistic focus on "living with AIDS," with attention directed at those who were HIV-positive but not ill, and those who had symptoms but were nonetheless capable of enjoying life, working, participating in their communities, and experiencing a wide range of emotions and pleasures. They did not want to be locked into a politics of fear and rejected being labeled as the "victims" of disease.

Within the gay community, and to some degree the population at large, the emphasis on safer sex now became a long-term strategy for a long-term disease; health education programs continuously stressed the fact that the virus could not be casually transmitted, and this understanding lessened the immediate panicked reaction to those infected. The resistance to testing decreased as the tests could now be linked to some prospect of aid; if infection were diagnosed early, medical care and pharmaceuticals could help. The availability of palliative therapy, most notably AZT, then placed AIDS into the larger

pattern of chronic diseases with their emphasis on screening and early intervention and, at least for some, the potential management of long-term disease.

THE SECOND HISTORY: AIDS AS A CHRONIC DISEASE

The second history is therefore the conceptualization of AIDS as a chronic disease. In this history, AIDS became normalized and appeared as one more chronic disease that had to be managed, as part of the usual way of doing business. This is a history that was constructed—and could only be forged—in relatively wealthy industrialized countries, such as the United States and Western Europe, that could afford to provide health services for other chronic conditions.

Central to this new history was a view of chronic diseases as maladies that either are not infectious or else are not easily transmitted, develop over a long period of time (with changes that can usually be detected by screening), entail a lengthy period of illness and associated use of health services, are not easily cured, and are often fatal in the long run. Classic examples include hypertension and other cardiovascular diseases, diabetes, and many types of cancer. Although anomalies have long been acknowledged—for example, cervical cancer may be linked to a virus; a myocardial infarct is an acute and often immediately fatal event (40)—the category of "chronic disease" nonetheless has been useful, particularly from the perspective of those who must live with these diseases and the people and institutions responsible for providing health services.

In the second history, the metaphors of war and balance retreated into the body and became internalized. Images abounded of the immune system as the body's "defense" against "external invaders," with a new array of pharmaceutical agents forming welcome auxiliary forces (6, 41, 42). The new emphasis on treatment and on "living right" in order to live with AIDS harkened back to older, humoral notions of equilibrium (43); popular self-help books on AIDS are replete with reminders about the need to manage stress and to live a "balanced" life, with a "balanced" diet, adequate sleep, and appropriate exercise (44–47).

Outside the body, the call for a "war against AIDS" was directed toward new therapeutic discoveries and became a front for societal inaction in preventing the spread of AIDS. Like the "war against drugs," the official "war against AIDS" (at least in the United States) bolstered the status quo; just as government funds poured into law enforcement agencies and prisons while programs to combat poverty and rehabilitate prisoners languished (48, 49), so too were federal monies increasingly directed toward prestigious and profitable clinical trials while Congress fought over the allocation of Ryan White funds for community-based AIDS services and prevention campaigns (50–52).

As a chronic disease, AIDS was to be contained within its boundaries, like a sore that festers but does not spread. In the United States, its history included sharp debates over whether AIDS could "break out" and create a widespread "heterosexual epidemic" (53, 54), as opposed to remaining within the communities of the dispossessed—gay men, injection drug users, hemophiliacs, the poor, and people of color, in all their intersecting permutations. Ensconced ever more firmly as a disease of "others," AIDS found its niche in the inner cities (55, 56), and as a "chronic disease" became yet

another marker of chronic social inequalities that could be tolerated as long as only those "others" died.

The Health Policy Implications of the Second Paradigm

In the second history of AIDS, attention turned to the ability of the health care system to deal with this new chronic disease. Health policy professionals reasserted their expertise in a familiar domain (50), and succeeded in at least partly closing out the voices of the gay community and others newly entering the AIDS arena, for example, the African-American community, women with AIDS, and advocates of needle exchange (57). With budgets and scarce resources at stake, accuracy in estimates became paramount. Costs of care were calculated and recalculated (58, 59), while tallies of the number of persons infected with HIV were revised downwards (50, 60). Increasing numbers of hospitals developed specialized AIDS units, a sign of the institutionalization of the disease (50).

Attention and funding also shifted toward developing new treatments. Reacting to these changes, many AIDS activists plunged into political battles to speed the release of approvals for experimental drugs and to demand new, more inclusive protocols (61–63). Others continued to fight for improved health coverage and against discriminatory practices by the health insurance industry (64).

The emphasis on treatment also led to a rethinking of questions about HIV testing, including the conflict between individual privacy and mandatory reporting (65–69). Ethical objections to testing people when nothing could be done to ameliorate their health status lost their clout, and were replaced by arguments that people should—or must—be tested for their own good. With fears about casual transmission relatively assuaged, new concerns surfaced about the possible threat posed by long-living, asymptomatic HIV-infected persons whose jobs routinely involved exposure to other people's blood, as in the case of surgeons and dentists (70–73). Reminiscent of earlier, more hysterical "plague"-like debates about the likelihood of improbable transmission scenarios, the debate about infected health care workers nonetheless belonged to and epitomized this second history of AIDS: people infected with HIV were not simply going to vanish through early deaths, and instead had to be reckoned with from the long-term vantage point of managing chronic diseases.

The Problems with the Second Paradigm

The shift from a "plague" to "chronic" disease model involved much more than the recognition that people infected with HIV and ill with AIDS may require health services for an extended period of time. Each paradigm of disease carries its own assumptions, concerning such basic issues as etiology, prevention, and treatment. Although framed in biological terms, these assumptions nonetheless have a strong social core that cannot be divorced from broader social attitudes about individual versus societal responsibility for health.

In the case of AIDS, adopting this new paradigm did far more than direct our attention to issues not anticipated by the plague model. It also introduced all the fundamental assumptions and inadequacies of the chronic disease model itself. Because most chronic

diseases are considered noncommunicable and because their etiologies typically are obscure, the conceptualization of AIDS as a "chronic disease" inadvertently undermined the sense of urgency required to sustain societal efforts to prevent HIV transmission. To reiterate the obvious, AIDS *is* a communicable disease whose transmission *can* be prevented; this basic fact is deemphasized by the chronic disease model. Moreover, much of the scientific research around chronic diseases focuses on disease mechanisms and not disease origins; it emphasizes screening and treatment over prevention, and prevention itself typically is framed as an individual responsibility (74). In the usual pattern for chronic diseases, the primary concern is with managing the symptoms of the ailment (and possibly curing the disease, if feasible); once appropriate remedies are found, concern about etiology and prevention recedes. This pattern may be seen, for example, in the cases of hypertension, diabetes, and cancer. The question becomes how to stop the growth of a tumor once it starts or how to lower lipid levels once they rise, rather than how to prevent the initial onset of disease. This pathological orientation may be good for the pharmaceutical industry, but it does little for primary prevention.

To the extent that prevention is discussed, the strategies proposed for most chronic diseases are thoroughly individualistic and rarely challenge the conditions of the production of disease (75–78). Not only is disease prevention translated into the realm of individual effort, but the only actions typically considered are those that can be implemented by solo individuals. Little attention is accorded to possible disease prevention strategies to be used between persons with unequal power, such as consumers versus food producers over pricing policies or workers versus employers over occupational hazards. This orientation reflects the dominant view of individuals as isolated atoms, rather than as persons who necessarily are carriers of the social relations of class, race, and gender that permeate the society of which they are a part (79). It is also far easier to counsel individuals about what they should eat (and blame them for poor choices) than to get the food industry to change the production and promotion of "junk foods," just as it is much less controversial to encourage people not to smoke than to try to prevent the growing of tobacco or to curb air pollution. Intended or not, these attitudes toward the causation and prevention of chronic diseases now affect our thinking about AIDS and, if not addressed, threaten to vitiate our still inadequate response to the HIV epidemic.

Perhaps not surprisingly, our approach to AIDS already has begun to be influenced by these troubling features of the chronic disease model. With the identification of HIV, scientific interest shifted to the laboratory and the gaze turned inward, to the actions of HIV within the body (1, 50). Relatively less attention was devoted to understanding the complex societal factors affecting the social production and reproduction of the epidemic. Social and scientific rewards go to those who successfully examine the mechanisms of disease within the body. It is also less politically controversial to look inside cells than to investigate the political economy of inner cities, the war on drugs, prostitution, and the oppression of gays, women, and people of color.

Another common assumption built into the chronic disease model is that most chronic conditions have a multifactorial etiology, but the diseases themselves are specific and typically are characterized by the organ they affect (e.g., heart disease, ovarian cancer). Moreover, most of the exogenous exposures contributing to their etiology are viewed as ubiquitous or containable, and not easily eliminated (74, 80). Nor can the endogenous

factors, such as genetic constitution or hormonal milieu, easily be altered—although the challenge of doing so remains a major spur for much biomedical research today (81).

The consequent notion of "balance" between the host, agent, and environment that informs the chronic disease model is much more accepting and pessimistic about the long-term presence of etiologic agents than is the paradigm for infectious diseases. In the latter, the agent is perceived as a noxious invader whose attack signals the rupture of a prior equilibrium enjoyed by the host and environment; removing the agent and restoring lost innocence becomes the goal. In the chronic disease model, however, the focus is less on preventing exposure to or eliminating the agent than on the adaptation of the host to life with the agent. The objective becomes elucidating how the mechanisms of the host's body can be altered or modified so as to deal better with the presence of the agent. Obviously, adopting such a framework for AIDS could well be lethal.

Given the assumption of ubiquitous etiologic agents (both exogenous and endogenous), the key research question in the chronic disease framework becomes why some people are susceptible while others are not (81). This in turn has led to a vigorous search for genetic markers, a trend now emerging in AIDS research as well (82). To the extent that susceptibility is thought to be mediated by "stress" rather than solely by genes, much of the emphasis in the chronic disease paradigm is on alleviating people's reaction to stress, rather than eliminating either the stress itself or the noxious exposure (80, 83). It is easier for public health workers to modify people's responses to existing conditions than to challenge the "balance" of the status quo responsible for these conditions. Even in those instances where the exogenous agent is deliberately manufactured, greater priority is given to containment rather than eradication, as exemplified by the emphasis on "permissible exposure limits" over product substitution in occupational health (84, 85). And, consonant with this orientation, more and more of the research on chronic diseases is being directed toward factors primarily under the control of health care professionals, ranging from the efficacy of patient education to iatrogenic illness. The ultimate message is that the best way to change health is to alter aspects of the health care system itself.

Certainly, not everyone concerned about chronic diseases has this narrow approach to their prevention, management, and treatment (75, 78, 86). A minority public health voice is challenging the acceptance of social conditions that contribute to current levels of chronic disease. Emanating from the ranks of environmentalists, occupational safety and health advocates, opponents of tobacco and of alcohol abuse, and nutritionists, to name a few, its proponents have called for such measures as enhancing the regulatory and punitive powers of EPA (Environmental Protection Agency) and OSHA (Occupational Safety and Health Administration), enacting bans on smoking in public spaces and workplaces as well as increasing taxes on tobacco and alcohol products, and altering incentives to encourage food producers and retailers to market healthier foods at lower prices (86, 87).

Even so, most of the emphasis in chronic disease prevention remains targeted at "lifestyle" risk factors, and especially at encouraging consumers to reduce their exposure to nonessential exogenous agents, such as "junk food," tobacco, and excessive alcohol and dietary fat. This strategy, moreover, works best with people who have disposable income and leisure time to read and deal with the multiplying instructions about how to keep healthy—not to mention living in safer neighborhoods, buying more

expensive foods, and joining health clubs (74, 88). Conversely, it has been least successful when prevention efforts require challenging social relations as they really are, as exemplified by the persistence of diseases of poverty and those due to occupational and environmental health hazards.

Perhaps the best illustration of the weaknesses of the chronic disease model as a guide for health policy is provided by the history of anti-tobacco initiatives. In many ways, tobacco is the smallpox of chronic disease—it is the one agent that can be eliminated and that can be aggressively fought by public health professionals, precisely because it is a nonessential product. As such, it is the exception that proves the rule. Insofar as smoking was seen solely as something that individuals inflicted upon themselves, much of the public health effort was devoted to educating people about the hazards of tobacco (in great part by affixing warnings to tobacco products and advertisements) and to individualized smoking cessation interventions that only rarely succeeded. Efforts to encourage crop substitution were half-hearted at best, and tobacco corporations faced only minimal pressure to diversify their holdings. Only when tobacco-related chronic diseases were redefined as "communicable," courtesy of second-hand smoke and the recognition that passive smoking constituted a health threat to nonsmokers, did the public debate and its policy implications change radically (89–91). Prevention efforts dramatically gained in strength and finally were able to restrict the use of tobacco in the public sphere.

In sum, when we adopt the classic chronic disease model, we effectively embrace what might be termed a postmodern public health policy, with all of its trappings and flaws. In this postmodern world, one caught up in the fragmented dazzle of the global market that reaches everywhere, people are seen to exist only as passive consumers, not active producers, their lives a pastiche of splintered identities constructed from the random output of our "information age" (92). With the death of the author comes the end of accountability, and the defeat of the belief that systematic change can be achieved. Instead, priority is accorded to the productions of the media, which reign supreme as the ultimate symbol and purveyor of a "free choice" that isn't.

This too is the condition of contemporary chronic disease policy. Oriented to the market and the media, it consistently offers individuals the chance to choose between preselected options about how to live better, even if these choices typically are beyond the grasp of those who most need a change. Declarations on the need for prevention serve primarily as commentary upon, rather than concrete challenges to, the social conditions that give rise to disease, both chronic and acute, communicable and noncommunicable. Only in its refusal to cede "expert" status to members of the "lay public," and its desire to employ nonoverlapping, noncontradictory categories (for example, "infectious" versus "chronic"), does this paradigm retain important yet problematic vestiges of its "modern" origins.

At a time when AIDS has already been designated as the first "postmodern" disease (93), and has provided the text for reams of commentary and reflection upon contemporary society, it is particularly important that AIDS prevention policies not succumb to the fatal logic of the chronic disease model as construed in our postmodern world. We cannot accept an approach that cleaves the categories of "communicable" and "chronic," that insists on an "either/or" logic when "both/and" thinking is required. The failures of containment policies for communicable diseases already abound, as

evidenced by the growing epidemic of drug-resistant tuberculosis, itself linked to the HIV epidemic (94, 95), by the reappearance of cholera in the western hemisphere (96), and by the rise of measles due to insufficient funding to cover the cost of vaccination (97, 98). Nor have individualistic strategies succeeded in reducing the incidence of most noncommunicable chronic diseases. It is time for another approach, and time to forge another history of AIDS.

THE NEED FOR A NEW PARADIGM: AIDS AS A CHRONIC INFECTIOUS DISEASE AND PERSISTENT PANDEMIC

The third history begins with the recognition that neither of the first two histories of AIDS—as gay plague and as chronic disease—adequately reflects the complex realities of HIV-related diseases. Indeed, AIDS challenges all of our categories. If a plague, it is a peculiarly slow-moving plague; if a chronic disease, it is a notably communicable chronic disease. The standard assumptions surrounding the categories of infectious and chronic diseases thus fail to capture the multiple dimensions of AIDS.

These are not merely semantic objections. The words matter. We propose that a more adequate conceptualization of AIDS must be based on the fact that AIDS is a chronic infectious disease. Neither of these terms, "chronic" or "infectious," can be eliminated or ignored. Their order is, moreover, important from the point of view of prevention and policy. By calling AIDS a chronic infectious disease (rather than an infectious chronic disease), we emphasize the aspects of etiology, transmission, and prevention as opposed to clinical management.[3] Indeed, we might well term AIDS a collective chronic infectious disease in order to emphasize the inadequacies of dealing with AIDS from a purely individualistic perspective; AIDS is, above all, about people in personal and social relationships. And by calling AIDS a persistent pandemic, we emphasize both the long time frame of the disease and its global impact. Changing our historical construction of AIDS thus means changing the policies we perceive as relevant, and our sense of the time frame for developing interventions and preventing disasters. At issue is the urgent need to overcome the limitations of current ways of rigidly dichotomizing so-called "infectious" and "chronic" diseases, for if we cling to outdated categories and approaches, we will undercut our efforts to prevent and ease the burdens of AIDS.

In moving toward a new paradigm, we need to acknowledge that the old categories of infectious versus chronic disease that prove problematic in dealing with AIDS break down in many other places as well. The distinction between infectious and chronic disorders provided the basis for an important polemic in the 1940s and 1950s, when epidemiologists and public health officials were persuaded that their older emphasis on infectious diseases was inadequate to the apparently noncommunicable chronic ills that afflicted the populations of the more developed world (99, 100); although that polemic

[3] The terminology of "infectious chronic disease" places a disease in the general category of chronic illnesses, with the term "infectious" used as a modifier. By contrast, "chronic infectious disease" highlights the infectious character of the disease, modified by its chronic or long-term features (of both latency and period of infectivity). Our taxonomy thus draws attention to the etiology, mode of transmission, and possibilities for prevention rather than the more usual focus on pathology.

was successful, the categories now serve as much to impede as to promote thinking about disease. Elizabeth Barrett-Connor (40) has already argued that the distinction is arbitrary and is detrimental to understanding the epidemiology of a wide variety of diseases. By cleaving the two realms, the traditional categories barely admit the possibility of chronic infectious diseases (such as tuberculosis and herpes zoster) and also suggest that we are somehow to think differently about latency, transmissibility, etiology (especially unifactorial versus multifactorial), and behavioral risk factors for "infectious" versus "chronic" diseases, thereby skewing the research questions asked and policies proposed.

The different orientations to time inherent in the infectious and chronic disease models have quite different implications for disease prevention policies. The older plague model fostered a general attitude of crisis, including Draconian approaches to prevention; the chronic disease model expanded the time frame but turned attention away from prevention toward disease management. The third and more inclusive model implies that we need long-range strategies for dealing with the disease, including more effective methods of prevention over the long haul as well as providing care and social support for those already infected and those already sick. It acknowledges, like the earlier plague model, the extraordinary disruption and devastation produced by an infectious disease that afflicts people in their prime productive and reproductive years. At the same time, it offers a less pessimistic approach for people who test positive to HIV since it implies that a positive blood test is not an immediate death sentence but the sign of a major problem that must be dealt with and lived with for many years, with adequate social services, counseling, and health care.

As we begin to develop these programs, we must recognize the failures of prevention in the traditional infectious and chronic disease models. On the infectious side, for example, the reemergence of tuberculosis shows that, while it is important to find drugs effective against pathogenic organisms, these may only provide a temporary respite, perhaps lasting for several decades, before old problems reassert themselves. Effective drugs should be used to buy time to address the social context of the production of disease, not merely be developed as ends in themselves while the social context of disease is ignored. People in the health field need to understand that we cannot expect to address all of our ills within the health care system; planning for prevention should not be focused on a single-minded search for a technical fix.

Our approaches to prevention of the noninfectious diseases have also been too narrowly conceived. Too often the framework of prevention has merely been to persuade individuals to become more educated consumers and to desist from consuming hazardous products. More and more community-based interventions are now challenging this limited approach (101–103). In occupational and environmental health, for example, community-based efforts have proved far more successful than individualized interventions. In the case of AIDS, community-based safe sex campaigns, needle exchanges as a community endeavor, mass leafleting of bars, and community health outreach workers are proving considerably more effective than earlier individualized approaches (55, 104).

Beyond this, AIDS has repeatedly demonstrated that people cannot be dealt with as isolated individuals as they are in both the infectious and chronic disease models, but must be addressed as members of particular communities with historically determined

identities. Within the gay community, much thought and creativity has gone into the development and promotion of safer sex practices. But cultural patterns of cruising and sexual anonymity are directly related to historic patterns of discrimination (22); a longer-term strategy for preventing transmission of sexually transmitted disease must include the effective implementation of anti-discrimination statutes. By affecting both the character and institutions of same-sex sexual encounters, AIDS may well have long-term effects on the politics of identity within the gay community; just as identity politics were largely a reaction to social discrimination, so the weakening of discrimination can open up more political options (and diversity of social experience) within this or any other affected group.

The forms of male sexuality related to AIDS transmission are certainly not restricted to gay men; they are forms of male sexuality that have long been celebrated and promoted, and they are culturally reflected and reproduced in our ideas of masculinity, our child-rearing patterns, and the constant selling of sex as a commodity. We are also only beginning to come to terms with the hidden world of bisexual married men who are invisible to most AIDS programs, yet are crucially important for disease transmission precisely because of the levels of secrecy involved. It is also important to consider the needs of those men who have sex with other men but do not view themselves as part of the gay ("white") community. It may be more effective to reach them through churches, minority organizations, and trade unions, and to conduct outreach efforts in bars, truck stops, and areas known for prostitution. Within the more restrictive approach of marketing safer sex, sex stores and sex videos have begun the enterprise of making safe sex sexier, and condom manufacturers have started to develop more innovative condoms in a variety of colors and tastes (105).

The overwhelmingly individualistic biomedical orientation of the infectious and chronic disease models and their typical disregard for the particular health status of racial/ethnic minorities in the United States also has distorted our understanding of the full epidemiology and reality of AIDS. Much of the early writing about AIDS, for example, ignored its prevalence and unique characteristics among people of color. Patterns of homosexuality and heterosexuality are not, however, cultural givens; they have different social constructions within white and minority ethnic communities, and these differences need to be understood and appropriately addressed (106–110). Given the multiple social and economic difficulties that many of these communities face, the specific problems of AIDS need to be approached within an understanding of the issues of employment, education, housing, economic development, and the struggles against the drugs that are flooding inner city communities. Needle exchange programs, for example, should be allied with drug treatment programs and other initiatives that offer some hope for an alternative to long-term drug dependence (111, 112). Most of the issues that are critical for people with AIDS, such as housing and health care, are widespread problems throughout these communities.

The epidemiological categories of "risk groups" that are firmly embedded in the infectious and chronic disease models have also tended to mask the class basis of many health issues. AIDS and HIV-related diseases are no exception. Official AIDS statistics, for example, report cases classified by age, gender, race/ethnicity, and mode of transmission and do not provide any information on poverty or social class (113). The invisibility of class in the official data mirrors the invisibility of class in public

understanding and public policy. For their part, most trade unions have not had AIDS education on their agendas. A few unions are, however, now starting to take up issues in AIDS eduction; the Service Employees International Union (SEIU), for example, recently broadened its needle stick injury prevention program to include general educational materials about safer sex and AIDS (114). As we move away from thinking solely in emergency terms and in terms of static, individualistic "risk groups," with the health experts in charge of strategic planning for AIDS, it should be possible to develop more coalition-based planning and policy making by involving unions and community-based, minority, and gay organizations (115).

Similarly, the problems of AIDS among women have only recently received much attention (116, 117) with the lag attributable, in part, to the predominance of narrow constructions of AIDS. To date, women with AIDS have tended to be ignored and left out of programs because they did not fit easily into gay male groups, because their symptoms and constellation of infections did not fit Centers for Disease Control (CDC) guidelines, or simply because AIDS programs were specifically designed for men (118–121).

Just as AIDS shows the inadequacy of mutually exclusive categories of infectious and chronic diseases, so too it challenges the traditional distinctions and separations between maternal and child health, women's reproductive health, pediatrics, and infectious diseases. AIDS crosses all the boundaries and, especially for women with AIDS, the boundaries themselves are part of the problem of gaining access to care and social supports for themselves and their children. There are, for example, virtually no detox programs that will take pregnant women or women with children.

The traditional assumptions around chronic disease care involve a family structure in which women are available to provide care for a sick family member. The chronic disease model rarely deals with the familial incidence of disease or situations in which several generations within one household are affected by disease at the same time. In the case of AIDS, mother and children may all be ill; we are also seeing a new generation left orphaned at an early age (122, 123). Such a situation requires new forms of care for children and attention to the total impact of disease on the household, not simply on the sick individual.

AIDS also poses the issue of women's reproductive rights in dealing with disempowered women whose ideas about childbearing may not fit those of their physicians or other health professionals (124–127). Women with AIDS and women who use drugs have found their reproductive rights restricted in every possible way. On the one hand, the opposition posed between the rights of the mother and the rights of the fetus has led to generally punitive attitudes toward any mother who fails to abide by the increasingly rigorous standards of healthy motherhood; on the other hand, women are punished because of social resentment of the financial demands that they and their children may make on society (128). One response to the numbers of infants with AIDS has been to deny women's rights to bear children; health care professionals often assume that any pregnant woman with AIDS should have an abortion. The presence of disease does not, however, abolish a woman's right to control her body, nor does it mean that all women want to end childbearing. Women who want to have children despite HIV infection need to be supported in this choice through the provision of health care for themselves and their children; they are likely to need counseling, access to child care options, and

assistance with housing. Coming to terms with these questions in the case of AIDS may prepare us for the many issues raised by the genetic screening tests that will soon be available to detect a multiplicity of genetic disease markers (129). In our preoccupation with the scientific potential of genetic screening, we have not devoted the necessary attention to the social meanings and conflicts that will be precipitated by the application of these technologies.

Nor is the problem of preventing AIDS in women simply a matter of encouraging women to buy condoms, that is, simply an issue of purchasing a barrier to infection (as the infectious disease model would propose) or of acting as a responsible consumer (in accord with the chronic disease model). Any serious approach to prevention must take into account women's general lack of power in relationships with men; the consequent relations between sexuality, economic dependency, and power; rape, coerced sexuality, and violence against women; and the fact that casual prostitution may be an important way of earning money in a world where women's labor is often not valued (118). Women's ability to protect themselves from HIV infection is part economics, part power, part physical danger, and part psychology; it requires social support and protection for women who try to "Just say no."

What Are the Health Policy Implications of This Third View?

When we conceptualize AIDS as a collective chronic infectious disease and persistent pandemic, following the third historical model, we can take the time necessary to develop more effective interventions. Whereas a classic, time-limited epidemic lasting a few days, weeks, or months allows time only for immediate, emergency measures, a longer time frame should enable us to address the myriad unanswered questions about sexuality and drugs, and thereby develop appropriate mass education methods targeted at multiple different communities (117, 130). We must also study the social context of sexuality and drug use patterns: the cultural meanings of sexuality, not simply numbers of sexual contacts, are an essential aspect of developing more effective forms of prevention (22, 131). For sexually transmitted diseases, we need a better understanding of the various reasons that people engage in risk-taking behaviors, of how to sustain changes in risk-taking behavior over time, of how people negotiate power within sexual relationships, and how to balance risk reduction against abolition of harm. We know very little about sexuality—what people like, what people think they want, what people do—and we must more effectively address the political resistance to gaining this knowledge. In the United States, the suppression of recent national sex surveys is a foolish and dangerous refusal even to gather the minimal data needed (132–134). We also need to rethink the standard patterns of prevention based on individual behavior and to start thinking about prevention in terms of people in relationships—including both the variety of sexual relationships, from anonymous to monogamous, and the larger social relations of race, class, and gender.

We have seen that AIDS has affected several defined communities such as urban gay men and injection drug users and that different health education and prevention techniques are required to reach diverse constituencies. We cannot assume, however, that HIV infection will be confined to these defined communities; while working on different methods of prevention in communities already heavily affected, we should also

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be developing effective prevention in communities not yet deeply touched by the disease. The longer time frame we now accept implies that we can learn ways of preventing infection before many more whole communities are devastated. Our strategies for prevention must extend to a longer future, with more effective planning; we are not at liberty to expect that the epidemic will soon be over.

The fact that AIDS is a chronic as well as communicable disease requires attention to reforming the health care system to deal more effectively with all chronic ills (29, 135). Most obvious, at least in the United States, is the need for a rational system of financing medical care; if this were properly addressed it not only would mean a better ability to cope with HIV-related diseases, but would clearly provide an essential part of the answer to dealing with other diseases as well. We are, perhaps, beginning to learn the importance of having affected communities involved in the process of planning and setting policy.

There are other matters that require continued attention. The problems associated with testing and screening for HIV have only in part been worked out and are still highly controversial, given the lack of social protection for those who test positive. We are also beginning to accept the need for more inclusive clinical trials—or at least, to question trials that arbitrarily exclude participants by race or gender. The problems and ethical issues involved in the testing of experimental drugs, the use of placebos, and the approval of new drugs are all important in AIDS; the process of confronting these questions within the context of an engaged community will help provide answers that are likely to be also applicable to other new (and old) diseases.

CREATING A THIRD HISTORY OF AIDS

In this second decade of AIDS, we have the chance to learn from the first decade, from the unique history of AIDS itself, and no longer need to rely upon prior and not necessarily appropriate models. In seeking a more unified conception of AIDS, we want to retain the strengths of both earlier models and use each to counterbalance the weakness of the other. If we can begin this process with AIDS, it may also open new possibilities for dealing with other conditions that may have been too narrowly boxed into either the infectious or chronic disease category. Challenging the rigid distinction between the infectious and chronic disease categories also tacitly questions the assumption of diverse patterns of disease characteristic of the first and third worlds. Just as it has recently been recognized that the chronic diseases are now widespread in third world countries (136), so we must also acknowledge the reappearance of the infectious "diseases of underdevelopment" (tuberculosis, cholera, etc.) in the industrialized world. Thinking clearly about health and disease requires more attention to the global interdependence of societies and economies.

AIDS also has reminded us that in general there are relatively few routes of transmission of disease, and that we have much to learn from the failures as well as the successes of preventing "old" diseases. The experience with AIDS should therefore not only help us to prepare for other emerging diseases, but also force us to address the "old" diseases whose very existence established the models used to construct the first and second histories of AIDS. As part of this, we must acknowledge that these "old" diseases and AIDS persist both in the United States and around the world not simply because of a lack

of knowledge, but because of socially created political and economic obstacles, which can only be overcome by being publicly identified and directly tackled. By capturing the worst elements of both infectious and chronic diseases in the populations assaulted and in the failures of health policy, AIDS has become a protracted disorder of the dispossessed. It demands analysis of their situation in its totality and not simply as yet one more disease problem to be approached in the usual fragmented and incomplete manner.

As the histories of AIDS so clearly demonstrate, we naturally look for analogies from the past. In general, this is appropriate. It can also be grossly misleading. Prior constructions of disease—of plague, of chronic illness—have simultaneously enhanced and constrained our understanding of AIDS and our response to this new epidemic. Each has invited us to think and act in particular terms, using concepts and approaches shaped by past periods of history. Complementary if not mutually exclusive, these successive paradigms have demanded that we either wage war on a mass epidemic or else contain a chronic ailment.

AIDS, however, has defied efforts at neat categorization. Challenging our narrow taxonomies of disease classification, this new affliction has highlighted serious flaws not only in the application, but also in the assumptions of predominant disease prevention strategies. In one short decade, AIDS has changed from a disease with no history to one with a history in its own right, that is not merely derived from the past, but belongs to the present we occupy and the future we forge. As we think and rethink our way through this wretched and wrenching epidemic, we must be prepared to embrace its complexities and contradictions. Perhaps by doing so, we will make ourselves more open to responding to the demands of other emerging diseases, and more able to deal with the scourges of the past that haunt us still.

Note — This article was prepared for the International Symposium on Emerging Infectious Diseases, sponsored by the Fondation Louis Jeantet and Fondation Marcel Mérieux, and held in Annecy, France, April 6–8, 1992.

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Reducing HIV incidence in developing countries with structural and environmental interventions

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AIDS 1995, 9 (suppl A):S251–S257

Keywords: AIDS, HIV, AIDS prevention, HIV prevention, behavior change, social structure, environment, economics, developing countries.

Introduction

The AIDS epidemic is generally viewed as a health problem, largely exacerbated by the risk behavior of people who either do not know how to change, do not want to change or do not have the means to change their level of infection risk. This perspective of AIDS, as a disease of the individual, has dominated prevention efforts. Structural and environmental factors, however, such as poverty and migration, make a significant contribution to the spread of HIV infection [1,2]. While it is important to target the individual in attempting to prevent AIDS, a more comprehensive approach, including interventions on the structural and environmental level, may allow the effectiveness of prevention programs to expand beyond that realized from only individualistic approaches. In this review, we examine the potential for HIV interventions at the structural and environmental level.

The typical theoretical approach to AIDS prevention is based largely on individual psychology. Prevention programs frequently attempt to motivate people to reduce their risk behavior, or maintain low-risk behavior, through persuasion. Education, information, counseling, HIV testing and other services are provided to influence individual psychological processes that appear likely to produce changes in behavior. Many of the major theories of AIDS risk reduction, and health promotion in general, are primarily psychological theories. These include the AIDS Risk Reduction Model [3], theories of self-efficacy, the Stages of Change Model [4], the theory of reasoned action [5], the Common Sense Model of Illness Danger [6], the Precede Model [7], the Health Belief Model [8–11], social learning theory [12–14] and others.

While the relationship between social, structural, and environmental factors and HIV/AIDS risk is now better understood, HIV prevention interventions that operate on these levels are sorely lacking. In this review the use of structural and environmental interventions for HIV risk reduction is examined by (1) developing a theoretical approach to levels of causation in HIV incidence that goes beyond the individual perspective; (2) examining structural and environmental factors that have been shown to promote the incidence of HIV; (3) suggesting possible structural and environmental interventions that may prevent AIDS; and (4) presenting a research agenda for further investigation on this topic.

Levels of causation

The causes of most health and social problems have multiple levels, with each level having associated change mechanisms with unique natural limits in their ability to effect change. A typology of four levels of causation has been identified, comprising superstructural, structural, environmental and individual levels. Table 1 summarizes each causal level for the discussion that follows.

Superstructural factors encompass both dominant values about macrosocial and macropolitical arrangements, often developed over long periods of time, and physical and resource characteristics that result in advantages or disadvantages. Examples of superstructural factors include economic underdevelopment, sexism, racism and homophobia. Mechanisms of change for the superstructural level include such actions as national and international social movements, revolution, land redistribution and war.

Structural factors include laws, policies and standard operational procedures. For example, unregulated commercial sex and few laws to protect worker rights are likely to increase HIV epidemics. Mechanisms of change at the structural level include legislative lobbying, civil and human rights activism, boycotts, constitutional and legal reform, and voting.

Environmental factors include living conditions, resources, social pressure and opportunities available to in-

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Sponsorship: This research was supported by The Kaiser Family Foundation and the Family Health International AIDS Control and Prevention (AIDSCAP) Project under contract to the United States Agency for International Development.

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© Current Science Ltd ISBN 1-85922-239-0 ISSN 1350-2840

Table 1. Levels of causation for HIV incidence.

Causal level	Definition	Examples	Change mechanism
Superstructural	Macrosocial and political arrangements, resources and power differences that result in unequal advantages	Economic underdevelopment, declining agricultural economy, poverty, sexism, homophobia, Western domination, imperialism	National and international social movements, revolution, land redistribution, war, empowerment of disenfranchised populations
Structural	Laws, policies and standard operating procedures	Unregulated commercial sex, bachelor wage system, no family housing required at worksites, lack of human rights laws, no financial support for social services	Legislative lobbying, civil and human rights activism, boycotts, constitutional and legal reform, voting, political pressure, structural adjustment policies by international donors
Environmental	Individual living conditions, resources and opportunities, recognition of individual, structural and superstructural factors	Work camps with many single men and few women, few condoms, high prevalence of HIV/sexually transmitted disease, family far away, few job opportunities, few social services, failing agricultural economy, industrialization and urbanization	Community organization, provision of social services, legal action, unionization, enforcement of laws
Individual	How the environment is experienced and acted upon by individuals	Loneliness, boredom, lack of knowledge, low risk perception, sexual urges, moral values, perceived self-efficacy, perceived locus of control	Education, provision of information, improved self-efficacy, rewards and punishment, counseling

dividuals. Examples include work camps with many men isolated from their families, poor social services and ready access to commercial sex. In essence, the environmental level is the realization of individual, structural, superstructural, and other factors in the real world. Change at the environmental level is best realized through such processes as community organization, provision of services, legal action, and civil disobedience.

The individual level describes how the environment is experienced and acted upon by individuals. Examples include loneliness, boredom and a low perception of risk. Changes on the individual level can be realized through such factors as education, provision of information, reward and punishment, improved self-efficacy and counseling.

Structural and environmental interventions

Many significant, large-scale changes in the reduction of risk and in individual self-protective behavior can be attributed to changes in the social structure and environment. Moreover, these changes in the area of health promotion have often been wide-scale, nearly universal and sustained over long periods of time. Table 2 summarizes some of the many structural and environmental public health interventions that have been successfully implemented.

Over the past 20 years, massive efforts have been made to reinforce a reduction in cigarette smoking in the United States through educational programs on the dangers of smoking. These individual approaches to the cessation of smoking encouraged many to stop; however, not until smoking was banned in many public places did the prevalence of smoking significantly decline [15,16]. These structural and environmental changes have had the effect of forcing smokers to smoke near the entrances of worksites exposed to the elements, and in special sections in restaurants and airplanes. Perhaps more importantly, this has also had the effect of labeling smokers as social outcasts and deviants. Thus, by intensifying the individual approach to the cessation of smoking with structural (antismoking laws) and environmental pressures (social isolation and stigma), the impact of prevention programs was significantly increased far beyond the results of purely individualistic approaches.

Table 2. Examples of structural and environmental interventions.

Enriching foods with nutrients to ensure adequate diet
Increasing educational opportunities for women, which also results in reduced fertility rates
Taxing cigarettes to reduce consumption level
Conducting syphilis screening on all hospital admissions
Requiring head protection for motorcycle riders
Fluoridating water supplies to reduce cavities
Banning smoking in public spaces

Seat-belt usage programs are another example of an individual level intervention that has been significantly improved by the addition of structural and environmental interventions to existing individualistic programs. Early efforts at stimulating seat belt usage were based on individual-level education campaigns. Not until laws were passed on the use of seat belts at a structural level did their prevalence of use become widespread in the United States. This effect was significantly increased when environmental-level interventions were developed

in the form of a requirement for seat belts to be installed in all new vehicles. Again, the expansion to structural- and environmental-level interventions generated behavior change and risk reduction on a level that would be extremely difficult to achieve with individual-level interventions alone.

Structural and environmental HIV intervention programs have significant advantages over those that are based solely on individual level approaches. Social norms are most likely to change at the environmental and structural levels, and with a change in the social norm comes a change in associated behavior. Norms and values are developed primarily through socialization, which occurs through social interaction at the environmental level [9]. Furthermore, norms can be influenced by structural changes, such as laws and policies that require adherence to proscribed behavior. Over time, the new behavior can become habit, and the social norm and expectations 'catch up.' For example, the seat belt usage mentioned above significantly increased when the use of seat belts was mandated by law. Eventually, many people who began to use seat belts only to avoid traffic tickets became so accustomed to them that they now use them without thinking.

As we move into the second decade of the AIDS pandemic, several structural and environmental factors can be identified as being significantly associated with the promotion of HIV epidemics. Many social, cultural, economic and political factors can be shown to facilitate HIV transmission. There are, however, three sets of social forces that appear to be growing in significance: (1) economic underdevelopment and poverty; (2) migration, urbanization and family disruption; and (3) war and civil disturbances.

Economic underdevelopment and poverty

The relationship between economic underdevelopment, poverty and AIDS is most apparent cross-nationally. Those countries with the lowest standards of living are also the ones with the most serious AIDS epidemics in terms of HIV incidence [17–19]. Similarly, AIDS exacerbates poverty in poor countries hit hard by the epidemic, contributing to a cycle of underdevelopment and AIDS-related mortality [20,21]. Intracountry analysis also indicates that poverty, in both poor and rich countries, is often associated with a high HIV incidence [19], and that those with fewer economic resources are likely to die more quickly from AIDS than those with greater wealth [22,23].

Several factors that are the direct result of economic underdevelopment and poverty operate on the structural, environmental and individual levels to increase the potential for HIV infection. On the structural level, few significant laws or policies regarding AIDS prevention are in place in developing countries. In general, in less developed countries, the poor often find that other health and social issues are more important and immediate compared with AIDS, and there are few AIDS activists to encourage legal and policy reform. Moreover, most developing countries have few legal restrictions on management practices, and work environments often foster HIV risk behavior through substandard pay, few entertainment opportunities, isolation from the family and limited access to health care, especially treatment of sexually transmitted disease.

Structural adjustment programs and economic recession have amplified the effects of poverty on the AIDS epidemic in many countries. The reduction in basic social services, infrastructure and educational opportunities, together with increased unemployment, landlessness and poverty brought on by economic decline and structural adjustment programs has left Africa highly vulnerable to AIDS, since these economic forces promote migration, family separation and sex work [24]. As Sanders [25] notes: 'Failure to identify and address the social and economic factors underlying the spread of HIV infection in Africa has... led to an overwhelming concentration on sexual behaviors... without concomitant concern for influencing their structural determinants.'

Migration, urbanization and family disruption

Migration is significantly associated with the development of AIDS epidemics, especially in Africa [26–30]. Migration facilitates HIV transmission through several processes. With declining agricultural production in rural areas [31] and the lure of cash employment in cities [32,33], many men migrate to cities in search of work. This process generates large populations of unemployed and underemployed men in urban areas, separates men from their families and promotes urbanization [34]. Many women also migrate to urban areas and work camps in search of employment, often turning to prostitution to survive when other employment opportunities are unavailable [35].

Those rural men who find urban employment frequently use their wages to purchase sex from commercial sex workers to satisfy their sexual desires, loneliness, boredom and lack of entertainment [36]. The link between the spread of HIV infection and sexual contact between sex workers and clients in developing countries is clear [37–40]. Most migrants return home regularly, carrying HIV into the rural areas [30]. Moreover, many migrants have little knowledge of HIV and AIDS, and of ways to protect themselves from infection, and they frequently do not realize they are risking infection [27]. These individual-level factors have promoted AIDS transmission in many developing countries.

Many structural and environmental factors have also promoted AIDS epidemics in developing countries. Sig-

nificant urbanization has occurred in many developing countries over the past 30 years [41]. Economic dependency is significantly related to the rate of urbanization, fueled largely through growth of tertiary and informal economic sectors, and inhibited growth in the industrial labor sector [42]. The increasing urbanization of developing countries has significantly promoted HIV transmission on multiple levels. Urbanization brings people closer together in time and space, allowing a rapid spread of HIV through densely populated areas. Urbanization of traditional societies has brought many people, often young and with little knowledge of AIDS, into social environments with fewer social control mechanisms than they may be accustomed to having. Rapid urbanization has also promoted changes in the perceptions of responsibility to the community and family [43], leading many to experience loneliness, isolation and depression [44,45], factors that likely promote risk-taking.

War and civil disturbances

A growing factor that has to be considered in AIDS prevention is the effect of war and civil disturbances, which have become significant facilitators of HIV epidemics in recent years in many countries. Military populations often run a very high risk of HIV infection [46]. Moreover, the effects of war, and preparation for war, promote the spread of HIV though several processes, such as (1) generating large numbers of refugees, (2) disrupting prevention programs, (3) separating military men from their families and (4) promoting a disregard for individual human rights.

AIDS epidemics in Africa have been severely affected by war. For example, thousands of people fleeing from brutality in Rwanda have ended up in camps in Tanzania, Uganda and Zaïre [47]. Conditions in these refugee camps raise the specter of large-scale AIDS epidemics due to poor social services, high population density, separation of families, poor condom availability and little attention paid to AIDS education and prevention by health workers. Recent efforts to address AIDS prevention in Rwandan refugee camps in Zaïre and Northern Tanzania (USAID and AIDSCAP staff, personal communication, 1994) are commendable. However, the programs should be evaluated carefully, and implemented in other sites when appropriate.

War and civil disturbances have also disrupted AIDS prevention programs, for example, in Haiti, Rwanda, Nigeria, Zaïre, Uganda, Ethiopia, Myanmar, Mozambique, South Africa, Angola, all of which have a significant HIV incidence. A climate of political repression and fear is not conducive to innovative AIDS prevention, and frequent changes in funding for prevention are often affected by donor embargoes on foreign aid, making both prevention and medical care for those infected with HIV difficult to obtain [48].

Military life has structural and environmental features that often promote HIV risk-taking. Military populations, mostly men, are often separated from their families for long periods, leading to loneliness and sexual frustration. In many countries in the developing world, cash income is more readily available to members of the military than to the general population, thus providing the economic capacity to purchase commercial sex. Boredom during peacetime is also a factor that promotes frequent sex with prostitutes [49]. The culture of many military institutions is often highly sexist, and it tends to foster a group consciousness that can lead to peer pressure to engage in risky behavior with little regard for the potential for HIV transmission. Military culture is based on deference to authority, not individualism and innovative behavior. These factors have promoted high levels of HIV incidence among members of the military in many developing countries [47]. Prevention efforts that attempt to mitigate these factors without significant changes in the social structure and environment are not likely to be effective.

Structural and environmental interventions for AIDS prevention

Despite the clear relationship between structural and environmental factors and HIV epidemics, there have been few attempts to intervene on the structural and environmental levels, and when they have been attempted, such interventions have rarely been evaluated for their effectiveness. A few examples of attempts at structural and environmental interventions can be found in both developing and developed countries.

For example, in 1984 the director of the San Francisco Public Health Department issued an order banning high-risk sex in gay bathhouses. The bathhouses were to be regulated by 'monitors' who were responsible for ejecting any patron who was seen engaging in high-risk sexual behavior. Later that year, bathhouses were ordered to be closed [49]. There are some important lessons to be learned from this experience. First, the initial reaction of many in the targeted community was hostile. Many saw the closing of gay bathhouses as an affront to their civil rights to free association and sexual liberation [50]. However, soon after the regulation of behavior in the bathhouses was initiated, few in the homosexual community continued to raise these concerns. The impact of the bathhouse closing also sent the signal that social acceptability for unprotected sex for homosexual men was no longer the accepted norm. The impact of these actions on risk reduction remains largely unmeasured.

A unique structural and environmental intervention for HIV prevention known as the 100% condom program has been pioneered in Phitsanuloke, Thailand, an area with very high incidence of HIV infection [51]. The key components of this program are: (1) commercial sex workers must use condoms with all clients, (2) brothel

owners must enforce condom use by assisting commercial sex workers with uncooperative clients, (3) condom use is monitored in brothels, (4) compliance is monitored through a regular review of gonorrhea rates among commercial sex workers, and (5) graduated sanctions are applied for non-compliance, targeting brothel owners, whose establishments are closed if repeated violations occur.

Initial reports indicate that this program has had a profound effect on the level of unprotected sex and on the incidence of sexually transmitted disease and HIV [52]. The program has recently been expanded nationally, and impressive results have ensued. A recent evaluation of the rates of sexually transmitted disease has shown a dramatic reduction in incidence since the establishment of this law [53], to the point that many clinics for sexually transmitted disease clinics are finding very few clients each day. Moreover, social norms towards unprotected sex with prostitutes have dramatically changed [54]. Initial reports indicate that it is becoming less acceptable, and more difficult, to have sex with a commercial sex worker without a condom in Thailand [53]. It remains to be seen whether these effects can be sustained, and whether such a program would be effective outside of the Thai context.

One controversial structural/environmental intervention for AIDS prevention was implemented in Cuba. Cuba's AIDS control program was, until recently, composed of five key components [55] including: (1) blood screening for HIV, (2) widespread HIV testing of the population, (3) educational programs to reduce HIV risk behavior, (4) isolation of HIV infected individuals in sanatoria with better health care and living conditions than those of the average Cuban and (5) clinical research to identify the best treatment protocols for those with HIV and AIDS. The impact of this intervention approach, based largely on structural changes, has not been fully evaluated. More recently, many of the sanatoria have been closed, and community-based care is becoming more common.

These examples of structural/environmental HIV intervention programs raise several important issues. First, like other intervention approaches, structural and environmental interventions have significant potential for violating individual civil rights. In particular, they pit the rights of individuals against the concept of collective community rights. Second, when the community accepts and supports changes in the social structure and environment, the intervention is more likely to succeed. Third, the interventions should be evaluated in order to identify their impact on risk behavior. Often, when a structural or environmental approach has been taken, there has been little coordinated attempt to evaluate the impact on HIV incidence.

Table 3 provides examples of other possible structural and environmental interventions. However, a clear research agenda needs to be developed so that the most appropriate and effective programs can be implemented. Moreover, the interventions need to be designed to serve as models for emulation and to allow clear measurements of real changes in behavior.

Table 3. Examples of potential structural and environmental changes.

Potential structural changes
AIDS impact assessments required for large development projects, especially those funded by international donors
Laws and policies that require 100% condom usage in brothels
Laws requiring family housing at migrant labor camps
Laws outlawing wife inheritance
Requirement for hotels to stock condoms in each room
Reduction of taxes on condoms
Changes in government policies that permit nationwide marketing of condoms and explicit AIDS prevention by mass media
Potential environmental changes
Better recreational facilities at military bases to reduce boredom and the desire to visit brothels
Changes in truck routes to allow truck drivers more time with families
Employment of entire families for migratory labor rather than men alone to keep families intact, and building housing for migrant families at work sites
Staggered paydays to dissuade group brothel attendance
Provision of check-cashing facilities to dissuade payday alcohol use and risk behavior in settings where saloons are the only places available to cash checks
Policies that require 100% condom use with sanctions on brothel owners who fail to comply
Access to AIDS prevention and care for sexually transmitted disease at work sites
Mentoring programs at work sites with large numbers of migrant workers to facilitate social integration of new arrivals
Availability of condoms in traditional and especially in non-traditional outlets such as bars, hotels, flower shops, truck stops
Improved care for sexually transmitted disease, such as use of syndromic management in treatment and better availability of drugs

Conclusions and recommendations

As the worldwide AIDS pandemic matures and changes, so too must the approach to prevention. AIDS prevention programs need to incorporate more than just individualistic psychological approaches to risk reduction. It is important to learn more about the effect of social, cultural, political and economic factors on HIV risk behavior, and to develop creative, culturally appropriate and community-sponsored prevention programs that make substantive changes on multiple levels. Although superstructural factors such as poverty, economic underdevelopment, sexism and homophobia are pervasive and difficult to change, there are many opportunities to make changes in the social structure and in the environment that can lead to a significant reduction in HIV incidence. Individual, psychological intervention approaches will not promote optimum changes in behavior when structural and environmental constraints are not addressed.

Community involvement in shaping and implementing structural and environmental HIV interventions is a crucial factor in their success. As discussed earlier, when communities are involved in a prevention program, it is much more likely to succeed. However, there is much to be learned about the process of community mobilization and the techniques that best promote sustainable community participation. It is essential, also, to ensure that any outcomes are ethical, since the process of making changes in the social structure and the environment in order to address social and health problems carries a risk of unethical outcomes. A research agenda for addressing these issues needs to be developed and undertaken.

Four areas of research have priority when studying structural and environmental interventions for HIV prevention. First, descriptive research is needed to clarify the patterns of structural and environmental determinants of HIV incidence, and their variations by region and target population. Theories of behavioral change need to be developed from this descriptive research, recognizing causal processes on the super-structural, structural, environmental and individual levels.

Second, operational research is required to determine what changes can be made in social environments that will promote a reduction in risk behavior, and how the changes will be interpreted by people affected by them. In particular, it is important to determine how changes can be presented to avoid or minimize negative perceptions by those affected. Research is also required to establish the most effective mechanisms for making environmental changes.

Third, the involvement of the community in developing and implementing structural and environmental interventions needs to be better understood. Research is needed to determine whether certain social environments are more amenable to change with regard to factors that promote risk behavior. For example, is it easier to make structural and environmental changes in populations with strong community integration, or in areas where people perceive a sense of a common threat?

Finally, research is needed to determine how the impact of structural and environmental interventions can best be evaluated. It is important to develop projects that clearly show the effectiveness of structural and environmental interventions on risk reduction. To this end, research models are needed that allow a clear attribution of behavioral changes to specific intervention programs.

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11

Interventions for Adolescents

Peter Aggleton and Kim Rivers

INTRODUCTION

The World Health Organization (WHO) and numerous other international organizations have identified young people as being at special risk of HIV infection. Estimates from the Joint United Nations Program on AIDS suggest that up to 60% of new HIV infections are among those aged between 15 and 24 years,[1] and UNICEF has estimated that two thirds of those who become infected with HIV will do so before they reach 25 years of age.[2] There is also evidence that the average age at which young people become sexually active has fallen worldwide.[3] With 800 million people under the age of 25 living in developing countries, the implications of HIV infection for young people are of great concern.[3]

Developing countries, where resources are extremely limited, are most severely impacted by the AIDS epidemic,[4] and adolescents in those countries are likely to suffer most.[5] The percentage of the population who are young is much higher than in industrialized countries, as is the annual growth rate of the youth population and the proportion of young rural to urban migrants.[6] The level of risk for youth in developing countries may be greater due to what Sweat and Denison,[7] among others, have described as the ways in which social, cultural, economic, and political forces, such as poverty, migration, urbanization, war, and civil disturbance, facilitate HIV transmission. It is not surprising therefore that those countries with the lowest standards of living are also among those with the most serious AIDS epidemics.

With an increasing incidence of AIDS among young people in developing countries, it is crucial to ensure that effective HIV prevention programs are developed and disseminated. Young people also present an opportunity for halting the epidemic. Since their sexual habits may not yet be firmly established, behavior modification strategies may be more effective, relative to older people, in motivat-

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Preventing HIV in Developing Countries: Biomedical and Behavioral Approaches, edited by Gibney *et al.* Plenum Press, New York, 1998.

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ing the adoption and maintenance of HIV preventive behaviors.[8] Yet, there is much uncertainty about how best to approach HIV and AIDS prevention when working with young people. This is due in large part to the ambivalent way in which young people are viewed by adults. Hoffman and Futterman[9] have noted that young people are often perceived both as "small adults and as immature, inexperienced and untrustworthy children." Such attitudes have informed the theory, research, and practice of many involved in developing and implementing health promotion programs with young people. It is important therefore to examine underlying assumptions about young people in relation to the design and implementation of HIV prevention programs.

Aggleton and Warwick[10] discuss in detail the ways in which young people and their behavior have been characterized by those researchers and health practitioners who are concerned with adolescent health. They point out that usually, and often in the absence of evidence, adolescence has been conceived as a period of "storm and stress." Young people have been almost uniformly viewed as irresponsible and hedonistic risk takers who regard themselves as impervious to danger. In reality though, youth and adolescence are highly variable periods of life. Before the mid-19th century, young people living in Europe made the transition from childhood to adulthood at a much earlier age and more quickly than in modern industrialized countries. Indeed, in many parts of the developing world today, the onset of puberty often signals greater economic and social responsibilities rather than increased opportunities for pleasure seeking.

Not only do young people's experiences depend on historical, social, and cultural background, but within a particular context their experiences are mediated by gender, sexuality, socioeconomic status, state of physical and mental well-being, and so on. Since the turn of the century, psychologists and other researchers interested in adolescence have tended to characterize young people in a largely uniform manner. Stereotypical ideas about youth became so powerful that some researchers began to talk about universal adolescent characteristics, ignoring such influential characteristics as diversity of social background, ethnicity, gender, sexuality, and other variables such as different age groups within the overall category of "youth." Studies of adolescence, then, have been dominated by biased assumptions. This has serious consequences not only for young people and the way they are viewed and feel about themselves, but also for work focusing on young people and AIDS.

Among the central images to be found in the burgeoning global literature on young people and AIDS are the "unknowledgeable adolescent," the "high-risk adolescent," the "overdetermined adolescent," and the "tragic adolescent."[11] Respectively, these categories describe young people who are ill-informed, inclined toward unnecessary and excessive risk-taking, unduly conforming to peer pressures, and those who have HIV infection or are living with AIDS. Such images have dominated the work on young people and AIDS throughout the epidemic.

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Most importantly, these accounts are unlikely to speak to young people themselves, since the predominant theme in them suggests that adolescent sexuality needs to be controlled, restrained, and often sanctioned by others, namely adults. Only rarely are youth afforded a version of their sexuality that provides a sense of pleasure and the potential for human fulfillment. Future HIV-related work with and for young people needs to start from a set of more realistic and less stereotypical premises, acknowledging the diversity of young people's experience, and adapting prevention programs to ensure that different needs are met.

Stereotypical accounts of young people often have stimulated the development of sex education programs with a narrow focus. Adults are inclined to have some difficulty acknowledging adolescents as sexual and potentially sexual beings.[9] Concerns have been expressed and reflected in government policies that providing too much or certain kinds of sex education may propel young people into premature sexual relationships. As a consequence, many programs of sex education in both industrialized and developing countries have tended to concentrate on abstinence and helping young people to say "no" to sex. Yet, several important studies now suggest that well-designed programs of sex education, which combine messages about safer sex as well as abstinence, may delay sexual debut, decrease sexual activity among those young people who are sexually active, and increase contraceptive use.[12] In spite of such findings, work with young people historically tends to have emphasized the prevention of pregnancy and, more recently, sexually transmitted diseases (STDs) and HIV infection, rather than the promotion of sexual health. Only now and only in some parts of the world are we seeing a more helpful shift from pregnancy and disease prevention toward broader, more multidimensional and rights-orientated conceptions of sexual health.[13]

Ultimately, this move toward the promotion of sexual health will draw young men into the forum, since a great deal of HIV-related intervention activities have thus far focused on young women. Certainly young women in developing countries are at increased risk of HIV infection when compared with young men. Estimates suggest that in Uganda, for example, HIV infection among women aged 13 to 19 years is 20 times higher than for young men of the same age group.[1] However, if prevention programs are to make a significant impact on the HIV epidemic, it is important that more programs be targeted toward young men. The stereotypical gender roles and unequal status of women in sexual relationships mean that it is often difficult for young women to negotiate safer sex. That most young girls have sex with older males further increases the power imbalance in these relationships. Interventions that focus solely on girls and young women not only deny the important power relations that exist between males and females and the very real threat of sexual exploitation and abuse that many young females face, but they also deny young men the opportunity to maximize their sexual health. Similarly, many programs assume heterosexuality in young people, thereby denying young people who have same-sex relationships the opportunity to acknowl-

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edge their own sexuality and to work toward protecting themselves from HIV infection.

STYLES OF INTERVENTION

Interventions designed to prevent HIV infection in young people have differed in style, theoretical framework, and level at which the intervention is pitched. Many interventions, designed early in the HIV epidemic, were as based on individualistic approaches using theoretical frameworks such as the health belief model, the theory of reasoned action, protection motivation theory, and social learning theory. Each of these models places emphasis on changing individual behavior through information giving, rational discussion, and skill development. Such individualistic approaches tend to marginalize the social and cultural context that informs individual experience. They tend to assume, for example, that people, having acquired certain knowledge, insights, and skills, will be free to make certain choices. Yet in both industrialized and developing countries people do not behave in isolation of their particular social contexts. Young people may be victims of poverty, abuse, and exploitation, in which case negotiating skills may be difficult to exercise.

In developing countries people often express needs that are perceived to be more pressing than the risk of HIV infection, such as educational and employment opportunities. Rotheram-Borus *et al.*[14] have pointed out that young people who live with stressful situations, such as homelessness, may engage in "survival sex," which makes consistent use of condoms difficult. Baldo[5] sums up these concerns when she states that the burden of prevention of HIV infection cannot be borne solely by the individual through attempts to regulate his or her behavior; this burden is especially heavy for adolescents who face barriers denying them access to education, health and social services.

The middle years of the epidemic have been characterized by a move away from the individualistic models of intervention described toward models which work at the level of community.[15] Although definitions of community may vary, these interventions have had a common concern with changing and reinforcing norms by addressing groups of people assumed to share social experiences.[15] The increasing number of peer education programs that fall within the category of community-based interventions have been perhaps the most important for young people. Peer education utilizes members of an existing social group or network who undertake communication and training with other members of the group to which they themselves belong.[3] Clearly, peers can be important sources of information and support for behavior change,[16] but it should be noted that several studies have found that young people need and desire communication and support from trusted adults as well.[17]

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Most recently, and in response to some of the limitations of both individual-level and community-level interventions, researchers and practitioners have become interested in what Sweat and Denison[7] refer to as "structural and environmental interventions." These recognize that factors such as urbanization, civil disruption, and poverty in developing countries have facilitated the growth of the epidemic. For example, migration from rural to urban areas means that large numbers of men leave their families in order to seek work in cities. While there, they may have unprotected sex with new partners, and on periodic visits home introduce HIV infection into rural areas.

In relation to young people particularly, learning how to manage relationships in ways that bring personal fulfillment without risk of HIV infection, social policies that inhibit the growth of the epidemic need to be emphasized and disseminated.[5] For example, in many circumstances women lack the resources and power to negotiate effectively with men over safer sex.[15] Hence, social policies that foster greater equality between men and women and greater access to education for girls are crucial in halting the epidemic. Similarly, legal and policy barriers to condom promotion and other relevant social and health services have to be eliminated.[5]

While each of these levels of intervention may appear quite distinct and while each is underpinned by quite different theoretical standpoints, future HIV and AIDS-related interventions are likely to attempt to work simultaneously at one or more levels. Young people need to be persuaded that HIV infection is relevant to them, and certain enabling interventions at the level of public policy need to take place to ensure that young people are able to behave in ways which will protect their health.[18]

At all levels of intervention, questions about the most appropriate ways in which to evaluate impact are important. Clearly, we need to ensure that the interventions are effective and efficient. In the early days of the epidemic, people used and adapted the skills and techniques that they already had, often without engaging in any systematic evaluation of their interventions. Now, practitioners and researchers must increasingly support their intervention program, curriculum, or strategy by producing concrete evidence of its effectiveness.[19] The move toward evidence-based HIV and AIDS-related programs means that intervention planners must now think carefully how they can demonstrate program effectiveness. There are a variety of ways in which to evaluate interventions, producing a range of different types of evidence about what works and what does not, including observation, objectives-based evaluation, theory-driven evaluation, randomized controlled trials, and quasi-experimental methods.

In discussing the various interventions for young people in developing countries, this chapter will take an inclusive stance: that is, a wide range of evaluation methods will be considered, in spite of the current privilege often given to randomized controlled trials and quasi-experimental methods.[20] In addition, we

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will consider some innovative programs that have not yet been systematically evaluated. Furthermore, because the effects of health promotion programs may not be immediately evident and it may take a lengthy follow-up period to observe decreases in prevalence of HIV, a range of prevention strategies will be discussed including those still in development or ongoing and for which conclusive outcome evaluation is unavailable.

INTERVENTIONS FOR YOUNG PEOPLE IN DEVELOPING COUNTRIES

Parts of the world have high prevalence of HIV infection but constant or diminishing rates of infection; numerous countries in developing parts of the world such as Africa, Southern and Central America, and Asia have been identified as having high and increasing rates of infection. It is important to note that within regions rates of HIV prevalence may not be uniform and may vary considerably between countries. It is also important to note that the countries that constitute a geographic region are not homogeneous; rather, they are diverse in culture, religion, socioeconomics, tradition, and practices. Understandably, this is not helped by the mass media that often presents developing regions, most notably Africa, as an undifferentiated whole rather than continents made up of different countries.[21] In spite of this, there are commonalities in the needs of young people in developing countries: access to education is often limited and attendance at school may not be mandatory, common, or consistent; levels of literacy are lower than in industrialized countries; young people may have increased economic and familial responsibilities from a younger age; and most importantly, young people are more likely to be living in or vulnerable to poverty. Young people in poverty and most especially those living on the street are more likely to experience sexual coercion or rape and to engage in sex for their economic survival.[4] For the purposes of this chapter, then, bearing in mind the aforementioned caveats, we will divide our discussion of interventions for young people in developing countries into three geographic sections: (1) Africa, (2) South and South East Asia, and (3) Central, Southern America, and the Caribbean.

Africa

Young people in sub-Saharan Africa have been most severely impacted by the AIDS epidemic. In some cities, HIV prevalence among young pregnant women, for example, is as high as 30%.[22] Although sexual behavior varies between and within countries on the African continent, there is clear evidence that young people in Africa, like young people all over the world, engage in sexual activity earlier than many adults acknowledge.[1] In Guinea Bissau, for example, 50% of males

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aged between 15 and 19 years reported having sex in the previous year. In Malawi, 56% of 300 young girls surveyed reported being sexually active, and of these 56% reported having had sex prior to the onset of the menarche.[17] Economic necessity also means that young people are more likely to engage in sex work. In Malawi, two thirds of 168 female adolescents recently surveyed reported having sexual intercourse in exchange for gifts or money, while at the University of Calabar in Nigeria, nearly 15% of women studying said they engaged in commercial sex to pay for their education.[17]

As in all of the developing world, young women in Africa are at particular risk of HIV infection. While up to 60% of all new HIV infections are among 15- to 24-year-olds, females outnumber males by a ratio of two to one.[17] There is considerable evidence to suggest that women have increased physiological risk of HIV infection.[17] In addition, gender relations that are characterized by an unequal balance of power mean that women are less likely to control sexual decision making.[17] The partners and husbands of adolescent girls are often men considerably older than themselves, more sexually experienced, and hence more likely to be infected with HIV.[1]

Although many young people in Africa have accurate information about HIV and AIDS, economic disadvantage can obscure concerns about the epidemic. In 1993, focus group discussions held throughout Zimbabwe with out-of-school youth aged between 12 and 20 were conducted by the Ministry of Education and Culture. Young people expressed frustration with the lack of opportunities to earn money and acquire the respect from parents and others that is afforded through having employment and a salary. In fact, these issues overshadowed any concern about HIV infection.[23]

Large numbers of young people in Africa do not have access to education. For example, 45% of youth aged between 11 and 19 years in Zimbabwe are out of school.[23] This means that programs designed to prevent HIV infection need to also target out-of-school youth and to take into account the low levels of literacy that are common among some people in parts of Africa.

Responses to HIV infection in Africa have varied enormously. Some of these responses have consisted of attempts to encourage young people to remain sexually abstinent, others to provide young people with access to information and condoms as well as an opportunity to participate in a program.[1] In some countries, sex education is controversial and adults have attempted to restrict information about sex available to young people for fear of a deterioration in moral values.[24] In spite of local taboos that surround talking openly to young people about sex, a variety of prevention programs have taken place, with varying degrees of success. These might be characterized as follows: peer education programs; school-based programs; programs for out-of school youth; programs for youth at particular risk, such as those living in the streets and with refugee status; and programs using the mass media and other media such as comic strips.

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Combining peer education with increased access to condoms has had some success in Cameroon. Initiated in 1993, 60 peer health educators were trained to work with university students ~~in Cameroon~~. In addition, outlets for condoms on campus were increased by 50%. Peer educators reached a total of 1600 students, and 6 months after the program began condom sales on campus had increased by 30%. The program coordinators noted that increasing numbers of students both requested information through the peer education program and applied to become peer educators themselves.[25]

However, while the intervention led to increased sales and possibly use of condoms, variable access to and acceptability of condoms within Cameroon remain barriers to increased condom use. In Zimbabwe, young people participating in focus group interviews observed that condom use is an effective strategy for preventing HIV infection, but it is not realistic because of both poor availability and negative associations with sex work, promiscuity and mistrust.[23] This suggests that distribution and increased accessibility are not enough to promote consistent condom use.

Peer education ~~aimed for~~ university students has also taken place in Nigeria.[26] After a preintervention phase involving the collection of qualitative and quantitative data, a Campus Women's Alliance against AIDS (CWA) was formed at the University of Ibadan with the aim of increasing knowledge and modifying risky behavior. A 2-day training course was held for 30 self-selected peer educators. A variety of CWA activities, including distribution of information and materials, sponsorship of talks, and video and film screenings, were planned for a 12-week period. Of those attending the CWA events, 73% of females and 60% of males reported that the activities were either very or quite effective at raising awareness and the importance of abstinence or monogamy. As in many peer education programs, the most important impact was on the peer educators themselves, who were observed to be very enthusiastic; perhaps the greatest measure of success is that the CWA is now an ongoing program run voluntarily by those initially trained.

Although the peer programs in Cameroon and Nigeria have enjoyed some success, it must be noted that university students are one of the easier populations of young people to access. First, high levels of education and literacy mean that it is possible to use a wide range of materials and methods in order to communicate messages about HIV infection. Second, university attendance is often accompanied by an affluent background, thus decreasing, although not eliminating entirely, the numbers of young people having to engage in risky practice for economic gain. Third, university students represent an older adolescent population with whom it is possible to talk more frankly about HIV-related issues.

More challenging peer work has been conducted in Uganda with youth who attend school and those who do not in 30 villages in the Rakai District. Four hundred and seventy original respondents were interviewed in June 1994. Highly significant increases in correct knowledge about transmission of HIV and use of

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condoms was found. Peer educators and peer education contacts were reported to be six and five times more likely, respectively, to use a condom than those who had no exposure.[27]

A randomized controlled trial was used to evaluate the impact of a school-based AIDS education program with high school students in a socially disadvantaged African township of Cape Town, South Africa. The program was the culmination of a process of consultation with teachers and students. Teachers were trained in HIV-prevention information and the use of participatory methods. Over a 2-week period, an intense, high-profile course was delivered throughout the school. Various educational methods and channels, including structured information dissemination, group discussions, integration of AIDS content in the language curriculum, and role playing, were used to promote AIDS-related messages. To assess the impact of the program, students completed self-report questionnaires before and after the intervention. Students were compared with those in a school with similar demographic characteristics but in which no specific AIDS education was provided. At baseline, students at both schools had similar levels of HIV knowledge, but following the program students in the intervention school had significantly higher scores on most knowledge items. The program also sought to promote more positive attitudes toward people living with AIDS; at baseline acceptance of people with AIDS was very low in both schools. Small increases in acceptance were reported in the intervention school. In the intervention school, an increase in the number of students who felt personally vulnerable to HIV infection also was noted.

Although the intervention had a favorable impact on knowledge and some attitudes, the impact on behavioral intentions was disappointing. There was a small but statistically insignificant change in students' intentions to use condoms following the program and negative attitudes toward condoms were still common. One unintentional and undesirable impact of the intervention was that a rumor began in the community that the reason for the intervention in one school and not others was because teachers and pupils at the intervention school were infected with HIV. This caused teachers and pupils a great deal of distress. This raises important questions about the care that must be taken when planning interventions and using randomized controlled trials. The researchers who evaluated the project felt that the rumor most likely affected the overall impact of the program and resulted in high levels of denial of vulnerability to HIV infection.[28]

In Tanzania, an innovative school-based program called *Ngao* (shield) was designed to reduce risks of infection and improve attitudes toward people living with AIDS. A randomized controlled trial was employed to evaluate program effectiveness. Implemented for about 20 hr over a period of 2 to 3 months, the program consisted of factual information disseminated by teachers, posters, songs, poetry, and performances for younger pupils generated by the students. In addition to working with students, panel discussions were held with elders and parents.

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However, national guidelines from the Ministry of Education prevented teachers from explicitly addressing condom use with this age group.

After implementation of the *Ngao* program, pupils from intervention schools reported significant increases in exposure to AIDS information and discussion of HIV/AIDS, in AIDS-related knowledge, and more positive attitudes to people living with AIDS, relative to comparison schools. Six months after the intervention, pupils from the intervention schools reported being exposed to and discussing AIDS-related information far more frequently than did pupils from comparison schools, a significant increase in knowledge and significantly more positive attitudes to people with AIDS.[29] The program designers conclude that work with this age group, although still unusual in Tanzania, is both possible and fruitful.

An interesting school-based intervention that raises pertinent issues for intervention development has taken place in South Africa. In Africa, as in other regions, values and cultural context are crucial considerations in designing programs. What is more, traditional values about how, where, and between whom sexual activity is acceptable may be in conflict with the real practices of both young and older people. These factors are of particular importance when working with school-based populations, since parents, teachers, community, and government may be particularly sensitive about the type of work that takes place with young people in school. In Cape Town, a team of social scientists, health educators, and educationalists developed a program for high school students drawn from a largely Islamic community.[30] Before the intervention, research revealed that although sex outside of marriage is heavily sanctioned by the community, young people were having sexual relationships. For teachers, however, it was important to heed religion and respect and uphold values. Although teachers showed enthusiasm for development of a program, they faced conflict in their role as Muslims—a role that encompasses both the need to give religious guidance and counseling and the desire to protect students. The teachers clearly felt conflicted over the different needs and requirements of all various stakeholders in AIDS education: parents, students, and religious and other community leaders. Through careful negotiation, the researchers were able to agree with teachers that value clarification should not be prescriptive for young people. Charts illustrating condom use were withdrawn and the amount of information on condoms reduced. This project demonstrates the need to work with the community and to help those who are delivering programs to young people clarify first their own values about HIV-related issues.

Interventions targeting school-based populations are clearly popular in Africa, although large numbers of young people and some of the most vulnerable young people do not attend school. Some researchers and health promoters have suggested that through working with schools, it may be possible to reach the wider community and out-of-school youth, who may be impacted by the messages about safer sex disseminated to their school-attending peers.[31]

Reaching young people living in refugee camps or even more precarious situations also will be challenging in some parts of Africa. War and civil unrest

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clearly have an important impact on the AIDS epidemic. Particularly innovative work, which has attempted to operate simultaneously on individualistic, community, and structural levels, has taken place with Rwandans, including adolescents, living in refugee camps in Tanzania.[32] The project recognized that the conditions of refugee life greatly increase the risk of HIV infection: the destruction of families, deterioration of former social structures and mores, loss of homes and income, overburdened health services, overcrowding, and an increase in the commercial sex trade. Most at risk are women and adolescent refugees who are vulnerable to coercive sex and rape. With particular reference to young people, cultural barriers posed a special challenge. In Rwanda, sex is rarely discussed with young people. Meetings with religious and other community leaders in the camps allowed project staff to develop culturally acceptable and appropriate messages about HIV infection. These include strategies that focus on protecting future fertility in a context where the ability to bear children has great social significance.

Reaching young people in this refugee environment where there were no schools presented another hurdle, but through sporting events, which draw thousands of refugees, the young, most particularly young men, could be targeted. In intermissions, traditional dancers were recruited to incorporate messages about HIV into their performances. At the same time, condoms were distributed and megaphones used to broadcast messages and songs. In refugee situations, young women are at specially heightened risk, since they do not even have the limited means to earn money that are available to boys. Consequently, they may be coerced into exchanging sex for money, gifts, or protection. This project is developing income-generating activities to enable them to earn some money without endangering themselves. In addition, a series of "adolescent health days" have been organized to demystify health services and encourage young people to come forward for STD treatment. The first such event drew 700 people to one clinic alone.

Finally, a number of innovative and attractive comic books have been developed for young people in Africa. Although pre- and posttesting to determine acceptability among young people has taken place, the impact of such resources has rarely been formally evaluated. One study has revealed that even a single reading of a comic book, which has been piloted to determine a high level of acceptability among young people, can be associated with improved knowledge of HIV infection and correct condom use.[33]

Central and Southern America and the Caribbean

In Latin America, the average age for first intercourse has been estimated at 15 years of age for boys and 17 years for girls.[34] In particular contexts and areas, the age of sexual debut may be earlier. In Mexico, for example, it is estimated that almost half of all teenagers are sexually active, while one in six of all live births is to a mother aged 15 to 19 years.[35] In a Brazilian school-based study, 36% of

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females reported having had intercourse by the time they reached 13 years.[17] Not surprisingly, the incidence of STDs and prevalence of HIV infection among young people in this region is high: the Caribbean Epidemiology Center reports that young people aged 15 to 29 years now account for 50% of all cases of AIDS.[14]

Social attitudes toward sexual activity for boys and girls vary radically in many parts of the region: While sexual activity is often considered acceptable for young men, it is sanctioned in young women. In Guatemala, for example, it is commonly believed young men must have sex to enjoy good mental and physical health.[36] Here, the high social value afforded to virginity for girls, in conjunction with a very different set of values for boys, may in itself lead to higher risks of HIV infection. In Brazil and Guatemala, cultures where virginity in unmarried women is highly valued, young people interviewed in a number of studies reported that anal sex is often used as a means to protect a girl's virginity.[7]

As in most parts of the world, young women in Central and Southern America and the Caribbean have less power and control in sexual relationships. Gender stereotypes too have an important impact on the epidemic. Research in Mexico has suggested that traditional stereotypes about maleness affect the level of responsibility that young men take for using condoms, as well as promote the idea that one partner may be appropriate for young women, but that in order to be manly a young man must have several partners at one time.[37] Young women also often find it more difficult to suggest the use of condoms since they fear that they may be considered too sexually experienced, or that the man with whom they are having a relationship may reject them.

Economic need in this region means that young people are at increased risk of HIV infection. In some areas, very large number of young people live on the streets. In Brazil, for example, estimates suggest that 7 million young people are living on the streets, with HIV seroprevalence rates ranging from 1.5 to 7.5%.[38] Such young people are highly vulnerable to rape, coercive sex, and the economic need to exchange sex for money or goods. The high prevalence of injecting drug use on the streets also presents another risk of HIV infection for these young people.[38] Clearly, young people who are concentrating on meeting their immediate economic needs, and facing daily threats to their health and well-being, such as those living on the streets, are difficult to reach with messages about a disease that may or may not affect them some time in the future.

Responses to HIV infection in the region have varied, but some extremely innovative work with young people has been conducted in Central and South America and in the Caribbean. Perhaps more than in other regions, interventions have focused on the development of sexual health, rather than on narrow conceptions of disease prevention. Much of the work with young people here has been characterized by an openness that is rarely found in other contexts; indeed, this region has led the way for work with young people who are marginalized by society, such as young people who live in the streets and gay, bisexual, and other young people who have same-gender sexual relations.

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In Belo Horizonte, Brazil, an outreach intervention has been ongoing since 1992.[39] Youths living on the streets have been exposed to a series of communication materials including videos and comic books. A preintervention survey of 329 youths was conducted as well as two phases of follow-up. Postintervention, the perceived risk of HIV infection rose from 33 to 95% in those surveyed. Overall drug use decreased in the 90 days prior to the follow-up survey, and 70% of drug users reported needle cleaning in follow-up surveys compared to none in the preintervention survey. Although condom use increased by 32% among those having sex with adult males, no change was reported in condom use with peers.

The Pegaçao Program, initiated in 1989, set out to reach young male sex workers aged 11 to 23 in Rio de Janeiro.[40] Outreach work, often conducted in cafes and bars, concentrated their efforts on listening to all the concerns expressed by young men, not only those that related to their sexual health. This was important in developing a relationship with the young men, since they did not feel AIDS was more likely to kill them than hunger or violence from the police and clients. Conversations also revealed important information, such as the fact that many of the young men did not have contact with a gay community and so were unlikely to be reached through that channel of information. Few of the young men contacted were able to read, and they rarely accessed health services, thereby closing more channels through which they might see or hear HIV-related prevention messages. Evaluations demonstrated that whereas at baseline only 15% of the young men reported that they always used a condom, 6 months into the project the figure had increased to 65% and 1 year later to 80%. The associated decrease in STD levels from 75 to 32% in the first 6 months suggests that the young men were engaging in safer sex.[40]

Pegação

In Recife, one of Brazil's poorest cities, the Brazilian Center for Children and Adolescents is involved in work to defend the rights of girls, especially those living in the streets, brothels, and slums. Two projects have been developed for HIV-related work: the Casa de Passagem (Passage House), which provides schooling, support, food, and access to health care for girls aged 7 to 17. Here, the girls are given space to talk about their lives and problems and are supported in a nonjudgmental way, which has given rise to some criticism from those in Brazilian society who feel threatened by the lifestyle of street girls. As with the Pegaçao Program, asserting self-worth and valuing the self-perceived needs of the street girls was given precedence over work on sexual health, since this provides a foundation for helping young people to protect themselves from risks of HIV infection. Additionally a follow-up program has been developed that trains graduates of the Casa de Passagem to work with peers. UNICEF is now documenting the progress of the program. Both these related programs are characterized by the promotion of self-esteem and empowerment.[41]

Pegação

As a way of incorporating potentially the most marginalized of street youth in Rio De Janeiro, a drop-in center street for youth included a special day each week for young transvestites.[38] Posters of young transvestites were displayed, which

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attracted young people who realized that they could come to the center without fear of approbation.

Globally, few programs focus on the positive aspects of sexual relationships, yet clearly it is not realistic to discuss the consequences and implications of sexual activity without discussing the pleasurable and meaningful nature of sexuality. In São Paulo State in Brazil, a group of young people aged 15 to 20 were trained to work in their communities for AIDS prevention. The training program included discussion of beliefs, values, prejudices, behaviors, knowledge, prevention, sexuality, eroticism, safer sex, and HIV and testing. As a result, young people together with program organizers have developed a program that actively discusses pleasure and responsibility.[42]

In the Caribbean, young people aged 8 to 19 have developed a musical review about HIV infection and sexually transmitted diseases called "Vibes in a World of Sexuality." Originally developed in Jamaica, the review has now reached 50,000 people in five different Caribbean countries. Performances have taken place in 60 Jamaican schools, youth clubs, communities, and churches. Pre- and postperformance evaluation has shown a 20% increase in correct knowledge about STDs and HIV infection. Young people have shown their interest by staying behind to ask questions, and the performers have received letters from parents thanking them for helping them to begin talking with their children about sex.[38]

South and South-East Asia

The WHO predicts that if effective HIV prevention programs are not rapidly developed and disseminated in Asia, it will overtake Africa by the end of the decade in terms of numbers of newly infected people each year.[43] To date, most of the reported incidence of HIV infection has occurred in India and Thailand, but numbers of infections are rising in other countries.[44] Although less is known about the sexual experience of young people living in Asia than in other regions, estimates suggest that in some countries 70% of young people have had sex by the age of 17.[45] This clearly places young people in Asia at risk of HIV infection.

In many countries in South and Southeast Asia, it is usual for young people, most particularly young women, to marry at an early age. In the case of young women, marriage to an older and more sexually experienced man is usual. Rather than protecting young women from the risk of HIV infection, this kind of early marriage may increase their risk. It is important to recognize that many young women who have HIV infection have had only one sexual partner: their husband.[46]

As in many parts of the world, women in South and Southeast Asia often have limited power to negotiate about sex with their partners. Women participating in focus group discussions in Bombay have commented that because of economic dependence on their husbands and fear of physical violence, they must quietly submit to their husband's sexual demands whatever they may be.[47]

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Stereotypical gender roles also place women at risk in cultures where having "too much" knowledge about sex can stigmatize young women, making it very difficult to ask that condoms be used. Studies in Thailand have revealed that young women must pretend not to know anything about sex for fear that people will think badly of them.[48]

In many Asian countries, much of the sex outside of marriage involves payment or the exchange of goods. Young men may have their first sexual encounter with a sex worker. One study in Thailand, for example, found that 44% of Thai men had their first sexual experience with a sex worker when they were around 18 years old.[43] Similarly, some young women may find themselves drawn into sex work, usually as a result of poverty and sometimes to pay off family debts. The Chiang Mai Hill Tribes Welfare and Development Center in Thailand has estimated that one in five girls from that area work as sex workers, some of whom have been sold or given into prostitution by family members.[43]

Use of drugs may also place young people in this region at risk of HIV infection. Patterns of drug use in Asia have changed in recent years: While older drug users have tended to smoke opium, younger people are more likely to inject.[43] If needles are shared, this can present another risk of HIV infection that needs to be addressed.

As in many other parts of the world, young people in South and Southeast Asia have the increased risks of HIV infection commonly associated with poverty, unequal life chances, urbanization and migration, rigid gender roles, and poor access to education and health services. Many young people in South and Southeast Asia, especially girls, do not attend school. In addition, girls often have increased familial responsibilities and are based primarily at home, making them a difficult group to reach.[7]

One intervention in India has attempted to reach such young women in low-income communities in Bombay.[49] In the preintervention period, information about daily life, friendships, level of knowledge about sex, sexual activity, and health problems was collected. A baseline survey was conducted on a sample of 85 adolescent girls to determine their knowledge, attitudes, beliefs, and practices with regard to puberty, reproduction, marriage, sex, STDs, and AIDS. In developing the intervention, it was clear from the outset that community and parental support would be crucial, since sexual matters are not ordinarily discussed with adolescent girls in this community. In addition, the girls were found to have heavy workloads, necessitating support services, such as child care for the younger siblings for whom the girls have responsibility. In addition, it was clear that for the intervention to be effective, it had to look at issues related to women's status and rights as well as STD/HIV infection.

The intervention developed looked at issues around puberty, human sexuality, sexual exploitation and harassment, the human immune system and health problems (with specific reference to HIV and STDs), women and AIDS, and the

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development of a plan of action to protect oneself from HIV infection. Methods included lectures, storytelling, role playing, group discussion, puppet shows, and games. In each session, emphasis was placed on building the girls' self-confidence by encouraging them to participate and express themselves. Small incentives such as door prizes and refreshments were offered to attract attendance. The average age of the girls attending the program was 14 years. Simultaneously, an AIDS awareness program was implemented in the community. This included meetings with different groups such as community leaders, parents, young men, and adolescent boys.

Observations of the sessions suggested that the girls became more vocal and self-confident as the sessions progressed. The level of participation, in fact, made it impossible to cover the content of the course in six sessions, so a seventh had to be added. There was a great demand for the intervention to continue beyond the seventh session, and suggestions were made by the girls on how to cut costs (such as eliminating door prizes and refreshments). A follow-up survey of the participants indicated that a higher proportion of the girls demonstrated correct knowledge than in the baseline survey. Eighty-three percent reported that they had talked to others about a range of topics covered in the intervention, with HIV/AIDS being discussed by the highest number (62%).

In the Philippines, researchers have observed that most of the information that young people receive about AIDS comes from the mass media and health care providers. In many parts of the world this has resulted in high levels of knowledge but continued risk behaviors. A model for a school-based intervention for high schoolers has been developed and tested in Manila.[50] Four demographically similar high schools in a semiurban district were selected for a randomized controlled trial. An AIDS prevention program was implemented by high school teachers, local AIDS experts, social scientists, and health educators to dispel misconceptions, provide accurate information, foster positive attitudes toward people living with AIDS, and develop skills aimed at clarifying values. After the implementation, statistically significant effects favoring the intervention group were observed in knowledge and attitudes toward people with AIDS, but no statistically significant differences were observed in intended HIV preventive behavior, although some delay to intended onset of sexual activity was recorded. Efforts are continuing to develop a program that will effect change in behaviors.

Increasing numbers of young people in South and Southeast Asia are moving to cities to seek employment. Such young people find themselves removed from the protection and traditional expectations and values of the family and are exposed to urban culture as well as often insecure conditions of work: This places young migratory workers at high risk of HIV infection. One intervention aimed at young female factory workers in Thailand has revealed that prior to their exposure to AIDS education, the young workers did not perceive themselves at risk because they identified HIV infection with sex workers and their clients and drug users.[43]

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The young women also reported that condom use is inappropriate in a love relationship. In face-to-face interviews a number of the young women reported being sexually active, sometimes with more than one partner. The program designers prepared educational materials based on their preintervention research with the young women. Noting that the women enjoyed romantic dramas on television and in magazines, a romantic novel was written about a factory worker called Lamyai. Lamyai finds out she is HIV positive and tells her sister that she will work in the factory to support her family until she becomes sick. The young women responded positively to the story and reported that they cried when they read it and felt as if they knew Lamyai personally.

In addition to the production of educational materials, peer leaders were trained to use educational materials with others. Peer facilitators gave young women the chance to practice different kinds of negotiation with hypothetical partners as well as undertaking sex and HIV-related education. All participants were awarded certificates to say they had completed an AIDS education program; these were highly valued and the young women reported that having the certificates enabled them to discuss issues with others. Another indication of the success and acceptance of the program is that they used their own money to photocopy materials to take back to their villages.

Findings from the collection of qualitative and quantitative data suggest that this project improved young women's communication skills and self-confidence, increased their perception of risk, and strengthened their intention to prevent AIDS and help others. Peer education proved the most effective means by which to influence beliefs and intentions to change behavior. The young women enrolled in the peer leader group demonstrated the most significant improvements in knowledge and enabling skills and the largest increase in perceived vulnerability to HIV infection. As a result of the program, the young women expressed more acceptance and higher regard for women who prevented AIDS by negotiating condom use: "it is not shameful now; it is up-to-date."[51]

CRITICAL REVIEW OF METHODS USED

In this chapter we have discussed a wide variety of interventions, some of which have been systematically evaluated and others that have not. The interventions reviewed can be divided into two types: those which have a strong research orientation, for example, the school-based randomized controlled trial carried out in Cape Town,[28] and those in which research is not a priority, such as the work carried out with girls in Recife, Brazil.[41] Some of the interventions described were motivated by the need to systematically evaluate program impact through randomized controlled trials and quasi-experimental methods. Other projects arose from the need to take action immediately with young people who were facing

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particular risk of HIV infection. Although the latter types of projects are often subjected to some kind of evaluation, the process of health promotion is more frequently given precedence over research issues.

All interventions with young people need to evaluate the impact that they are having, especially when increasingly health promoters are asked not only to demonstrate that their interventions are effective, but that they offer good value for money.[15] However, work in HIV/AIDS prevention presents those embarking on evaluation with a difficult set of research issues. First, whereas in other fields of health promotion most interventions use biological indicators to evaluate progress, accurate baseline data for HIV/AIDS in the developing world are often unavailable or difficult to obtain.[52] Where accurate data about the prevalence of AIDS do exist, they reflect infections that may have occurred 10 or more years ago, and thus are unable to tell us much about recent changes in behavior. Incidence data, which would be useful for evaluating the impact of interventions to prevent HIV infection, are rarely available and expensive to collect.[52] In the absence of such data, most researchers have attempted to gather information about changes in people's sexual behavior. Because sexual behavior among young people may be prescribed or taboo, it is hard to ensure the validity of data. Even if we can assume that reliable and valid information about behavior change has been collected, the process of behavior change itself generates another concern. While interventions may be of short duration, behavior change can and does take many years to occur, as evidenced in earlier work on family planning.[52]

Notwithstanding the difficulties in evaluating HIV/AIDS prevention, a number of projects presented here have built-in methods of evaluation. There are a variety of ways in which evaluation can take place, and it would be unfortunate if one or two methods were to be given precedence over all others. Recently, in HIV/AIDS prevention work an increasing number of practitioners have employed randomized controlled trials to test whether or not the intervention is successful and have on occasion advocated this method as superior to all others.[19] However, this method has a number of difficulties associated with it, not the least of which are cost and the ethical problems that it can pose. The study in South Africa discussed in this chapter highlights some of the problems that can occur when one population is singled out from others around it for intervention. Research effects of this kind may in fact influence program outcomes as much as the prevention program itself.

Qualitative methods, such as observation, focus group interviews, and face-to-face interviews, can provide rich sources of data. The evaluation of young women in Bombay presented here reveals very clearly that the intervention has a high level of acceptance among the participants; similarly, the information that young female workers in Thailand reproduced educational materials using their own money tells us a lot about the success of that particular project. Observation, when carried out rigorously and systematically, can provide useful clues as to what is taking place in health promotion. Like many programs worldwide, the US

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Government's AIDS Control and Prevention projects (AIDSCAP) recommends the use of multiple methods of evaluation for projects in developing (and industrialized) countries: "information from these sources can then be triangulated to gain as complete a picture as possible of what is happening in the field."[52]

It is important to bear in mind the strengths and limitations of different kinds of data when making decisions selecting or implementing different type of HIV and AIDS-related health promotion programs. By itself, no approach can answer all the questions about the appropriateness and effectiveness of different interventions. However, by bringing together data collected in different ways, it may be possible to distinguish some of the more promising approaches to HIV and AIDS-related health promotion from those that may be less promising.[15] It is also important to remember that the purpose of HIV prevention activities with young people is to help reduce the risk of HIV infection. This goal must take priority over other research concerns: for example, while it may be relatively easy to measure changes in HIV knowledge, it is now clear that projects that focus solely on imparting information about AIDS do not help young people reduce their risk of infection.[53] We must continue, then, to focus on what will assist young people most, rather than develop evaluation programs that focus on what is most measurable.

SUMMARY

A range of different interventions among young people has been described in this chapter. Some of the most interesting and possibly most effective ways of working, however, are those programs that are ongoing and not yet fully evaluated. Clearly there are some commonalities in the programs that are best received by young people and might be most effective. Further, adults working with young people in HIV prevention now have access to an increasing body of knowledge about what does and does not work, particularly with respect to changing knowledge and attitudes. Still, what is effective in terms of promoting behavioral change is not as apparent, because of a dearth of evaluations of intervention's effects on actual behavior, to the methods of measuring behavioral change with a reliance on self-reports of behavior rather than incidence of disease and to the fact that lasting behavior change is difficult to achieve and to monitor.

Despite considerable evidence from both industrialized and developing countries that increasing levels of knowledge about HIV and its transmission does not necessarily produce changes in behavior, many programs still place undue weight on that approach. This is evident in several of the programs reviewed here. Young people in the studies conducted by Kuhn *et al.*[28] and Aplasca *et al.*[50] demonstrated statistically significant improvements in levels of knowledge, but no corresponding changes in behavior or intended behavior. Asha Mohamud, Director of the

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International Center on Adolescent Fertility at the Center for Population, has pointed out that although HIV/AIDS prevention programs are engaging adolescents in many countries, too often they are just "throwing information at the young people."[52] While information about HIV and how it is and is not transmitted is clearly important, simply providing the basic facts about AIDS does not suffice to help young people protect themselves from infection.

Study findings from around the world show that there is a gap between young people's knowledge and behavior. Romer and Hornik[54] have shown that although 70–90% of the young respondents in 23 surveys conducted in North and Central America, Europe, African, and Asia knew how HIV is spread and how it is preventable, large proportions of young people who were sexually active were not using condoms and less than half those reporting condom use said that they did so consistently. Programs promoting the acquisition of specific skills and the development of social norms for healthy behavior have proven the most effective in reducing risk. In addition, education programs implemented to promote abstinence only have proven less effective than those offering a range of options in delaying the initiation of sexual risk behaviors. However, it should be noted that, like knowledge, skills alone may not be sufficient to help young people protect themselves against HIV infection. In many parts of the developing world, the social, economic, and political context within which young people live impact their ability to engage in HIV-protective behaviors. In several of the interventions described here, young people talked about the barriers generated by cultural factors and societal pressures that make it difficult for them to think about or act upon a health issue that may affect them in some years' time.

While peer education programs are currently very popular, the programs reviewed here appear to be most effective with those who are trained to be peer educators rather than those who participate as recipients of peer education. This may be because of the control that those trained as educators have over program design and content, delivery, and empowerment. In addition, peer educators are often self-selecting, which may indicate a preexisting degree of concern with HIV-related issues.

Perhaps most interesting of all is the success of programs that take an interest in all the very real concerns of young people living in precarious situations. A number of the programs enjoying success in Central and South America have a commitment to listening to the problems that young people themselves identify, whether or not these are perceived to be directly related to HIV infection. It is clear that young people in developing countries have a variety of very real difficulties to face in their daily lives, and that the threat of HIV infection is only one of these. Programs that afford young people an opportunity to think about and talk through the issues that impact their lives may enjoy the greatest level of success, given that HIV infection occurs within contexts that are broader than the spheres of sexuality and sexual behavior. Indeed, helping young people deal with pressing immediate

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concerns, such as the need to generate income, may play an important role in helping them to protect themselves from HIV infection.

A number of programs still face restrictions and taboos around talking with young people about certain issues to do with the prevention of HIV infection. In Tanzania and South Africa, for example, it was not possible to talk about condom use with young people in some schools. This occurs despite evidence that young people in Africa, like young people in many other parts of the world, engage in sex from a young age without using condoms, which are acknowledged to help prevent HIV infection. Such restrictions reflect the concerns of adults rather than the reality that young people experience. Sex education, and more recently HIV-related education, for young people has had to face a series of such hurdles. Yet evidence collected by the WHO, which summarizes 19 research studies, found that in no study was there evidence that sex education leads to earlier or increased sexual activity. Indeed, six of the studies found that sex education led to either a delay in the onset of sexual activity or to a decrease in overall sexual activity.[12] Programs that focus on the reality of young people's experience and use the needs of young people themselves as their starting point are more likely to bring about behaviors that help prevent HIV infection. As Hoffman and Futterman[9] have pointed out, to effect change in risk-related behavior, young people must be treated as genuine partners in dialogue and decision making.

FUTURE DIRECTIONS AND RECOMMENDATIONS FOR WORK WITH YOUNG PEOPLE IN DEVELOPING COUNTRIES

As the HIV epidemic unfolds and as new areas of the world are touched by the tragedy of AIDS, prevention efforts involving young people must continue to be given the priority they deserve. This is not because young people are more needing of support than others; all groups have equal claim to the information and resources important to protecting themselves and their sexual partners from HIV-related risks. They deserve it since by working with those who are young, we may be able to significantly alter the future course of the epidemic.

As the evidence reviewed in this chapter shows, we already have strong indications of what styles of HIV-related health promotion work best with young people and what do not. We know, for example, that programs that offer young people a range of choices about sexual health are more effective than those which focus solely on abstinence.[12] We know too that program effectiveness requires an acceptance of young people's perspectives and needs, as well as their equal participation in learning.[9] And we know that programs must do more than attempt to persuade young people to adopt safer sex and safer drug use, structural and environmental circumstances must be enabling and supportive of such behavior change, including condom use.[5]

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Past successes and failures in HIV-related health promotion enable us to identify a series of principles that underpin successful work. These include:

- Recognizing the diversity of young people and their needs rather than beginning from stereotypes and possible inaccurate presuppositions.
- Beginning work with the expressed needs of young people themselves, and encouraging youth participation in project design and implementation.
- Working in a climate of openness that acknowledges the realities that young people face, rather than the preferences and prejudices of adults.
- Providing opportunities to address issues relating to gender, social status, and sexuality in work to promote young people's sexual and reproductive health.
- Undertaking more work with young men to enable them to think about their role in relation to both their own sexual health and that of their partners, as well as improving programs targeting young women.
- Examining the positive aspects of sexual health including eroticism and pleasure as well as the more negative aspects such as unwanted pregnancy and sexually transmitted disease.
- Promoting greater awareness of structural issues affecting sexual and reproductive decision making, including rights and protection for young people, as well as improved access to education and health services.

With greater attention to these key principles in program design and implementation, and with continuing research to identify other key components of success, the new millennium may yet see the kinds of progress in HIV prevention that generations, both past and present, have hoped for and deserve. But such goals cannot be accomplished without the will of politicians and policymakers, many of whom need to be more realistic in their appreciation of young people and their needs. We need swiftly to jettison our desire to proscribe and prescribe, and to substitute a respect for young people and their multifaceted needs. We need too the courage to set in place a broad agenda for sexual risk reduction, that is, an agenda that recognizes that there is no one style of risk reduction appropriate for all, but a range of options from which young people, like adults, could one day be free to choose.

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Addiction (1997) 92(7), 813–820

PRACTICAL BUSINESS OF TREATMENT

Reaching out beyond the hills: HIV prevention among injecting drug users in Manipur, India

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Abstract

Outreach interventions using ex-IDUs to inform and educate their peers about HIV/AIDS prevention measures have been found to be effective in the United States and other developed countries. While HIV/AIDS prevention programmes targeting IDUs have also been implemented in a number of developing countries, very little information is available on the process of implementation of these programmes. This paper attempts to document some of this knowledge by describing the implementation process of an outreach intervention targeting IDUs in a small town—Churachandpur—with high injection drug use and high HIV infection rates, in the north-eastern state of Manipur. The paper describes the barriers encountered in implementing the outreach and how these barriers were minimized. In conclusion, the paper makes the case for targeting outreach to the larger community before targeting the IDUs.

Introduction

A number of different strategies have been used to prevent HIV/AIDS among injecting drug users (IDU). Among these, outreach interventions, using IDUs to inform and educate their peers about HIV/AIDS prevention measures, have been particularly effective (Abdul-Quader *et al.*, 1990, 1992; Neaigus *et al.*, 1990; Watters *et al.*, 1990; CDC, 1990). Through outreach programmes drug users have been informed of the risks of HIV transmission; provided with both bleach for decontaminating needles and syringes and condoms for safer sex; and in some cases, counselled on risk reduction measures. Typically, these programmes have been implemented in developed countries.

The number of injecting drug users is growing rapidly in many developing countries, bringing in its wake a substantial increase in HIV infection rates among these groups (Choopanya *et al.*, 1991; Sarkar *et al.*, 1991, 1993; Suarn & Crofts, 1993; Wodak, Crofts & Fisher, 1993; Htoon *et al.*, 1994; Stimson 1994). Although HIV/AIDS prevention programmes targeting IDUs have been initiated in a number of these countries (Argentina, Brazil, India, Malaysia, Nepal and Vietnam) many others remain without any outreach programme or other interventions.

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Submitted 17th June 1996; initial review completed 26th September 1996; final version accepted 15th November 1996.

0965–2140/97/070813–08 $9.50 © Society for the Study of Addiction to Alcohol and Other Drugs

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Clearly, therefore, there is a need to initiate interventions targeting IDUS in many other developing countries. There is also a need to document and disseminate the experiences of implementing interventions targeting IDUs. In an attempt to document the knowledge and experiences gained from existing programmes, we describe in this paper the implementation process of an outreach intervention targeting IDUs in a small town—Churachandpur—in the north-eastern state of Manipur, India.

The goal of this intervention was to assess the feasibility of implementing an outreach intervention targeting IDUs in a developing country setting with high drug use and high HIV prevalence, and to assess the efficacy of the intervention in reducing injection and sexual risk among IDUs. In this paper we describe the process of implementation of the programmes as well the barriers encountered both at community and individual levels in implementing the outreach and how these barriers were minimized. While data collected through periodic cross-sectional surveys indicate that the intervention has been making an impact in terms of HIV/AIDS risk reduction, the paper, however, does not report on risk reduction measures initiated by the drug users. It also does not make any attempt to examine the efficacy of the intervention in reducing risks for HIV/AIDS transmission. Discussion on risk reduction measures and impact of the intervention are beyond the scope of this paper.

Background

Churachandpur, also known as Lamka, is a small town (37 000) nestling in the hills of north-east India. It is 66 km from Imphal, the state capital; communication facilities are poor. There are nine major ethnic groups in Churachandpur and as many dialects. Christianity is the dominant religion. In spite of this diverse ethnicity, the different dialects are widely understood and the groups share a common way of life. Economic underdevelopment has meant that the community has retained its agrarian way of life, where women work along with men. Most live in extended families; the church and community leaders have a major influence in the community. Unemployment is very high. The town has a heavy military presence due to the underground political groups in the area which are engaged in armed struggle for self-rule.

In Churachandpur, heroin injection began in the early 1980s. Most of the heroin came from Myanmar. There are currently estimated to be around 600–800 IDUs in Churachandpur (Sarkar *et al.*, 1991). The town's six drug treatment centres, which are run by voluntary workers, ex-users and doctors, use 'Spiritual' and Twelve-Step treatment programmes. No maintenance treatment is available, abstinence from drugs being the only behavioural goal. Some IDUs have shifted to injecting dextropropoxyphane, which is cheap and easily available. The number of new dextropropoxyphane injectors continues to grow.

Over 80% of the IDUs in Manipur are estimated to be HIV-positive (ICMR Report 1992–95). One per cent of the antenatal mothers screened in maternity clinics have also been found to be HIV-positive (ICMR Report, 1992–95). Mother-to-child transmission in the state has also been documented (Panda *et al.*, 1994).

Implementation of the outreach project

The major objective of the project was to assess the feasibility of implementing an intervention targeting IDUs. Since outreach to IDUs is dependent on a supportive community, it was necessary to first create a caring environment to ensure that IDUs could easily be reached and provided with risk reduction information and materials. Thus, before reaching the drug users it was essential to educate the community at large. The process of outreach to the law enforcement authorities, the church and the community at large is described below.

Outreach to the non-IDU community

Support from the police and the law enforcement authority

To facilitate implementation of the intervention, an advisory committee was set up with the local district commissioner as the chairperson. The committee members included local leaders, the police commissioner, a number of church leaders and some government health professionals.

As previously stated, due to the existing law and order situation there was a significant military presence in Manipur. The police had been very active in targeting the IDUs, regularly

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harassing them and often arresting them if they were found in possession of needles and syringes. The advisory committee interacted with the local law enforcement authorities in an effort to minimize police harassment and thus create a more supportive environment in which to conduct the outreach.

A number of advocacy meetings were held with the police chief. At these meetings, the senior project staff explained the rationale for reaching IDUs—prevention of HIV/AIDS in the community—and the need for support from the police. These meetings generated positive results: none of the outreach workers was arrested and/or harassed by the police, even when they were found in drug dealers' homes and places where drug users congregated to provide information and risk reduction materials. This advocacy also facilitated data collection from IDUs.

Reaching out to the church and community leaders

In Churachandpur, local church leaders influenced matters related not only to religion but also other non-religious aspects of life in the community. Drug use was considered anti-social as well as immoral and HIV/AIDS was considered to be a moral problem. There was no awareness of the public health implications of the disease.

Support from church leaders was essential in order to reach the drug users and provide them with risk reduction messages and materials. If the Church had interpreted HIV/AIDS prevention among IDUs as condoning and facilitating drug use, outreach would have been very difficult. The situation was delicate since the HIV/AIDS prevention information provided to community members was sometimes contrary to what the church preached.

A number of individual meetings were held with local church leaders to provide them with factual information on the HIV/AIDS situation in the community and to highlight the importance of HIV/AIDS prevention among IDUs. In addition, there were a number of group discussions with the church leaders to solicit their views about reaching drug users, about kinds of interventions that would be more appropriate in Churachandpur and what, according to them, were the barriers to HIV/AIDS prevention among drug users. The initial meetings resulted in a better understanding of the project among the church leaders as well as a better understanding of the community attitudes towards the drug users. These meetings continued even after the outreach to IDUs was implemented. While attitudes towards drug users did not change, since drug use was still considered to be antisocial and immoral, the importance of the prevention programme was understood and supported by the church leaders.

Reaching out in the community

In Churachandpur, the IDUs have strong family and friendship ties. Much of their risk behaviours have occurred within friendship circles. Family members perceived HIV/AIDS among the drug users as punishment resulting from unsocial behaviours. They often took the drug users to the police themselves; sometimes they suggested sending them to remote places. The families provided the link between the IDUs and the outside world, and their support was vital to reach the IDUs and provide HIV/AIDS risk reduction messages.

Families and friends were approached in an effort to raise awareness about HIV/AIDS in the community; to increase HIV risk perception; to create a supportive environment for the IDUs in which to practice safe behaviours; and to create social norms supportive of risk reduction by IDUs. This involved regularly visiting friends and family members of IDUs; providing them with HIV/AIDS prevention information; discussing with them the factors that would facilitate risk reduction by IDUs; and how they (friends and family members) could help the IDUs to practice safe behaviours.

The larger community also discriminated against the IDUs. The confidentiality and anonymity of HIV test results were not maintained and the IDUs did not receive appropriate health care support at local hospitals. Often when HIV test results were known, seropositive IDUs were discharged. Support at community level was improved through regular (monthly) meetings with local NGOs, health service professionals and hospital staff. A number of issues were discussed at these meetings. These were: HIV testing and counselling and the need for confidentiality, health care for HIV positive IDUs, and the support for HIV prevention activities among drug users.

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Outreach to IDUs

Outreach to IDUs was the next step in the process (outreach to the non-IDU community continued even after initiation of the IDU outreach). The steps taken in conducting outreach to IDUs are described below.

Recruitment of outreach workers

Outreach workers are the front-line soldiers in the fight against HIV/AIDS. They are the ones who go out in the street, make contacts with drug users and serve as educators, counsellors and leaders. It is important to select outreach workers who will be trusted by the IDUs.

Since Churachandpur is a multi-ethnic and multi-tribal town, it was important to have representation of its major ethnic groups. Of six outreach workers representing different ethnic and tribal groups, five had a history of injecting drugs. Their past history of drugs, the fact of their being a member of the community, and their ability to communicate in the local languages gave them the credibility to reach out to their friends with acceptable prevention messages and to build trust and rapport.

Training of outreach workers

The outreach workers were trained in: (a) basic medical facts and epidemiology about HIV/AIDS; (b) the importance of prevention of HIV/AIDS among IDUs and their partners; (c) HIV antibody testing issues; (d) prevention messages; (e) delivery of prevention messages; (f) risk of relapse and how to prevent this; (g) when and where to refer IDUs for drug treatment; and (h) safety and security in the streets. The training also focused on communication skills, so that interaction with the IDUs in the streets would take the form of social interaction and not lecturing. They were trained in completing daily monitoring proforma with practical exercises. A pre- and post-evaluation of the training was also done. The whole training exercise took 7 days. Once the basic training was completed the field supervisors accompanied them to the field for at least 2 weeks for observation, improving effectiveness and correction of any misinformation conveyed by the outreach workers.

Strategy of daily outreach

Before initiating the outreach, the town was divided into 24 localities including nearby rural areas. Through qualitative mapping, a number of areas were identified where the IDUs gathered daily either to collect drugs or to socialize. Various drug dealing places where much unsafe injecting took place, were also enumerated.

Outreach workers always travelled in pairs to ensure safety and prevent relapse. These workers visited the various localities following a flexible weekly schedule to ensure maximum coverage. They met the IDUs in the streets, in the areas where IDUs congregated and in the dealers' homes. On first contact, the nature of the project was explained to the IDU and he/she was guaranteed confidentiality. Prevention messages were delivered after a few contacts; the messages were hierarchical in nature, beginning with not using drugs, injecting drugs or sharing injection equipment, to cleaning adequately with bleach (which was demonstrated), avoiding multiple sex partners and regularly using condoms. The outreach workers distributed liquid household bleach in small plastic bottles along with cookers used for drug mixing; clean water in a water container; clean cotton to be used as a filter; and condoms. The bleach kit, containing all the above items, was designed by an injector.

At the beginning of this outreach effort, leaflets and stickers containing prevention messages were distributed to the IDUs. When the outreach team started distributing bleach kits and condoms it became easier to conduct outreach, since the materials were highly sought after. In the initial months, when bleach was largely unknown to the IDUs, instructions had to be given as to its use.

Within 1 year the project was able to reach more than 750 of the estimated 800 IDUs and distribute about 4000 bleach kits. The number of bleach bottles and condoms distributed to the IDUs indicated both the extent of the reach as well as the feasibility of implementing such a programme (Table 1).

Table 1. *Contacts made by the outreach team and distribution of risk reduction materials during the last 1.5 years*

Total number of contacts made with IDUs	5959
Number of bleach kits distributed	3930
Number of condoms distributed	4734

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Referral

In addition to providing information and risk reduction materials, the outreach workers also referred drug users for injection and HIV-associated medical problems such as thrombophlebitis, abscess (common with dextropropoxyphane injectors) and other infections to the team doctor in the project office or in the drop-in centres. The doctor visited severely ill IDUs at home. Referrals for drug treatment were also made.

Current users as volunteers

Use of current users as volunteers to conduct outreach to IDUs has always been controversial. Very little information was available regarding the experiences of using active IDUs to provide risk reduction information and materials.

Active IDUs were recruited as volunteers to work with the outreach team and to help in reaching newer groups of IDUs. The volunteers were recruited from different age and ethnic groups and localities. The strategy of having a team consisting of both active users and ex-users was found to be very effective in reaching new injectors.

The volunteers were given a brief training on HIV/AIDS risk reduction. They were always accompanied by the outreach workers, who provided the information–education on HIV/AIDS prevention.

Outreach at dealers' place

While outreach to shooting gallery owners and drug dealers has been suggested as a possible way of reaching IDUs, very little information is available describing the process. In the Churachandpur project, outreach intervention was also targeted through drug dealers where IDUs met to buy and use the drugs. First, a survey of the drug dealing places in Churachandpur was conducted. This was done by the outreach workers with help from volunteers. This brief informal survey provided data on the estimated number of drug dealing places, locations of these places and also some indication of how they operated. Initially, the dealers were approached by the outreach workers together with the volunteers and the project objectives were explained. They were given assurances that the purpose was not to collect information but rather to provide the IDUs with information–education on HIV/AIDS prevention. Gaining the trust and confidence of the drug dealers took a number of months. In addition, because of continuous police enforcement, the drug-dealing places were not fixed but rather mobile. This also made it difficult to have continuous access to the dealers.

The outreach workers regularly visited dealers' homes to distribute HIV/AIDS prevention information and risk reduction materials. There were a number of volunteers who regularly distributed bleach at all the possible drug-dealing places. A number of dealers themselves collected bleach kits regularly from the drop-in centres for use by IDUs who came to them to buy drugs.

Outreach at drug treatment centres and in jail

There are six drug treatment centres in Churachandpur. Only one of them provides medical detoxification and the remaining five focus on spiritual healing. The capacity of the centres varies between 10 and 30. The drug users usually stay about 2–6 months at the treatment centres.

The project outreach workers made regular weekly visits to the treatment centres and provided HIV/AIDS prevention information. During these visits, the outreach workers conducted both individual and group discussions with the drug users. In addition to HIV/AIDS prevention, these discussions also focused on issues related to drug prevention. The drug users were also given the assurance that, after leaving the treatment centres, they would continue to receive HIV/AIDS prevention information and counselling from the project staff.

Fifty per cent of the IDUs in Churachandpur had been in jail at least once in their lives. In many cases they had been sent to the jail by the family members to keep them off drugs. In addition, the police also arrested drug users and put them in jail. However, after coming out of the jail, most of them reverted to previous drug using risk behaviours.

The jail provided an opportunity to meet the drug users and provide them with HIV/AIDS prevention information. The local jail in Churachandpur could accommodate about 80 people at one time. The outreach workers made weekly visits to the jail and conducted HIV/AIDS prevention information and counselling session in the jail. The drug users were also asked to

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contact the project staff when they came out of the jail.

Drug users' organizations

Drug users' organizations have been found to be very effective in reaching those drug users who have been reluctant to identify themselves because of the legal or stigmatizing environment. In The Netherlands, for example, drug users first formed their organization in the 1970s and by 1984, when HIV/AIDS became a major issue among them, there were 30–40 such organizations (Friedman, de Jong & Wodak, 1993). The organizations in The Netherlands focused on reforming methadone programmes, initiating syringe-exchange schemes and protesting against harsh police activities. Similar organizations were formed in other countries in western Europe.

While the relationship between drug users' organizations and HIV/AIDS risk reduction among IDUs were not clear, studies conducted in New York indicated that group efforts to shape the norms of injection drug users can lead to increased consistent condom use and bleach use and to decreases in syringe sharing, injecting at shooting galleries and other risk behaviours (Friedman *et al.*, 1992). Similar findings had also been reported by Jose from a similar study conducted in New York (Jose *et al.*, 1996).

In Churachandpur, the outreach workers helped the IDUs in forming a drug users' organization. The organization had a large growing membership and met on a weekly basis to discuss the problems related to HIV/AIDS prevention, other health concerns and other non-health problems faced by the IDUs. The meetings also discussed various factors for facilitating risk reduction.

The project provided support to the organization by allowing it to use the drop-in centres for its regular meetings. It also assisted the organization in printing its newsletter. The organization has been found to be very helpful in reaching those IDUs who have not been contacted by the outreach workers.

Drop-in centres

In addition to street outreach, two drop-in centres were set up to serve as field offices as well as places where IDUs could come to obtain information and discuss any problems with the field staff. One of the centres was in the heart of the town, close to the areas where IDUs congregated. The other centre was mobile. Depending on the need for focusing on different areas this centre has been moved a number of times. On average 10–15 IDUs came to the drop-in centres daily for risk reduction materials (bleach, water and water container, cooker or cotton) and/or for a cup of tea. The drop-in centres functioned as places for conducting interviews, focus group meetings, group education and medical assistance. The centres also served as recruitment points for current IDUs as volunteers.

Constraints in outreach implementation

Even though there have been successes in using outreach to educate IDUs and provide them with risk reduction materials and other services, outreach also has its problems. Conducting outreach to IDUs has been problematic mainly because of the illegal nature of drug use. It has been particularly difficult in Churachandpur because of the existing law and order situation in Manipur in general, the attitudes of the community at large and lack of any support services.

Other constraints included relapse and low morale among the outreach workers; lack of understanding among church and community leaders, and increasing problems in the law and order situation in Manipur due to political instability and intensified police activities. The bureaucracy involved was also cumbersome. The local administrative authority also needed to be informed about the implementation of this intervention in order to coordinate support from the local authorities.

The deteriorating political situation of the town at the time (general strikes, unrest, killings), affected the progress of work in Churachandpur. On many occasions the project staff had to take risks. In many instances negotiation with different political groups was needed so that outreach could continue. On certain occasions, when a general strike was called by one of the political groups, special permission had to be obtained for the outreach workers to go out and continue to provide risk reduction materials to IDUs.

Lack of services

In Churachandpur there was a real lack of any services including health care. In addition, in terms of HIV-related illness of the IDUs,

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nothing was available. Proper drug treatment referral was also difficult. There was no facility for any kind of maintenance treatment programme and the existing treatment facilities only preached complete abstinence.

There were no facilities for voluntary HIV testing and counselling. Whenever someone wanted to be tested for HIV, they were referred to the hospitals in Imphal, 60 km away. The project did not have the resources to set up HIV testing and counselling services, and had only one medical officer hired for the project, whose job was limited to prescribing medication and sometimes making home visits.

Relapse and low morale among outreach workers

In addition to the above-mentioned constraints, relapse and low morale among the outreach workers also hampered the project (five of the six outreach workers had a history of drug use). This means that outreach activities were carried out with fewer staff. The outreach workers were sent to a detoxification programme in town and a support group was established to discuss these issues. One of the project senior staff had training in health counselling, and she provided counselling to the outreach workers, addressing the problem of relapse.

Morale improved immediately after the workers' initial training, thanks to the novelty of the approach, and positive feedback from supervisors and drug-using friends. However, after a few months, when outreach became routine, things began to slow down. The necessity to constantly reorientate, train, innovate and harmonize the activities with the changing situation in the field imposed a heavy burden. Encouraging inputs from the workers and involving them in the decision-making process and feedback after analysis of the collected data has helped.

Conclusions

Even under the difficult conditions described above, the experience so far has been quite positive. The outreach workers were able to reach out to IDUs in the community, contact a large number of them and provide them with risk reduction messages and materials, all in an environment which was not supportive of IDUs. This showed that it was possible to implement outreach in an area with high drug use and high HIV prevalence in a developing country with few services, political turmoil and a background of ethnic conflict.

Despite many difficulties, the community has been very supportive towards the project. There have been no major incidents or mishaps. The families at the project site were also supportive.

Since the intervention began the IDUs have only rarely been harassed by the police. The project has been successful in creating community support; furthermore, while changing general attitudes towards IDUs may take some time, the community has accepted the importance of HIV/AIDS prevention among IDUs. Among the policy makers and politicians, it was previously seen as a disease of marginalized prostitutes and drug users and not a public health priority. However, advocacy has changed this and HIV/AIDS is perceived as being a major public health concern. A number of HIV/AIDS prevention initiatives have been launched in Churachandpur. One of the local NGOs has initiated a small syringe-needle exchange programme in Churachandpur. The authorities have requested the senior project staff to examine the possibility of providing sterile syringes and needles to IDUs and the Manipur State Health Department has already developed proposal for expansion of the syringe-needle exchange programmes in Churachandpur and establish similar programme in other districts. While this may take some time before it is implemented, the interest shown and the action taken by the administration in the expanding and initiating of such a programme was partly due to advocacy.

Since the initiation of this project, the World Health Organization has funded a small study to examine the efficacy of HIV/AIDS home-based care and also to assist in setting up a network of those involved in health care. This network involved the local hospitals, NGOs and volunteers. The advocacy directed to the larger community including the NGOs and health-care professionals also facilitated the initiation of this project.

In many developing countries, outreach to IDUs will require first conducting outreach to the non-drug-using community. Given the nature of the problems (marginalization and discrimination of drug users, lack of services in general), it is vital to accomplish this as a first step in facilitating outreach to IDUs. The outreach to IDUs was not conducted in a vacuum. It was initiated within a community and it was

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also directed to the community. The project was very successful in reaching the IDUs and also creating a supportive community environment and community norms conducive to risk reduction. The experience gained in Churachandpur can be utilized in setting similar outreach programmes in other countries of south-east Asia.

Acknowledgements

This study was supported by the Global Programme on AIDS, World Health Organization. We are grateful to Dr S. K. Bhattacharya, Principal Investigator, ICMR Unit for Research on AIDS in North-Eastern states of India for his critical comments on the manuscript. We also thank Dr Kevin O'Reilly for his continuous support for the project.

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Community-Based Outreach HIV Intervention for Street-Recruited Drug Users in Madras, India

SYNOPSIS

Objective. Community-based outreach to drug injectors is an important component of human immunodeficiency virus (HIV) prevention strategy. The purpose of this chapter is to evaluate the effectiveness of community-based outreach HIV intervention that has been implemented in two locations in the city of Madras, India, to reduce risk behaviors for HIV transmission.

Methods. Baseline data were collected for street-recruited injecting drug users (IDUs) at two outreach locations in Madras, India (n = 250), and follow-up data are available at 18 months (n = 61). Baseline (n = 150) and follow-up data (n = 87) were obtained from a control group of IDUs recruited from locations at which outreach services were not utilized.

Results. Significant decline in injecting risk behavior was noted at 18-month follow-up from baseline for the IDUs recruited from outreach locations.

Conclusion. Results indicate that outreach services for drug users produce significant changes in injecting risk behavior but that sexual risk behavior is difficult to change. There are problems in implementing and evaluating the interventions, and the research findings are limited because HIV serodata were not studied for all participants.

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Injecting drug use, in particular injecting opiates, is increasing in the Indian subcontinent. In some parts of India, like Manipur in northeastern India, a rapid increase in human immunodeficiency virus (HIV) infection has occurred.[1-3] Since 1983, Madras has experienced a serious heroin problem; since 1991, opiate injecting has steadily increased. Easy availability of injectable preparations like buprenorphine has certainly contributed to this escalation. There is an urgent need to develop and implement appropriate HIV prevention intervention strategies that should be monitored and evaluated rigorously.

HIV Prevalence among IDUs in Madras, India

HIV infection was first documented in Madras, India, in 1986 in a commercial sex worker; since then, the infection rates for HIV have shown a spiraling upward trend. Though heterosexual transmission of HIV is the predominant mode, escalating drug use, in particular injecting drug use, is causing concern. The absence of denominator populations of drug users, in particular drug injectors, clearly limits the methodological validity and reliability of HIV prevalence estimates in Madras. Injecting drug users (IDUs) are predominantly seen in certain geographic locations of the city. These areas have been identified using treatment data, ex-IDUs' knowledge, outreach work, arrest records, and narcotic raids and seizures. Prevalence estimates have been carried out on nonrandomized convenience samples from treatment centers,[4,5] voluntary testing from drug users,[6] and unlinked anonymous serosurveillance data from the not-in-treatment, community-based samples. The samples have been smaller; nonetheless, it is remarkable that the prevalence estimates from the three samples have been 15% to 20% (see Table 1).

Table 1. HIV prevalence estimates from three samples in Madras, India

Sample	Size	Prevalence estimate (Percent)
Convenience sample from treatment centers		
Institute of Mental Health, Madras[a]	100	16.0
Punarjeevan Drug Treatment Centre[b]	200	15.0
SAHAI Treatment Center, 1996[c]	50	19.0
Voluntary testing		
SAHAI Field Station[d]	138	17.4

[a]Reference 4
[b]Reference 5
[c]Source: SAHAI Treatment Center (unpublished data)
[d]Reference 6

It also is important to observe that the prevalence of hepatitis B virus (HBV) also is high among IDUs and is estimated at 33% in a community-based sample.[6] Findings from the community-based research initiatives show that many drug users are unaware of the existing HIV testing facilities at Madras and the majority of them are reluctant to test themselves. The number of agencies involved in testing and counseling is low, and existing facilities do not attract, access, or help drug users. There are at present no support groups for HIV-positive drug users.

HIV Risk Assessment for IDUs in Madras, India

In response to escalating drug abuse and its attendant health consequences, outreach services for drug users were established in 1993 in Vepery and Royapuram, India. These locations were chosen because of high prevalence of drug abuse as indicated from the treatment records and through street knowledge and greater involvement of church-based community development activities. The services were established and maintained by SAHAI Trust, a nongovernmental organization involved in drug abuse prevention and treatment of drug abusers; the Trust is supported by the Catholic Churches of Madras Diocese. A comprehensive assessment of HIV risk behavior[7] among street-recruited IDUs was carried out in 1994 using ethnographic techniques, focus group interviews, and some indepth interviews with drug users. Studies assessing risk behavior were carried out on the treatment population.[4,5] The following findings are derived from the above studies.

Injecting Risk Behavior

Drug transitions. The prevalence of injecting as the chief mode of administration for opiates, and heroin in particular, has been recent, and certain factors have facilitated the transition from "chasing" heroin to injecting heroin. Street scarcity of heroin occurred after the crackdown on Tamil militants in Madras, following the assassination of Rajiv Gandhi, the former Prime Minister of India, near Madras in 1991. This crackdown caused heroin users to shift to the easily available injectable preparation called buprenorphine. The use of buprenorphine by some physicians to treat the withdrawal symptoms of heroin abusers facilitated the belief that

buprenorphine was a good substitute for heroin, and moreover, the drug was economical and easily procured. Since 1991, buprenorphine abuse has escalated among opiate users, and when heroin was available in the illicit market again, many preferred to use heroin by injecting. At present, about three-fourths of the current users of opiates are IDUs. In addition, most new users are being initiated to opiates by injecting.

Levels of sharing. All the assessment studies on the out-of-treatment and in-treatment populations suggest that sharing of syringes and needles is very common. More than two-thirds of the injectors interviewed admitted to sharing injecting equipment in the past month.[4,7] The syringes and needles available and used in Madras are two separate pieces that can be detached easily. These 2 milliliter or 5 milliliter syringes can be purchased from pharmacies without a prescription, and needles alone can also be bought separately. At times needles are not shared, but the syringes are shared. Sharing is customary among friends. Indiscriminate sharing—sharing with strangers and casual acquaintances that was prevalent at the beginning of the injecting epidemic in Madras (as extracted from the ethnographic diaries of researchers in the early 1990s)—has become infrequent in recent years.

Indirect sharing. Indirect sharing is very common. Use of common spoons, solutions, and cotton swabs as well as participating in "frontloading" are all common among heroin users; dipping the needles into the ampules is common among buprenorphine users.

Frequency of injecting. Heroin injectors injected frequently, and on average, they used the drug two to four times daily. Buprenorphine users injected less frequently because of the long-acting nature of the drug.

Social context of drug use. The heroin networks in Madras were more cohesive and functionally reinforcing than the buprenorphine networks. Most heroin users were in touch with other drug users, at least for purely functional reasons such as procuring the illicit substance. Their networks also were larger in size and consisted of more members who knew each other. Even though the ties and bonding changed over time, at any point in time heroin users had at least one drug user with whom they had a reciprocal relationship. In contrast, the buprenorphine networks were smaller, and most individuals had only one or two drug-using individuals in their network. Most drug users lived with their families; the mother, sister, or spouse was always supportive of the drug user, and the family ties continued in spite of heavy drug use. Heroin users take the drug in chaotic street scenes, and purchasing venues facilitate sharing practices. Heroin users purchased the drug in the dealers' settings, where many drug users congregate to use the drug and where needle sharing is common. Drug users gather to shoot drugs at common shooting locations such as abandoned buildings and public toilets. All of these settings influence risk behavior.

Sex risk behavior. Because heroin users reported spending most of their time searching for the drug, their reported interest in sex was low. But a good many of them admitted to engaging in sex in the past year. Casual sex and commercial sex were frequent. Most were reluctant to use condoms, and the rate of condom use during their most recent sexual encounter was alarmingly low. Buprenorphine users reported more risky sexual behavior compared with heroin injectors.[5,6] Sexually transmitted disease (STD) infections were frequent.

Outreach model. The outreach team, consisting primarily of ex-users and professional social workers, forms the backbone of HIV intervention activity. The outreach workers recruit IDUs from the street and provide various interventions at the street level. Apart from the face-to-face education about acquired immunodeficiency syndrome (AIDS) and its transmission, these individuals are provided with information on decontamination of syringes. Bleach and condoms are distributed by the outreach team. Advice on medical and social problems and service information also are provided, and outreach workers facilitate the use of addiction treatment services. Outreach activities are concentrated in two locations with a high prevalence of drug abuse in the city: Royapuram and Vepery. Though most outreach interventions were focused on individuals and on changing individual knowledge, opinion, and behavior, the focus is slowly shifting to changing the peer and social norms about risky behavior. Instead of targeting individuals, drug networks are increasingly being targeted.

The focus of the research described in this chapter is to evaluate the impact of community-based outreach HIV intervention on the risk behaviors of IDUs through a longitudinal study. The study examines the extent to which unsafe drug-injecting and sexual behaviors decreased between baseline and the time when drug users were interviewed at follow-up and whether or not the risk reduction was the result of the intervention.

METHODS

Community outreach group participants. Current njectors of drugs—defined as those who had injected drugs in the past two months—were recruited for this study; 125 consecutive IDUs were recruited from street outreach at each of the two locations. Baseline data were collected, and this sample was followed up after 18 months; 61 individuals were available for follow-up assessment. Semiannual follow-up assessments also were done.

Community-based outreach group intervention. The community-based outreach intervention initiated by AHAI Trust aims to facilitate improvement in health and reduction in risk of HIV transmission for drug users who are not effectively reached through existing services or through traditional health education channels. The drug users are reached in their own communities and local settings. Outreach is provided by recovering drug users, indigenous to the selected communities, who are familiar with the current users and their milieu.

The elements of outreach in our settings include providing AIDS education and distributing bleach and condoms. Outreach activity largely concerns raising awareness about drugs, HIV and AIDS in general, HIV transmission, and local drug treatment and HIV prevention activities. Outreach is offered one on one in private settings and is supported by promotional literature for clients. Tasks include contacting people to deliver outreach, distribute condoms, offer support and advice on social and medical problems, and facilitate the use of existing services. In our outreach model, clients are provided with at least three sessions in private settings:

Session 1 raises awareness about drugs, HIV transmission, correct techniques for needle decontamination with bleach, and condom use.

Session 2 reinforces the components of the first session and assists clients in identifying their own specific risk behaviors and understanding the strategies to reduce their HIV risk.

Session 3 provides information about existing services and advice on social and medical problems. Clients at this stage also are encouraged to seek HIV antibody testing and counseling.

Since clients need to be transported to a different location for HIV antibody testing and counseling, the response to this service was poor. Less than one-fourth (n = 58; 23.2%) of the clients recruited from outreach locations completed the HIV antibody testing, and less than one-eighth (n = 30; 12%) of the clients returned for their test results.

In the control locations, there were no outreach services. The outreach and control sites did not differ in other intervention programs, including needle exchange and network intervention.

Control group participants. A control group of current IDUs was recruited from locations at which no outreach services were available; a sample of 150 IDUs completed the baseline assessment. The primary means of recruitment was by word of mouth. After 18 months, 87 individuals were available for follow-up assessment.

Measures. Baseline assessments were performed for both groups, and data were collected, including socio-demographic information, patterns of drug abuse, and HIV-related risk behavior, both injecting and sexual.

After 18 months, follow-up data were available on drug use patterns, HIV risk behavior, and behavior change for 161 clients from outreach locations and 87 clients from the control group. The baseline and follow-up interviews were done by independent trained researchers, and the outreach interventions in the two outreach locations were carried out by outreach workers. The subjects recruited were not paid for the interviews, and when necessary, food, soft drinks, and medical assistance were provided for them. The intake period was from January to March 1995, and the follow-up period was from July to August 1996. The majority of the recruited sample did not receive HIV antibody testing and counseling; this was a serious limitation of this study.

Drug risk behavior was measured for the 30 days prior to the baseline interview and the 30 days prior to follow-up. This allowed for a comparable interval of time over which to measure behavior nearest to the baseline and follow-up interviews and, in the case of the follow-up interview, provided time for risk reduction to be expressed in the period between interviews. The time interval over which sexual behavior was measured was longer than for the drug risk behavior, thereby providing a sufficient interval to measure the sexual activity of subjects who had infrequent sexual encounters. Data on sexual behavior—numbers of sex partners, history of commercial sex, and history of STD infection—were measured 12 months prior to the baseline interview. Sexual risk behavior at follow-up

Table 2. Demographic characteristics of IDUs from outreach and control locations (N = 400)

Variable	IDUs from outreach locations (n = 250)	Percent	IDUs from control locations (n = 150)	Percent	P-value
Age					
18–24	45	18	31	21	NS
25–34	130	52	86	57	
35+	75	30	33	22	
Caste					
Scheduled	95	38	69	46	NS
Others	155	62	81	54	
Marital status					
Married	115	46	62	41	NS
Unmarried	135	54	88	59	
Education					
Illiterate	40	16	22	15	NS
Middle school	122	49	63	42	
High school	88	35	65	43	

was measured for the period between baseline and follow-up interviews.

Follow-up interviews were conducted on 161 (64.4%) subjects from outreach locations and 87 (58%) control subjects. The characteristics of the individuals who were and were not followed were compared for demographics, drug use, and HIV risk behavior; there was no significant difference between the groups on any of these variables.

The outcome was assessed using HIV-related drug and sexual risk behaviors such as frequency of injecting, sharing needles (receptive or distributive sharing), number of sex partners, history of commercial sex, and alcohol use. Frequency of injecting was evaluated as one to six times per week and among daily users as one to three times daily or four or more times daily; a change in the frequency of injecting at follow-up compared with baseline is indexed as increase, decrease, or no change. Sharing of syringes or needles was assessed as no sharing, sharing less than once a month, sharing less than once a week, or sharing very often; a change in the frequency of sharing at follow-up was recorded as increase, decrease, or no change. Number of sex partners in the past year was recorded as no partner, one partner, or two or more partners; change during follow-up interview was indicated as increase, decrease, or no change. Similarly, history of commercial sex was obtained for the past year, and change at follow-up was indicated. Alcohol use was evaluated as no use of alcohol or occasional use of alcohol in social settings with a frequency not exceeding once a week, use of alcohol one to seven times a week, and use of alcohol on a daily basis. A change in the frequency of alcohol use at follow-up was indexed as increase, decrease, or no change.

RESULTS

Comparison of subjects from outreach locations and control locations. Participants recruited from all locations were male. Outreach has not been able to identify female drug users, and it is common knowledge that the prevalence of opiate use among women in Madras is disproportionately small. After several years of outreach activity in a variety of geographical locations, we have identified only two female IDUs. The data from treatment centers in Madras also indicate a negligible number of female IDUs in treatment. Hence it was decided to recruit only male IDUs for the current study.

At baseline, there were no significant differences between the participants from the outreach and control locations on demographic data like age, caste, marital status, and educational status (Table 2). Comparisons were made between the two groups for drug use patterns and HIV-related drug and sex risk behavior. The IDUs in both groups were primarily using heroin or buprenorphine. In our sample, 59.4% of IDUs from the combined outreach and control sites, 57.6% of IDUs from outreach locations, and 61.3% of IDUs from the control locations were injecting heroin primarily. Significant differences were observed at baseline for needle use frequency ($P = 0.0168$), needle use frequency among daily injectors ($P = 0.0095$), and commercial sex ($P = 0.0214$) (Table 3). The IDUs at the outreach locations exhibited high risk behavior in both injecting and sexual practices. About three-fourths

Table 3. Drug use and other HIV-related risk behaviors of IDUs from outreach and control locations, at baseline (*N* = 400)

Variable	IDUs from outreach locations (n = 250)	Percent	IDUs from control locations (n = 150)	Percent	P-value
Type of drug					
Heroin	144	57.6	92	61.3	
Buprenorphine	106	42.4	58	38.7	NS
Needle use (past 30 days)					
1–6 times/week	65	26.0	56	37.3	χ^2 5.71
Daily users	185	74.0	94	62.7	$P = 0.0168$
Needle use among daily users (past 30 days)					
1–3 times/day	129	69.7	79	84.0	χ^2 6.73
4 or more times/day	56	30.3	15	16.0	$P = 0.0095$
Sharing (past 30 days)					
No sharing	25	10.0	27	18.0	NS
Sharing, less than once a month	40	16.0	26	17.3	
Sharing, less than once a week	85	34.0	48	32.0	
Sharing very often	100	40.0	49	32.7	
Sex partners (past 12 months)					
None	57	22.8	27	18.0	NS
1	100	40.0	51	34.0	
2 or more	93	37.2	72	48.0	
Commercial sex (past 12 months)					
Yes	80	32.0	32	21.3	χ^2 5.29
No	170	68.0	118	78.7	$P = 0.0214$
History of STD (past 12 months)					
Yes	49	19.6	24	16.0	NS
No	201	80.4	126	84.0	
Alcohol use (past 30 days)					
No misuse	87	34.8	63	42.0	χ^2 5.67
1–7 times/week	122	48.8	55	36.7	$P = 0.0588$
Daily	41	16.4	32	21.3	

(74.0%) of IDUs from outreach locations used needles daily, and 62.7% of IDUs recruited for the control group used needles daily. Among the daily needle users from the outreach locations, 30.3% injected four or more times daily; 16.0% of the daily needle users from the control locations injected four or more times daily. Forty percent of the IDUs from the outreach locations shared needles and syringes very often, and only 10.0% did not share; from the control locations, 32.7% of the IDUs shared needles and syringes very often, and 18.0% did not share. In the total sample of 400 from the combined outreach and control sites, 37.3% were sharing syringes or needles (receptive or distributive sharing) very often. Alcohol use is common among IDUs, and 65.2% of IDUs from outreach locations and 58.0% of IDUs from the control locations used alcohol. Nearly one-third (32.0%) of IDUs from outreach locations and 21.3% of IDUs in the control group admitted to having commercial sex in the past 12 months. In the total sample of 400, 41.3% of IDUs had two or more sex partners in the past year, and 18.3% of IDUs had a history of STDs in the past year. The high levels of risk behavior observed in Vepery and Royapuram were among the primary reasons for establishing outreach services in these two locations.

Behavior change between baseline and follow-up. At 18 months, follow-up data were available for 161 IDUs from outreach locations and 87 IDUs from the control locations. Comparison was made using the change in risk behavior at follow-up. This comparison reveals that the participants from the outreach locations engaged in significant protective behavior and practiced injecting risk reduction behaviors (Table 4). Because there were statistically significant differences in three of the HIV-related risk behaviors—(1) needle use in the past month, (2) needle use among daily users in the past month, and (3) commercial sex in the past year—between individuals recruited from outreach locations and control locations at baseline (Table 3), change scores were used to index change in the level of risk behavior at the 18-month

Table 4. Change from baseline to follow-up for HIV-related risk behaviors of IDUs from outreach (O) and control (C) locations (N = 248)

Variable	n	Increase	(%)	No change	(%)	Decrease	(%)	P-value
Needle use frequency	O = 161	37	(23.0)	63	(39.0)	61	(38.0)	0.0146
	C = 87	35	(40.2)	24	(27.6)	28	(32.2)	
Sharing	O = 161	18	(11.2)	68	(42.2)	75	(46.6)	0.011
	C = 87	22	(25.3)	35	(40.2)	30	(34.5)	
Sex partners	O = 161	32	(19.9)	92	(57.1)	37	(23.0)	NS
	C = 87	14	(16.1)	54	(62.1)	19	(21.8)	
Commercial sex	O = 161	26	(16.1)	104	(64.6)	31	(19.3)	NS
	C = 87	16	(18.4)	50	(57.5)	21	(24.1)	
Alcohol use	O = 161	44	(27.3)	99	(61.5)	18	(11.2)	0.0431
	C = 87	12	(13.8)	61	(70.1)	14	(16.1)	

follow-up. To assess change in each risk behavior, participants were categorized as decreasing the frequency of the behavior, increasing the frequency of the behavior, or not changing the frequency of the behavior.

A chi-square test was used to interpret the change in each risk behavior and participation in outreach activities. Needle use frequency declined significantly (P = 0.01), and sharing also decreased significantly (P = 0.01) among participants from outreach locations compared to IDUs from control locations. From the outreach locations, 46.6% of IDUs decreased sharing needles and syringes compared to 34.5% from the control locations. Alcohol use increased significantly (P = 0.04) among those from the outreach locations (27.3%) compared with the control locations (13.8%). At 18-month follow-up, whereas only 10.3% of the control-group IDUs always cleaned syringes and needles with bleach before use, 29.8% of individuals from outreach locations always cleaned syringes and needles before use. There was no significant difference between the two groups in sexual risk behavior; more than half of the IDUs in both locations did not exhibit sexual risk behavior change.

DISCUSSION

Outreach has provided substantial opportunities to contact and work with the hard-to-reach IDU population. This is a relatively new field in India. Manipur plus a few other northeastern India locations have outreach activities for drug users,[8] and other outreach programs are operating in Calcutta, New Delhi, and Madras. Results of outreach activities demonstrate that IDUs are capable of positive behavior change. This study indicates that behavior change is unfortunately confined to injecting risk behavior only; outreach programs do not appear to induce changes in sexual risk behavior. The next steps for outreach require clear definitions of the various activities and selection of activities that are situationally appropriate. The social networks through which HIV is transmitted are the same social networks that can be co-opted for HIV prevention.[9] It is to these networks that future outreach services must turn to encourage behavior changes in communities of injectors.

While there is some reason for optimism that HIV risk reduction among IDUs is occurring by way of reduced frequency of needle sharing and needle use, there is no significant change in sexual risk behavior in this data set with this intervention. Given the complexities of the sexual relationships of IDUs, it is likely that there are multiple reasons why sexual risk behavior change is difficult to encourage, and it is unlikely that any sudden breakthroughs will change that outlook.[10] Interventions to achieve greater levels of risk reduction therefore need to be more effective. Previous research has indicated that peer pressure may be important in determining the degree of sexual risk reduction,[11] which suggests that interventions need to harness social relationships to influence safer sex. In the case of drug risk behavior, evidence indicates that outreach projects that involve the target population and encourage a collective response to behavior change may be more effective than interventions that restrict their focus to individuals.[12,13] Community-oriented models aim to improve health by changing norms at the community level: they are geared to "encouraging subcultural changes,"[14] in which individual behavior change is facilitated by the behaviors and attitudes of peers.

Many IDUs are known to be alcohol dependent.[15] Calsyn and colleagues[16] report in a study of patients receiving or taking methadone treatment that "use of alcohol to intoxication" increased frequency of heroin and cocaine

use in men and women and that increased frequency of alcohol use in women was associated with "unsafe" sexual behavior. Latkin and colleagues[17] observed that drinking alcohol once a day or more was associated with risky sexual practices independent of the use of cocaine and heroin. Their study highlighted the need for more intense HIV prevention and other drug and alcohol treatment programs for IDUs. Alcohol use was high in subjects from outreach locations—48.8% used alcohol one to seven times weekly, and 16.4% used alcohol daily. At 18-month follow-up, 27.3% of the subjects in the outreach locations had increased their alcohol consumption. The increase in alcohol use might be part of a compensatory change dynamic in which participants in the outreach sites reduced high risk drug-injecting behaviors but increased their alcohol use as part of a compensatory totality. Hence it is important to consider alcohol abuse prevention and treatment in outreach intervention programs for IDUs.

Many problems and obstacles were faced during the HIV intervention implementation in Madras. The problem of injecting drug use is not a priority area for AIDS intervention in general, and the focus is only on heterosexual transmission and targets commercial sex workers and long-distance truck drivers. Many agencies involved with drug abuse do not consider HIV intervention an urgent issue. This problem has been overcome by the creation of an umbrella organization called the Society for Prevention, Research and Education on Alcohol and Drugs (SPREAD), which brought all the drug agencies under one roof. SPREAD focuses on issues of consensus, with its main function to educate all the agencies about the significance and urgency of HIV risk reduction. Initial community resistance to HIV intervention efforts was overcome by the formation of a community advisory board composed of locally influential opinion leaders. All the proposed intervention efforts were discussed at advisory group meetings and were endorsed by the board before being implemented. Addicts were identified by the police if they were in possession of a syringe, so many drug users stopped carrying syringes when they went out in search of drugs. This compelled sharing practices at places outside of IDUs' houses and, in particular, at dealers' locations. When this was brought to the attention of the advisory board, the issue was taken up with the police, who agreed not to harass addicts who possessed personal syringes. This policy change has facilitated carrying of personal syringes by IDUs in the community.

One of the areas in which we need to concentrate is sexual risk behavior. There is a large group of buprenorphine injectors in Madras[18] that may require different intervention strategies. Easy availability of injectable preparations like buprenorphine, diazepam, and chlorpheneramine maleate (Advil) has significantly contributed to the prevalence of injecting in Madras. Many drug users prefer a combination of the above drugs popularly referred to as "CAT" (Calmpose-Diazepam, Advil, and Tidigesic-Buprenorphine), and there is an urgent need for rigorous control measures in Madras. Outreach workers are pressured to assist with the medical problems of IDUs, and strengthening primary medical care is an emerging concern. There is an urgent need to improve and expand HIV testing and counseling facilities. Our outcome evaluation is extremely limited by the absence of data on seroprevalence, even though the literature shows that self-reported behavior changes have proved to be reliable and valid measures. At present, attempts are being made to counsel and test all recruited individuals for HIV intervention. Future outcome studies will certainly use the seroprevalence data as an outcome measure.

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Harm reduction in Asia: a successful response to hidden epidemics

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AIDS 1998, **12** (suppl B):S109–S115

Keywords: HIV, injecting drug use, Asia, harm reduction, prevention, needle and syringe exchange

Introduction

Transmission of HIV through the sharing of contaminated injecting equipment among injecting drug users (IDU) in the different countries of Asia, as in many other parts of the world, has often been crucial to the development and nature of the epidemic and explosive in character [1]. In most places this transmission continues unabated and has proven problematic for the development of effective responses.

The frequent lack of effective response to HIV infection among IDU, despite the presence of active national AIDS programmes, stems from a combination of a lack of concern, a failure to recognize the importance of this aspect of the epidemic, difficulties in dealing with issues of illegal drug use, which are politically and culturally sensitive, and perceptions of IDU as being noncompliant, not concerned with their health, and too difficult or unworthy to work with [1]. In addition, the prevailing climate is often one of a uniquely law and order approach to the problems of illicit drug use, in which the effective strategies of harm reduction, which are based on working with the affected community, are seen as contradictory and inimical to fundamental drug policy. Finally, harm reduction approaches that have been seen as successful in developed countries, which include needle and syringe exchange programmes (NSEP), drug substitution programmes, methadone maintenance therapy (MMT), and peer education [2], have often been characterized as culturally and politically inapplicable in Asia [3].

Despite all these barriers, successful programmes for the prevention of HIV transmission among IDU have sprung up in many Asian countries, illustrating the validity of the principles underlying the harm reduction approach. This approach, derived originally from the field of drug dependence treatment, recognizes that the goal of abstinence, while desirable, is often unattainable, and it seeks pragmatic approaches to decrease the harm associated with drug use while not necessarily decreasing that drug use [2].

Importantly, although these programmes share a common philosophy, this is expressed in very different ways in different localities with different political, cultural and historical circumstances. To illustrate both the diversity and the common thread running through these approaches, here we provide a brief description of seven of the more established programmes and of the Asian Harm Reduction Network formed in 1996 to support the work of these programmes.

Although the majority of these programmes have evaluation mechanisms, few have undergone external or published evaluation based on behavioural or morbidity outcomes. Thus, sources for these descriptions are often reports prepared for internal use or for funding agencies.

The programmes

Ikhlas, Kuala Lumpur, Malaysia [4]

The Ikhlas Community Centre in Kuala Lumpur, Malaysia, began as a street outreach programme established by members of Pink Triangle (the first nongovernment AIDS organization in Malaysia). The activities were focused upon IDU in Chow Kit, a red light district in Kuala Lumpur.

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© Lippincott-Raven Publishers ISBN 0-41283-650-5 ISSN 1350-2840

The IDU in Chow Kit are generally homeless and in poor health, and were initially suspicious of the outreach workers who they assumed worked for the government. The outreach workers had to persist in building up trust and reassuring the IDU that they were there to help. In many cases, the workers found that the immediate needs of IDU had to be attended to before they could concentrate on HIV/AIDS information.

Eventually, a small drop-in centre in Chow Kit was established where IDU could come for medical treatment, food and information and counselling about HIV/AIDS and safer using practices. Apart from these services, the drop-in centre provides a shower, laundry, recreational facilities and an area where clients can sleep. Given the homelessness of most of the IDU, these facilities respond to their immediate needs and therefore attract them. The drop-in centre also provides information on rehabilitation and referral for clients who want to stop using drugs. The medical facility at Ikhlas treats 20 clients per day, and the centre itself provides three meals daily and currently sees 75–100 clients per day. Seventy per cent of their clients are aged 21–29 years and many of them have been living on the streets for more than 5 years. Most have been through prisons and rehabilitation centres several times.

Outreach on the streets of Chow Kit is conducted three times a week. Clients are given a pack containing a bottle of water, a bottle of bleach, a leaflet, a bottle of iodine, gauze, plasters, vitamins and panadol.

Ikhlas believes that the success of their programme is measured by the enormous increase in the knowledge of HIV/AIDS among IDU. Many clients have changed their behaviour by no longer sharing injecting equipment, reducing the number of times they inject per day and changing from injecting to smoking. The medical attention, and the information about injecting related health problems, has resulted in fewer abscesses and paralysis of limbs, with many clients reducing or stopping dangerous practices such as injecting pills. HIV-positive clients of Ikhlas are now taken to a medical specialist for treatment, clients who are discharged from hospital are provided with temporary accommodation and families are advised on care for their HIV-positive children. More clients are beginning to request rehabilitation and detoxification services. Although not all rehabilitation attempts work, Ikhlas has found that those people who choose rehabilitation, rather than being forced into it, are much more likely to stop using drugs.

Needle exchange, Mae Chan, Thailand [5]

The Akha hill tribe villagers of the Mae Chan district of Northern Thailand live about 30 km south of the Burmese border on the lower tip of the Golden Triangle. The villagers have a long history of using opium for social, ritual and medicinal purposes. Until the late 1980s, opium was readily available and the majority of the using population smoked or ate opium on a daily basis. As opium became less available (as a result of opium crop eradication in the south and the establishment of laboratories producing heroin in the north) the type of heroin available was more suitable for injecting than smoking.

NSEP were established in three villages with evidence of drug use and a clear indication that IDU was not only prevalent but increasing. The injecting of drugs was a fairly new behaviour and one that villagers felt unsure about. Meetings to discuss HIV prevention were held in each of the villages, involving the villagers, the IDU, the village committee, male elders and local representatives of the Thai government. After much discussion, the villagers agreed that an NSEP would be useful.

The NSEP commenced in November 1992: a register was drawn up recording users' names, the number of times they injected daily, the amount of heroin they used per day and some details of the sharing networks among IDU. The village committee in each village undertook the responsibility for distributing clean needles and syringes and disposing of old ones.

Each user was educated individually about safer using techniques, following the 2 × 2 × 2 method used in Australia — cleaning the needle and syringe twice with cold water, twice with bleach and twice again with cold water. The uncertainty of continued needle and syringe supply meant they had to be conservative with the numbers of needle and syringes distributed, limiting this to a maximum of three needles and syringes per user per week.

The operation of the NSEP in these first three villages worked in a fairly systematic way for a year and a half, until the supply of needles and syringes abruptly ran out. By this time, however, the IDU had developed a strong sense of responsibility in their using behaviour and had become accustomed to using their own injecting equipment; in the majority of cases they were no longer sharing needles and syringes.

The NSEP now operate on a two-tiered level: direct exchanges and an on-request basis. The direct exchanges operate in six villages, along similar lines to the original exchanges, but are now administered by paid health care workers. Records are kept of the number of needles and syringes distributed and the number returned each week. 75 IDU are provided with up to three needles and syringes per week in these district exchanges. Of the needles distributed, more than 90% are returned.

Drug substitution programme, New Delhi, India [6]

SHARAN, the Society for Serving the Urban Poor, is an urban development nongovernment organization (NGO) in New Delhi, India. In the early 1990s, SHARAN identified a growing problem of IDU among urban slum

dwellers. Many of the IDU had serious health problems associated with their injecting, such as incorrect injecting practices with consequent development of ulcers, abscesses, cellulitis and thrombophlebitis. SHARAN found that there was frequent needle and syringe sharing with little cleaning occurring between use, thus increasing the risk of the spread of hepatitis and HIV.

As the price of heroin increased, the users began switching from inhaling heroin to injecting buprenorphine (trade name Tidigesic). SHARAN's focus group with IDU indicated that IDU began injecting buprenorphine because they believed it would help them stop using heroin and because buprenorphine was cheaper. The focus groups also revealed that most heroin inhalers are potential injectors: all that is required for them to take up injecting is a decrease in heroin availability.

SHARAN clearly saw the need for some intervention with the IDU and established a trial programme of sublingual buprenorphine. This established that buprenorphine was acceptable to heroin addicts, had few side effects, blocked the effects of subsequently administered doses of morphine, appeared to induce only a low level of physical dependence and significantly diminished the self-administration of heroin.

SHARAN had already made contact with many IDU through their detoxification camps. The substitution programme began on a pilot basis in early 1993 with 30 IDU and quickly expanded to 300. Initially the doses of buprenorphine were administered through a street delivery system. As their clients increased, SHARAN established a drop-in centre where their clients could receive their dose.

Clients are given buprenorphine for 1 year free of charge; after this they are offered prescriptions, which are reviewed monthly. During this time, any client who wants to detoxify can do so in SHARAN's detoxification camps or they can be referred to other services. Short term rehabilitation is also offered and clients can embark on a structured dose reduction programme.

From February 1995 to January 1997, 315 of the 1320 buprenorphine clients attended the clinic regularly; 34% (447) of the clients were IDU and of these 33% (148) had given up injecting; 35% (158) had stopped sharing equipment and/or reduced the frequency of injections.

Through a system of Peer Education and Peer Research, SHARAN has continued to interview and evaluate clients' attitudes to the programme: most clients have reported that their quality of life, economically, socially and health-wise, has improved. As a result of this experience, SHARAN believes that oral buprenorphine is a feasible, low-cost and effective tool to diminish the risk of HIV among high-risk opiate injectors.

The SHALOM Project, Manipur, India [7,8]

The Society for HIV/AIDS and Lifeline Operations in Manipur (SHALOM) was established in late 1994, after a 1 year feasibility study into the problems of IDU and HIV infection in Churachandpur township in Manipur. Churachandpur is a predominantly tribal and Christian region in the northeastern part of India, bordering Myanmar.

The first HIV cases in Manipur were detected among IDU in late 1989. Of the 1.8 million people in Manipur, an estimated 40 000 are IDU, over 60% of whom are HIV-positive. Churachandpur was chosen as the site for the project as it had 3000 IDU and highly motivated community leaders who were deeply concerned about drug use and HIV infection.

After wide consultation with community leaders, church leaders, women's groups, youth and educational institutions, drug users and law enforcement agencies SHALOM decided to establish an NSEP. A 1995 study in Churachandpur showed that the main reason drug users were sharing needles and syringes was the fear of being arrested if found with injecting equipment. The NSEP aimed to reduce the sharing and remove possibly infected syringes from circulation. Consultation with police resulted in their support for the NSEP with officers allowing SHALOM workers to carry injecting equipment and not harassing IDU for carrying syringes. The Manipur Minister of State for Health, after viewing evidence of the effectiveness and community acceptance of the programme, also granted permission for the programme and included the harm reduction approach in his State AIDS policy.

In August 1995, the NSEP began by offering clients sterile syringes, needles, swabs, cotton, distilled water and client ID cards. SHALOM employed peer outreach workers, most of whom were ex-users, to visit different parts of the town, exchanging needles and syringes and providing information on HIV/AIDS. The peer educators work in pairs, partly to give each other the support not to start using again.

IDU can also exchange their needles and syringes at the SHALOM building. Other services and choices offered by SHALOM include medical attention, home detoxification, institutional detoxification and rehabilitation, use of bleach to clean needles, home based care for HIV infected people, confidential HIV testing and counselling, community education and recreational and vocational rehabilitation.

Between April 1996 and March 1997, 25 719 new needles and syringes were distributed to IDU and 15 641 used needles and syringes were collected: overall the syringe return rate was 61%. In the same period, SHALOM staff provided detoxification services 444 times to 349 drug users.

LALS, Kathmandu, Nepal [9]

The Lifesaving and Lifegiving Society (LALS) was established in 1991 by two volunteers in Kathmandu, Nepal. Heroin has been used in Nepal since the 1970s, initially by 'chasing the dragon', but increasingly through injecting. It is estimated that there are 25 000–40 000 drug users in Nepal with about 10% injecting their drugs. Nepal is surrounded by countries with extensive HIV epidemics among their IDU, including Myanmar and northeast India.

When LALS began its work, injecting was a hidden phenomenon and the rates of sharing injecting equipment were extremely high. Although it was possible to buy needles and syringes from pharmacies, most IDU did not purchase them for fear of being identified as a drug user.

LALS began by distributing sterile injecting equipment in exchange for contaminated equipment among the IDU. It took some time to establish trust with the IDU, who had not before experienced offers of assistance without the insistence that they go into treatment. At first, the outreach workers did not have an office and therefore visited IDU three to four times a week on the streets. They bought the necessary injecting equipment and medical supplies with their own money and from donations. They found that the level of knowledge about HIV was low and injecting techniques were poor.

Initially, the community and authorities believed that LALS was promoting and supporting drug use. Through negotiations and discussions with community leaders LALS gradually earned respect. The support of the Chief of the Narcotic Division helped to ease problems with the police. In 1997, LALS still met with the local police every Tuesday to discuss their programmes and emphasize the importance of police support.

LALS now has 24 full-time workers including eight community health outreach workers (CHOWS). The outreach teams include ex-drug users, nurses and social workers, working with approximately 860 IDU. They visit 65 different areas in Kathmandu to perform needle/syringe exchange, distribute condoms, and give primary health care and counselling to IDU and their families/sexual partners. LALS also educates the community about HIV/AIDS and prevention methods. Syringes are exchanged on a one to one basis with no limit on the number of exchanges at any particular contact. Between August 1991 and February 1997, 173 798 exchanges had occurred. The data from LALS' research shows that there have been significant changes in injecting behaviour, in relation to HIV risk, by clients who have been in contact with LALS, and that HIV is not spreading among these IDU. HIV seroprevalence among LALS' clients surveyed between 1991 and 1994 remained stable at below 2%.

Save the Children Fund, Ho Chi Minh City, Vietnam [10,11]

The first detected case of HIV in Vietnam was in December 1990. By April 1997, 5401 people were reported as being infected with HIV, 759 of whom had developed AIDS, 430 of whom had died (based on government figures). It is estimated that about 70% of people detected with HIV are IDU. There are about 200 000 drug users in Vietnam; half are IDU and about 30 000 live in Ho Chi Minh City (HCMC).

In HCMC most users inject 'black water', a by-product of opium mixed with water, commonly injecting several times a day and sharing needles. The majority of drug users in HCMC have been using drugs for a long time: the majority are men in their forties and early fifties, many of whom started IDU during the war.

The HIV/AIDS Prevention and Education programme of the Save the Children Fund UK has been operating in Ho Chi Minh City, Vietnam, since 1992, having found that little was being done to educate and promote HIV prevention among IDU. A programme was established to target IDU using a peer education approach. The initial approach involved distributing disinfectants to shooting galleries, but it was soon discovered that the disinfectant was inappropriate (for example, bleach), or that the users were not in control of their own injecting equipment because they used the dealer's syringe at the shooting gallery. The message was moderated to promote cleaning syringes with water.

In 1995, a 3-month pilot NSEP was begun, targeting two shooting galleries. It soon became simply a needle and syringe distribution programme, because IDU did not want to carry needles and syringes on them for fear of arrest. It is possible that the pilot programmes will be expanded, and the government is now running its own pilot NSEP in HCMC.

The SCF employs 10 outreach workers, who go out to the streets on their motorcycles most days. They provide services to IDU in 16 areas of the city, visiting IDU in coffee shops near shooting galleries or in their own homes. They deliver IEC (STD/AIDS information, condoms, drug use/dependency) materials and give advice on safer using practices and HIV/AIDS. They have established peer support groups in which IDU share their experiences, give updates on the local scene and role play scenarios that they have witnessed. Other activities include home visits, involvement in 'The Friends House' — a house for HIV infected IDU who are homeless or have been abandoned by their families, musical groups performing songs about HIV prevention, medical referrals and community education.

SCF provides services to an estimated 3000 IDU (1996), of whom 60% are seen on a regular basis. The outreach

services developed by the programme are to be extended to six other provinces in Vietnam.

ASEP, Cebu City, Philippines [12,13]

The AIDS Surveillance and Education Project (ASEP) is implemented by PATH, Philippines in cooperation with the department of Health/National AIDS/STD Prevention and Control Programme, local NGO and city health departments. One of its programmes is a harm reduction project aimed at IDU in Cebu, an island south of Manila. The project began in 1994, after intensive interviewing of IDU in Cebu City, and is the first of its type in the Philippines.

The cumulative total of notified HIV infections in the Philippines (December 1996) was 861 people, of whom 295 had developed AIDS and 154 had died.

Crystal methamphetamine is the drug of choice among the Philippines drug users: although some of it is manufactured locally, most is imported from China, Hong Kong and Taiwan. A study conducted among IDU in Cebu in 1994 discovered that the respondents had used drugs for between 5 and 15 years, that needle sharing was usual and that they were not using effective measures to disinfect their needles and syringes. One needle and syringe might be shared by between three and 13 people. The primary reasons for sharing equipment was a lack of money, the inability to obtain clean equipment and camaraderie among friends.

The Cebu project runs along similar lines to LALS in Nepal. The 11 staff consist of a project coordinator, four senior Community Health Outreach Workers (CHOWS), two junior CHOWS and four administrative and support staff. Many of the CHOWS are former drug users, which has helped bridge the gap between the client and the health provider. The CHOWS provide services 5 days a week to about 500 IDU who either live in or come to the area. They deliver basic information about sexually transmitted disease (STD)/AIDS, condom education/negotiation skills/distribution, IEC materials, risk reduction counselling, safer injecting practices, needle cleaning (by distributing bleach and water), needle and syringe exchange, primary health care and referral for appropriate medical or drug rehabilitation services.

Although the project has not been going for long, it has managed to contact the difficult to reach IDU and has brought about some behavioural change: needle and syringe sharing has decreased, bleach and water has been accepted as a way to clean equipment and knowledge about the transmission of HIV/AIDS has increased.

During the period January to March 1997, 1614 people were seen for counselling about STD/AIDS, drug problems and other personal issues. Over 600 IEC materials were distributed. Over 1100 containers of bleach and water were distributed to individuals, satellite centres and for demonstrations during training and orientation of needle exchange members. The total number of needles/syringes exchanged was 2007 (low because of insufficient supply).

The Asian Harm Reduction Network [14]

The Asian Harm Reduction Network (AHRN) was formed in 1996 by delegates from Asia to the 7th International Conference on the Reduction of Drug Related Harm in Hobart. A secretariat was established and a coordinator employed. A series of meetings established a structure for management of the Network, with a Steering Committee and an Executive mainly consisting of workers from harm reduction programmes in Asia.

The AHRN's mission statement emphasizes its role in supporting the existing programmes, and working for the implementation of new harm reduction programmes across Asia. In its short life, its membership of more than 800 has grown to include virtually every programme involved in the prevention of HIV infection among IDU in Asia, as well as several hundred other individuals and agencies interested in and supportive of this approach. AHRN is in a position to increase the ability of programmes to lobby for support for harm reduction without exposing individual programmes to potential adverse responses from national authorities, and to coordinate with regional funding and other agencies and programmes. It has been extremely active in these areas, in raising the profile of IDU in relation to national and regional HIV epidemics and in disseminating information across the region and globally.

Discussion

Our aim in reviewing these seven case studies here is twofold: first, to give examples of successful indigenous programmes for the prevention of HIV infection among IDU in Asia based on harm reduction principles; and second, to illustrate the need for local expression of these principles, which varies according to context — political, cultural, economic and so on.

The success or otherwise of these programmes can be measured in various, formal and informal, ways. In only one of the programmes (which began before prevalence had risen significantly) has there been demonstrated prevention of an epidemic of HIV infection among IDU [9]. This success is in accord with findings from many cities around the world, where the institution of NSEP while HIV prevalence was low has been associated with continuing low prevalence [15]. In the Asian region, most of these programmes have come into being only after HIV prevalence among IDU has risen, often to very high levels, as in Manipur in northeast India [16]. Controlling

HIV epidemics among IDU where prevalences are already high has been achieved in developed countries, but it has also been shown to be far more difficult than preventing increases from low levels [17,18].

This illustrates another important measure of success: these programmes, starting by meeting the immediate needs of their clients for primary health care and the means for protection against HIV infection, provide a channel of access to drug detoxification, treatment and rehabilitation. In many cases, these clients would not normally have had access to these services in any other way. Nevertheless, the primary goal of the programmes is not reduction in drug use, which is seen as complementary to primary objective of preventing HIV transmission.

Commonly, the programmes' experience when first starting is that their potential clients have a deep suspicion of authority, borne of years of neglect and repression unmatched by any caring gesture from the society in which they live — IDU in most Asian societies (as in most societies) are social pariahs, or even social enemies. Programme workers initially face hostility from their IDU clients; their motives are seen to be either to force the drug user into treatment or to be part of the government's drug control strategy. Overcoming this perception is often the first and major barrier that such programmes have to surmount. NGO can usually work in this area more easily than can government organizations, as the IDU are less likely to associate them with the government agencies' often mandatory and repressive approach.

The programmes have also found that the most effective way to overcome these barriers is to begin by meeting the expressed needs of their clients, rather than impose their own objectives. More often than not these needs include primary health care and programme workers recognize the illogicality of attempting to prevent HIV infection, which poses longer term threats to health, if more immediate and pressing threats are not also dealt with. The programmes' experience also demonstrates the almost universal lack of access to primary health care among IDU across the region.

A further common thread that emerges from the experience of these programmes is the necessity of building working relationships with the other facets of society that have influence over IDU lives. In particular, in Asia as elsewhere, this means police and public security. Police behaviour towards IDU can be one of the strongest determinants of whether the IDU behaviour will be conducive to transmission of HIV or not. If police can become involved, the awareness by the IDU of the impact of police practices will be raised, and the IDU will have a larger range of options for what they often see as a no-win situation. For harm reduction practices, police can be the worst enemy or the best friend, as exemplified by some of the experiences recorded here. Similarly, working with drug treatment agencies often provides the agencies with a clearer understanding of what can be done, short of abstinence based approaches, which will be beneficial to the lives of IDU, and a realization that this approach often leads to increased entry into treatment, often with greater commitment.

In general, strategies to prevent the transmission of HIV among IDU come down to the final common pathway of the sharing of injecting equipment — breaking this sharing nexus breaks the chain of transmission. How this is done will vary, and NSEP are not the only way. Disinfection of used needles and syringes before reuse is also likely to have some impact, but the experience here illustrates the necessity of devising locally acceptable strategies. Bleach as a strategy was devised in one particular cultural setting — that of San Francisco in the mid-1980s [18]. For some of these programmes, bleach provides an acceptable second line; for others, it is not appropriate locally and other means of disinfection have been sought.

Much has been learnt about the effective prevention of HIV among IDU in Asia; particularly that it can be done and that it is worth doing. These programmes represent enormous effort on the part of dedicated individuals; the challenge now is to increase the programmes in number and coverage throughout Asia to a scale commensurate with the scale of the epidemic.

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'Superstar' and 'model brothel': developing and evaluating a condom promotion program for sex establishments in Chiang Mai, Thailand

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Objectives: We developed and evaluated a multifaceted AIDS prevention program to increase condom use among sex workers in the city of Chiang Mai, Northern Thailand.

Subjects and methods: A year-long intervention targeted sex workers, brothel owners and clients, promoted cooperation between these groups and the public health office and established a free condom supply for sex establishments. Nearly 500 women from 43 establishments took part in the program, encompassing nearly all direct sex workers in urban Chiang Mai. The intervention included repeated small-group training sessions for sex workers in which experienced women ('superstars') acted as peer educators. The 'model brothel' component encouraged all brothel owners in Chiang Mai to insist on mandatory use of condoms by sex workers and to encourage clients to use condoms. Before and after the intervention, specially trained volunteers posing as clients tested a subsample of sex workers to see whether they insisted on condom use.

Results: The intervention was well received by sex workers and obtained strong support and cooperation from brothel owners. Before the intervention, only 42% (10/24) of women surveyed by volunteers posing as clients refused to have sex without a condom, even when the client insisted and offered to pay three times the usual fee. Following the program, 92% (72/78) refused; 1 year later, 78% (69/85) refused during the same scenario.

Conclusions: An innovative program directly involving sex workers as peer educators and enlisting the support of brothel owners and operators can result in improved condom use over time. Lessons learned from this program may be applicable elsewhere.

AIDS 1995, **9** (suppl 1):S69–S75

Keywords: AIDS, HIV, prostitutes, Thailand, Asia, women, intervention.

Introduction

The rapid spread of HIV among female sex workers in Thailand has eclipsed the earlier epidemic of HIV infection among injecting drug users [1–3], particularly in the northern provinces of Thailand bordering Myanmar and Laos [4]. In June 1989, the first national sentinel serosurvey discovered a prevalence rate of 44% among direct (brothel-based) sex workers in Chiang Mai province [5]. Since that time, similar rates among direct sex workers in urban Chiang Mai have been confirmed [6], with seroprevalence rates of up to 65% found in some brothels [7]. Recent studies have shown HIV infection rates of 12–15% among young male army conscripts and 16% among male patients with sexually transmitted diseases, foreshadowing the spread of HIV to the general population [8–10].

The initiation of young women into the sex industry in Thailand, as in many parts of Asia, arises amid despe-

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Sponsorship: This work was funded by the Chiang Mai Provincial Public Health Office, the Program for Appropriate Technology and Health (PATH) and NIMH Grant MH42459, CAPS International Collaborative Studies.

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rate social and economic conditions [11]. These women tend to be young (less than 20 years), from impoverished families of Northern Thailand and Myanmar, have little education and often speak local dialects and little Thai [12]. The turnover of women within brothels is high; within a year as many as 50% may move to another brothel or out of the sex industry [13]. Having earned sufficient money or having paid off the debt to a brothel owner incurred by her family, a woman may return to her village or seek other employment [14].

In 1989, in response to the escalating HIV epidemic among sex workers and their clients, public health officials in Chiang Mai implemented a variety of programs to increase the use of condoms. Radio and television media campaigns were initiated along with traditional health education measures such as posters, pamphlets and lectures at sexually transmitted disease clinics; the latter met with very limited success, possibly due to their didactic nature and the resulting low participation of sex workers and clients. Consequently, the Chiang Mai Provincial Public Health Office, in collaboration with the Program for Appropriate Technology in Health, designed and implemented a multifaceted intervention that targeted nearly all sex workers in the urban area, as well as brothel owners and clients. We describe this program in detail including educational approaches, problems associated with implementation, methods of assessing efficacy and an evaluation of the program's impact on condom usage.

In 1991, the Thai National AIDS Committee adopted an official policy, the 100% condom program, to encourage condom use in the sex industry [15,16]. We believe that the project described here provides an acceptable and sustainable model for the implementation of this policy as well as one that may be applicable to the sex industry in other settings.

Subjects and methods

Overview

This project was a demonstration program that began in October 1989, with the final evaluation in February 1992. Funding was provided by the Chiang Mai Provincial Public Health Office (Ministry of Public Health) and the Program for Appropriate Technology in Health under a grant from the USAID/Thailand Mission. The project had two main components called 'superstar' and 'model brothel' (Table 1), which targeted sex workers and also owners/operators of commercial sex establishments with the objective of increasing the consistent and correct use of condoms with all clients. The intervention strategy involved elements of education, motivation, reward and support.

Preintervention interviews

In order to identify factors associated with a low usage of condoms and to help guide development of the intervention, informal open-ended discussions were conducted with clients and sex workers. A convenience sample of approximately 100 clients from a majority of Chiang Mai brothels underwent individual interviews before they engaged sex workers. None of the men who were interviewed were overtly intoxicated. The interviews were conducted by the Principal Investigator. These clients frequently reported that condoms were inconvenient or difficult to obtain. Common beliefs expressed were that 'real men do not use condoms' and that men were quite capable of selecting 'clean' or HIV-free sex workers.

Table 1. Components of 12-month condom promotion program.

Preintervention interviews with sex workers and clients
'Superstar' component
Identify 'superstars', (experienced) sex workers who serve as peer educators
Small group training sessions for all sex workers at brothels every 3 months
Improve knowledge and perceived risk of AIDS, motivate consistent condom use, teach strategies for handling difficult clients
On-going discussion groups with sex workers to improve program
'Model brothel' component
Identify influential brothel owners to help organize brothels
Encourage all brothel owners/operators to establish policy of mandatory condom use by sex workers
Cost–benefit approach used as motivation
Supply of free condoms to brothels
All clients must have a condom before entering room of sex worker
On-going discussion groups of owners/operators to resolve problems

Individual interviews with approximately 50 direct sex workers revealed that although most had heard of AIDS, few clearly understood the information provided in prevention campaigns. For example, many did not believe themselves at risk due to multiple sex partners because they understood this to mean having sex with more than one person at the same moment. The vast majority feared that if they refused clients who would not use condoms, this would create unacceptable problems with the brothel owners and reduce their income.

'Superstar' program

Sex workers

The 'superstar' component of the intervention targeted all direct female sex workers in the urban area of Chiang Mai. Direct sex workers carry out their work in brothels, in contrast to indirect sex workers who work in establishments where the primary service offered is not sexual; they may be hostesses in cocktail lounges, waitresses or masseuses in massage parlors; sexual encounters are individually negotiated by either the client or the sex worker. Street walkers meet prospective clients along the streets; this group constitutes only a small proportion of the total number of sex workers in Chiang Mai. A census in 1989 by public health officials recorded 1881 female sex workers in 109 sex establishments in the Muang District of Chiang Mai (Chiang Mai Provincial Public Health Office, unpublished information, 1994). Of these

women, approximately 500 worked in 43 brothels in the urban area.

Women were recruited by first obtaining permission from owners or managers of brothels and sex establishments and then approaching all women in their place of work. Public health workers went to the sex establishments and spoke directly to the women to explain the intervention and request their participation. Nearly all the women approached agreed to become involved; consent to participate was obtained verbally.

The small-group training that targeted sex workers was undertaken in four phases: November 1989, February 1990, September 1990 and December 1990. In order to provide sufficient staff, several other governmental organizations including Nakorn Ping Provincial Hospital, the Sexually Transmitted Disease Center, the Faculty of Medicine at Chiang Mai University and the Communicable Disease Control Office (Ministry of Public Health) were also invited to join the project, a collaboration that was met with enthusiasm. Each organization assembled a training team responsible for a certain number of sex establishments. The core project staff operated train-the-trainers workshops to standardize the educational program and approach.

'Superstars'

'Superstars' were volunteer sex workers who were trained to aid communication among their peers, public health workers and brothel owners. These women were selected by project staff on the basis of their experience in the sex industry, leadership potential and acceptability as role-models. One to three 'superstars' were selected at each sex establishment; new ones were chosen at each successive small-group training session if the previous 'superstar(s)' had moved out of the brothel. Their main role was to motivate and encourage other women in the brothel, especially those who were new to the brothel. They assisted in educating their peers about AIDS, condom use and managing uncooperative clients. Focus groups of 'superstars' were used to identify techniques for dealing with difficult clients who were drunk, refused to use a condom or had a prolonged ejaculation time. These techniques were incorporated into the training sessions given by the public health workers.

Educational component

Fifteen teams of three or four public health workers conducted 2-h training sessions with small groups (five to 10 sex workers) every 3 months for 1 year during the intervention period; each team was assigned to six or eight sex establishments. The curriculum of the sessions was specially designed to be additive; new information was given during each sequential training session, but each session also reiterated the information given in previous sessions. This reinforced the initial messages and also provided basic information to those who came into the program later (due to turnover of sex workers). Using this approach, the women were able to practise new skills between training sessions and gain personal experience with risk reduction. Information covered during the sessions included education on HIV transmission and AIDS, efforts to improve the concept of personal risk, instruction in and demonstration of the proper use of condoms and coaching on how to convince a reluctant client to use a condom.

The training sessions were conducted at the women's place of work and times were adjusted to suit the needs of each brothel. The small-group approach gave the women a rare opportunity to ask questions and express their concerns. Following each session, discussion groups were held to allow the sex workers to identify additional problems that needed to be addressed.

Methods used to convey information were designed to be appropriate to the sex workers, most of whom had little education. While AIDS educational materials were available in northern Thailand, none were geared toward sex workers. Videos were available but could not be shown as very few sex establishments owned the necessary equipment. Therefore, simple and clear flip charts using pictures were created to explain the modes of HIV transmission and symptoms of HIV disease. Focus groups revealed that most sex workers did not know how to use condoms properly, and most broken condoms apparently occurred from incorrect use. Wooden models of penises were employed for demonstration and practice. Interaction and discussion were encouraged and efforts were made to make the sessions enjoyable and fun. All women were given small gifts such as combs or mirrors for participating.

A positive approach based on hope for a better future, rather than fear of AIDS, was used to motivate women at small-group training sessions. The economic factors that drive young women into prostitution were openly acknowledged. Most sex workers did not want to be in that occupation for their entire adult lives. Consistent use of condoms was offered as a means of achieving their long-range goals which invariably involved leaving the sex industry. Behavioral change was self-reinforcing as the women became advocates for AIDS prevention.

Special games were developed to help the young women understand difficult concepts. We describe two of these here. In the 'pop-up' game, designed to develop the concept of personal risk, 10 male dolls representing clients were constructed with a moveable barrel hiding their genitalia. When the barrel was lifted, a moveable penis sprang up. On two of the 10 dolls, a red ribbon was tied to the penis, symbolizing HIV infection (20% prevalence rate). The sex workers were divided into two teams: one team always 'used condoms' and the other team 'used condoms' only when they thought a doll/client was HIV-infected. Each team took successive turns selecting a doll/client. The team that always 'used condoms' received points for all dolls selected. The team that wasn't required to 'use condoms' lost points for choosing a doll with a red ribbon, while receiving more points for choosing a doll without a red ribbon. After each sex worker had chosen many times, it became clear that

those on the team not 'using condoms' could be exposed to HIV even if only two in 10 men were infected. Implicit, of course, was the message that while a sex worker might forego the revenue from a client who refused to wear a condom, and thus earn less money, she would stay healthy longer and make more money in the long term.

The 'jigsaw game' was designed to teach recognition of the symptoms of HIV disease and to reinforce the fact that persons without symptoms (sex workers and clients alike) could be HIV-infected. Thirty cards were designed with pictures of people with symptoms of HIV disease: 10 with advanced symptoms, such as Kaposi's sarcoma, oral candida or pneumonia; 10 with early symptoms, such as weight loss, diarrhea or dermatitis; and 10 with no symptoms. The fact that the asymptomatic period of HIV disease is often the longest was explained by the public health workers. The object of the game was to arrange the cards into sets, and to name or describe the symptoms.

'Model brothel' program

Brothel owners/operators

The 'model brothel' program was developed to promote cooperation among brothel owners and encourage them to establish a policy of universal condom use. To induce peer pressure, we approached those brothel owners known to be most influential in organizing neighboring brothels in their subdistricts. Their cooperation was enlisted in encouraging the owners of surrounding brothels to institute a condom only policy. Within 1 month, all direct sex establishments were participating. Workshops and focus groups were held during which previously uninvolved brothel owners were invited into the program and given an opportunity to discuss concerns and find ways of resolving them.

A cost–benefit approach was used as motivation for policy change. With a condom only policy in place, it was estimated that a brothel with 30 women could save approximately 5000–6000 baht/month (US$200–240) on treatment of sexually transmitted diseases, a cost generally borne by the brothel owner. A potential loss of clients would be balanced by the sex workers' ability to work longer and more consistently if free of disease. If the sex workers felt supported in insisting on condom use and believed the owner to be concerned about their health, these improved relationships could improve the women's self-esteem and self-efficacy.

The brothel owners and operators also supported a system to help sex workers refuse clients who did not want to use condoms. Every brothel in the program posted a sign saying, 'We only welcome guests who use condoms'. The *mama san* (brothel manager) would talk to all clients about condom use before they entered the sex worker's room, explain that he must use a condom and ask to see if he had one. If the client had no condom, a free one from the Ministry of Public Health was offered or other name brands were provided for sale. If a sex worker was still unsuccessful in persuading the client to use a condom, she was instructed to give an excuse to leave the room, allowing the *mama-san* or a bouncer to intervene and manage the situation. These interventions were particularly important during the initial months of the project before the condom use policy came to be accepted by clients.

Condom supply

Before this intervention, few brothels had condoms readily available. Sex workers or clients had to purchase them at drug stores or obtain them through family planning or sexually transmitted disease clinics. Another study in this area had revealed that 70% of men who used brothels never or rarely brought condoms with them [11]. As part of this project, the Chiang Mai Provincial Public Health Office, with support from the Ministry of Public Health, supplied condoms to all sex establishments free of charge, approximately 60 000 per month to brothels and 36 000 to sex workers in indirect establishments. Either the brothel owner/manager or 'superstar' could pick up a supply of condoms twice a week at the public health office.

Survey of condom use

Several convenience subsamples of sex workers were evaluated before and after the intervention to estimate the extent of actual condom use. A baseline evaluation was conducted in February 1990 in which only 11 of the 43 brothels in the intervention were evaluated due to limited resources. In February 1991 and again in April 1992, two postintervention evaluations were conducted, this time in all 43 brothels.

To conduct our evaluation survey, we used 20 specially trained volunteers who posed as 'clients'. These volunteers were young men from local trade shops and small businesses who were reimbursed for their participation in the study. The volunteer 'clients' surveyed one in five women at each brothel. Surveys at a specified brothel were conducted simultaneously.

The condom use evaluation involved three steps. Initially, the 'client' would note whether the sex worker asked him to use a condom; second, he would insist on not using a condom and observe whether the sex worker refused; third, he would offer the sex worker three times her customary fee if she would have sex without a condom. If the sex worker insisted that he use a condom under all circumstances, he would pay her customary fee and leave. If at any point, the sex worker consented to have sex without a condom, the 'client' would make up an excuse for leaving (e.g. he didn't have the time or changed his mind) and depart. In all cases, the sex worker was paid her customary fee.

Results

Participation in the intervention

Owners of sex establishments were initially reluctant to take part in the 'model brothel' program; they feared a

loss of clients if condom use was made mandatory. The sex workers also feared loss of income, did not believe they could refuse clients insisting on sex without condoms and felt that brothel owners would not support mandatory condom use and would reprimand them if they insisted that clients use condoms. It became clear that uniform support and involvement of brothel owners and managers was critical to a successful intervention.

Through outreach and net-working with brothel owners, universal participation of brothels was achieved. Subsequently, almost all sex workers who were approached willingly agreed to take part in the program. In November 1989, 501 women attended the small-group training sessions; 491 in February 1990, 482 in September 1990 and 478 in December 1990. Differences in the numbers of sex workers at each stage of the intervention were due to fluctuations in the total population of sex workers. Only a very small number of sex workers were away from the brothels during the training sessions. Once the program was well established, neither the owners nor the sex workers reported a decline in the number of clients or in net income.

Evaluation of condom use

Before the intervention, a convenience sample of 24 out of 131 women (18%) from 11 brothels (approximately one in five women from each brothel studied) were evaluated by volunteers posing as clients (Table 2). Of these women, 42% succeeded in refusing a client who offered three times her customary fee to have sex without a condom. In contrast, 2 months after the intervention was completed, 26 out of 28 women (93%) of a different sample from the same subset of brothels refused clients in a similar scenario. This number diminished somewhat 1 year later at which time 13 out of 17 women (76%) who were sampled successfully completed all three steps of the evaluation.

Concomitantly, a postintervention evaluation of condom use was conducted with a convenience sample of 50 out of 349 women from the remaining 32 (out of 43) brothels in Chiang Mai. This gave similar results to the evaluation of the other 11 brothels. Two months after the intervention, 46 out of 50 women (92%) succeeded in all three steps of the evaluation. A year later, when another sample of 69 out of 361 women was surveyed, 56 (80%) refused sex without a condom during all three steps of the evaluation.

Discussion

We have described a multifaceted intervention program that encouraged the universal use of condoms in Chiang Mai brothels. This program was a demonstration project launched partly in response to the Thai Government's HIV-control program. The broader government program focused largely on the purchase and distribution of condoms; it also proposed sanctions against sex establishments where condoms were not used consistently, and included a media campaign targeting clients. In contrast, our program specifically focused on sex workers at their places of work and acknowledged the importance of targeting clients and brothel owners.

There were several important factors in the acceptability and sustainability of our program. First, universal endorsement by brothel owners was essential to supporting the womens' right to refuse clients. This was obtained by educating owners on the economic advantage of maintaining the health of the women. Second, we gained the full participation of sex workers; this was accomplished by appealing to their almost universal hope of returning to their homes and raising a family, which could occur only if they remained healthy. Third, the use of selected women as 'superstars' contributed to the sustainability of educational messages. Acknowledgement of these women increased their role as opinion leaders and allowed the use of peer pressure to promote behavioral change. Most important, these women were successful in teaching survival skills to sex workers who were new to the brothels.

Measuring the impact of our program on condom use was a difficult task given the overlap of other government prevention campaigns and the increasing stigmatization of sex workers. However, we feel confident that our assessment of rates of condom use, as measured by

Table 2. Insistence on condom use by sex workers as assessed by volunteer 'clients'.

	Sex workers (no.)	Evaluated (no.)	Sex workers who passed assessment (no., %)		
			Step 1	Step 2	Step 3
Brothels with pre- and postintervention (n = 11)					
Preintervention	131	24	17 (71%)	12 (50%)	10 (42%)
Postintervention (1991)	138	28	27 (96%)**	27 (96%)***	26 (93%)***
Postintervention (1992)	115	17	14 (82%)	13 (76%)	13 (76%)*
Brothels with postintervention only (n = 32)					
Postintervention (1991)	349	50	49 (98%)**	47 (94%)***	46 (92%)***
Postintervention (1992)	361	69	64 (93%)*	63 (93%)***	56 (81%)***

Step 1: sex worker asked client to use a condom; Step 2: sex worker refused client's request for sex without a condom; Step 3: sex worker refused sex without condom when client offered three times customary fee. *$P \leq 0.05$, **$P \leq 0.01$, ***$P \leq 0.001$, Fisher's exact test for the differences in proportion of women who passed each step in the preintervention evaluation compared to each postintervention evaluation.

volunteer 'clients', was accurate. It is unlikely that the sex workers were aware that they were being evaluated; the use of volunteer 'clients' was neither announced nor known to the sex establishments beforehand; all brothels were surveyed more or less simultaneously. Different volunteer 'clients' evaluated women in the same brothel so that the offering of more money for sex without a condom would not give away their purpose. In fact, our initial survey of clients had revealed that it was common practice for clients to offer more money for sex without a condom.

We believe that our volunteer 'client' method of determining condom use is more accurate than self-reporting by sex workers or clients. Social desirability may lead to exaggerated rates of reported condom use. In a 1989 study in Chiang Mai, self-reported condom use by sex workers was close to 90%, yet HIV seroconversion and sexually transmitted disease rates remained high [16]. In an intervention targeting sex workers in another northern Thai province during the same period of time, condom use was reported as increasing from 14 to 50%, yet only 17% of women said they would refuse to have unprotected intercourse if a client insisted [17]; in contrast, we found that 42% of sex workers that we surveyed insisted on condom use with volunteer 'clients' before the intervention. In 1991, 2 months after the intervention, 92–93% of all sampled sex workers refused volunteer 'clients' insisting on sex without a condom; 1 year later, this had decreased to 80%.

Following the relative success of a number of different demonstration projects, like the one described here, the Thai National AIDS Committee adopted the 100% condom program as official policy [15,16]. Under this policy, brothel owners are required to provide condoms to all clients and to advertise that only clients using condoms will be entertained. However, it does not specify any education or training program, or a plan for implementation or evaluation; it is up to officials in each province to devise their own strategies. As a result, any evaluation of the program has been indirect, such as monitoring condom usage through reports from male sexually transmitted disease patients who have had contact with sex workers. Self-reports of condom use by sex workers have increased since the campaign began [16]. However, HIV infection rates among military conscripts continue to rise, and HIV prevalence among sex workers, despite turnover, continues to be high [9,10]. Thus, although the government's 100% condom program may be affecting condom use to some degree, HIV transmission between sex workers and clients is continuing.

The demonstration project described here provides a specific strategy for increasing condom usage within brothels. However, there is no quick fix. Interventions targeting behavioral changes require a clear commitment by public health officials to maintain them on an ongoing basis in order to prevent relapses and to sustain the change [18]. Our program was dependent on ongoing outreach activites to reinforce messages, engage new peer leaders and insist on the support of the brothel owners. The program was staff-intensive, requiring the recruitment of workers not only from the Health Department but also from other governmental organizations in which this assistance was not a mandated part of the job. Thus, as a result of budgetary and staffing requirements, the Public Health Office fully supported the project for only a short period of time once the initial funding was expended. It is likely that the absence of an ongoing intervention in the face of the continual turnover of new sex workers explains the drop-off in condom usage over time that was evident in this study.

In addition, dependence on a free supply of condoms may result in relapsed behavior if these condoms become unavailable. This may partly explain immediate increases in the prevalence of sexually transmitted diseases during periodic failures of stocks of free condoms in Chaing Mai in the middle of 1990 (D. Douglas, personal communcation, Program for Appropriate Technology and Health). As a result, other condom interventions in another province promoted by the Program for Appropriate Technology and Health used a system of direct sales from drug stores to brothels to avoid being dependent on a free supply and to ensure sustainability of the program.

The present report covers brothel-based sex workers, but our program also targeted indirect sex workers through small-group training sessions. Indirect sex workers differ from brothel-based women in several ways. They are generally more highly paid, have fewer clients per day [19,20] and have been considered at lower risk of HIV infection. In 1989, according to government serosurveillance studies, 5% of indirect sex workers in Chiang Mai were HIV-infected compared to 44% of women in brothels [5]; this increased to 7.5% in 1993 [6]. Paradoxically, women in indirect establishments appear to be less likely to use condoms than brothel-based sex workers [7], and may have less freedom to negotiate and insist on their use. It is likely that with increased stigmatization of direct sex workers and sanctions against brothels, more young women will move out of brothels to work in places like coffee houses or massage parlors. It will therefore be important to specifically target indirect sex workers in AIDS prevention campaigns.

The alarming situation of HIV infection in Thailand necessitates the continuation and expansion of thoughtful behavioral and public health interventions. So long as the sex industry remains one of the few means by which young women can obtain rapid economic improvement, and since social norms allow both single and married men to visit sex workers, the goal of proper and consistent condom use in the sex industry must be a national priority. The intervention program described here demonstrates a means by which this goal may be achieved. The components of this project that contributed to its success, in particular universal support by brothel owners, an educational outreach to all sex workers, ongoing supplies of condoms and specific

targeting of clients, should be incorporated into other prevention programs in Thailand.

Acknowledgements

We thank David Celantano for reading the manuscript; Anan Labsomtob, Anussorn Sithirat and the staff of the Chiang Mai Provincial Public Health Office; Niwat Pruthithada and the staff of the Venereal Disease Control Center of Region 10; Chawalit Natpratan and the staff of the Department of Communicable Disease Control Region 10; Petchsri Sirinirund and the staff of Nakorn Ping Hospital; Decha Kuwudyakorn, Watchara Sonthichai and the staff of Chiang Mai Municipal Health Department; Waraporn Siriswang and Boonsiree Khochasin of Chiang Mai University for extensive support and participation in each step of this program; Pawana Wienwarie and Don Douglas, formerly of Program for Appropriate Technology and Health for technical support of this project, especially media production; Win McKeithen of the USAID Mission, Thailand; and all sex workers and brothel owners who took part in this program.

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STD/HIV intervention with sex workers in West Bengal, India

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AIDS 1998, **12** (suppl B):S101–S108

Keywords: Self-esteem, social empowerment, networking, socail mobilization

Prevalent perceptions about sex, sexuality and sex workers in India

In dominant discourses in India the term 'prostitute' is rarely used to refer to an occupational group who earn their livelihood through providing sexual services. Rather it is used as a descriptive term denoting a homogenized category, usually of women, that poses threats to public health, sexual morality, social stability and civic order [1]. Within this discursive boundary, sex workers systematically find themselves to be targets of moralizing impulses of the elite, through missions of cleansing and sanitizing, both materially and symbolically [2]. If and when sex workers figure in the political or developmental agenda, they become 'beneficiaries' of projects which aim to rescue, rehabilitate, reform, discipline, control or police them. They get 'saved' and put in 'safe' homes by charity organizations for their moral improvement. Developmental nongovernmental organizations (NGO) tend to 'rehabilitate' them through alternative employment generation activities which invariably yield too meagre an income for them to sustain themselves and their dependants. The police regularly raid their quarters and extract payments from them in the name of controlling 'immoral' trafficking. In addition, they remain labelled as 'fallen' women, seldom gaining acceptance in the society.

The prevailing discussions on sexuality and sexual practices frame the sex act as a necessary evil which can only become socially acceptable if it is practised within marriage for purposes of reproduction. Such understanding refuses to acknowledge sexual pleasure and an individual's right to that pleasure. The existing gender ideology that organizes the relationship between men and women further limits the recognition of a woman's sexual needs. Thus, attempts are made to ignore the implications of the social role that the sex workers play and to leave the prevalent inequality within the political economy of sexuality unquestioned.

Even when sex workers happen to be described in less negative or even sympathetic terms in popular discourses, they still do not get exempted from stigmatization or social exclusion. When they are represented as objects of pity, they are seen to be powerless, abused victims of aberrant male lust, who have 'fallen' into prostitution without any choice or hope, when no other recourse is left for them. Otherwise they make their appearance in the popular imagination as the self-sacrificing supporting cast of characters in literature and cinema, atoning their moral guilt by ceaselessly giving up their hard earned income, their clients, their 'sinful' ways and finally their lives to ensure the well-being of the hero or the society he represents. In either case they are refused enfranchisement as legitimate citizens, and are banished to the margins of the story and history. It is against this background that the HIV/sexually transmitted disease (STD) intervention programme was launched in Calcutta, India, targeting sex workers, considering them as the major source of infection.

STD/HIV intervention project with sex workers

The baseline survey

The rationale behind the survey was to design an STD/HIV control programme in Sonagachi, the red light district in Calcutta, West Bengal, India, as the control of STD in prostitutes is considered to be an effective public health intervention as far as controlling HIV is concerned [3]. Sonagachi is a sex workers district in Calcutta having an estimated number of 4000 sex workers residing in 370

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© Lippincott-Raven Publishers ISBN 0-41283-650-5 ISSN 1350-2840

brothels. Each brothel has about 5–50 sex workers under one madam and one room is occupied by one to three sex workers. The baseline survey was conducted by the All India Institute of Hygiene and Public Health (AIIH & PH), Calcutta, in collaboration with local NGO and community-based organizations (CBO). The survey looked into issues of social demography of the locality, mapped the sexual behavioural practices among sex workers, their clients and partners and assessed the prevalence of STD and HIV among them.

Methodology of the baseline survey

From April to June 1992, the baseline survey was conducted in the Sonagachi area following a pre-designed methodology. To ensure proper representation, multistage sampling was performed. A sample of 450 sex workers was selected at random to represent a reasonable estimate of the prevalence of STD among sex workers. Floating sex workers were excluded from the survey, as their temporary stay in the locality and their rapid mobility made it difficult to enumerate them [4–6]

For convenience, sex workers were stratified into three categories mainly on the basis of the professional rates they charged (category A, >Rs.100.00; category B, Rs.50.00–100.00; category C, <Rs.50.00; all rates charged per client). Access to water and sanitation services and possession of assets such as an electric fan, radio, television and furniture were also considered while categorizing the sex workers. The number of sex workers selected from each category was proportional to the total number of sex workers in them. About 12% of the total number of sex workers living in the locality were surveyed (Tables 1 and 2).

In general, six to seven sex workers were selected from each of the 65 brothels of Sonagachi. If any brothel had less than six or seven members, the deficit was compensated for from more populated adjoining brothels. Non-responders were also similarly replaced.

The premises of a local youth club in the heart of the red-light area was turned into a clinic for the duration of the survey (8 weeks).

Findings from the baseline survey

Sociodemographic aspects

Of the sex workers surveyed, 85% were between the ages of 15 to 29 years. The lowest recorded age was 13 and the highest 45 years. Literacy rates were very low and alcohol abuse common among those surveyed. Poverty was the dominant reason cited for entering prostitution. Of the 450 sex workers surveyed, 40% had children, 45% used contraception in some form and only 27% used it regularly. Only 2.7% used condoms always or often; 69% of the sex workers had some knowledge about STD and 31% had heard of HIV/AIDS. As for sexual practices, 98.7% practised penovaginal sex; 78% also practised oral sex.

Table 1. Number of sex workers (SW) surveyed.

Category	Brothels (*n*)	Brothels selected (*n*)	SW in all brothels (*n*)	SW selected and examined (*n*)	% Of surveyed
A	78	12	724	81	11.1
B	187	28	1772	209	11.7
C	97	25	1168	160	13.7
Total	362	65	3664	450	12.2

Category A, >Rs. 100.00 per client; category B, Rs.50.00–100.00 per client; category C, <Rs.50.00 per client.

Table 2. Sexually transmitted disease infection among sex workers.

Infections	Sex workers	
	n	%
Single	186	51.7
Double	91	25.3
Multiple	13	3.6

Laboratory results

Out of 450 sex workers surveyed, blood samples and vaginal smears were collected from 360. Smear examination of endocervical specimens showed 10.5% were positive for *Neisseria gonorrhoea* and on culture 4.9% were positive. *Trichomonas vaginalis* was detected in 11.1% and *Candida albicans* in 23.2%. Serological tests conducted for syphilis found 58.8% reactive by Venereal Disease Research Laboratory (VDRL) test and 63% by *Treponema pallidum* haemagglutination (TPHA) test. Out of 360 sex workers, 80.5% were found to be infected with one or more STD causative agents. Among the 151 asymptomatic cases detected, 124 (82%) were infected with one or multiple STD causative agents. Five out of 442 serum samples were positive for HIV infection, the positivity rate being 1.1%. Four of these had syphilis also.

Initiating the project as an operational research programme

Initiating the project

There are various models of targeted STD/HIV intervention for sex workers, from mandatory screening to giving sex workers themselves a central role in health promotion [7]. The Sonagachi intervention programme attempted to give sex workers a central status within the programme right from the beginning. The leadership tried to imbue a genuine spirit of partnership between the project team and the community of sex workers they worked with. The very strategy of the intervention was considered at a point when there were no such tried and tested designs or established strategies of empowering sex workers. However, in Thailand, a model was tried invol-

ving brothel owners in overall planning and design [8]. The brothel owners and their associates who control the trade were given authority to run this programme. Though this programme was successful in increasing condom use, its sustainability and replicability were not tested. The conceptual basis of the Sonagachi model is different from that of the Thailand model on three counts: (1) in the Sonagachi model sex workers' needs and interests were given prime importance as opposed to the Thailand model. They were given the central role in planning and designing the intervention programme; (2) the strategy of the Sonagachi model was to give decision-making power to sex workers themselves; (3) part of the strategy of the Sonagachi model was to address the structural issues for which the project activities had to move beyond the geographical boundaries of the red-light area [9].

Right from the beginning, the programme management decided to adopt a very flexible approach so that the programme could easily be adapted to the changing circumstances and could be remodelled with the shift in perceptions of the programme workers as their experience of working with sex workers increased. In fact, one of the desired outcomes of the programme was to come up with a model for such work which could then be replicated with local variations in different red-light areas. The principal emphasis of this model was real and active involvement of the sex workers at every level of the programme.

Basic approaches of the intervention programme

The basic approaches that the intervention programme adopted can be summed up as three 'R's: respect, reliance and recognition. That is, respect towards sex workers, reliance on them to run the programme and recognition of their professional and human rights [10]. In practice, the project focused on translating this approach into a relationship of mutual trust and rapport between the community of sex workers and the staff members of the project. From the very beginning, as already mentioned, there was a very real acceptance of sex workers as sex workers, with no desire to 'rehabilitate' them. As no move was made to disrupt the on-going sex trade or motivate the sex workers to switch to other occupations, the programme did not pose any immediate or ostensible threat to the local power-brokers of the sex industry who, in turn therefore, did not hinder the programme. With the local controllers of the sex trade, negotiation and highlighting of mutual benefits and shared interests was found to be a strategically effective approach. More importantly, the programme recognized and actively addressed the issue of 'empowering' the sex workers of every status within the industry as an essential component for sexual behavioural change and improvement of their health status.

Designing the peer education programme

Selection criteria

Peer educators were selected from among the community of sex workers on the basis of certain criteria. To be a peer educator, a sex worker had to be in the profession for at least a year and she had to have proven communication skills. The project also looked for elements of leadership quality, which could then be further enhanced through orientation and training.

It was found that sex workers who had children were more eager to become peer educators, in order to give a more socially acceptable identity to their children who can claim that their mothers are workers in a state-sponsored programme. Those who had *Babus* (or regular partners) were also more keen as the *Babus* wanted their partners to gain in status through this involvement. However, once the project took off, more and more sex workers became eager to be peer educators, even the ones who had very busy professional lives.

Training module for peer educators

At the initial stage, those selected as peer educators were given 6-week training with components of class-room teaching as well as field-based orientation, on the issues of HIV/AIDS.

The structure of the training module was deliberately kept open-ended and flexible to allow for autonomy of thought and to facilitate appreciation and accommodation of the existing skills and knowledge of the peer educators. Over and above the technical training, emphasis was given to further developing the leadership qualities of the peer educators to encourage them to take up initiatives within the community and the project beyond the narrow roles as extension workers.

Going beyond the behavioural change model

Very early in the life of the Sonagachi project, the peer educators, with the empathetic support of the project management, recognized that even to realize the very basic programme objectives of controlling transmission of HIV and STD it was crucial to view sex workers in their totality (as complete persons with a range of emotional and material needs, and not merely in terms of their sexual behaviour) as it was essential to address the range of issues that determine the quality of their lives and to locate these issues in the broader context within which they live.

Sociostructural barriers

In Sonagachi, as in any sector of the sex industry, the sex workers are in a situation of powerlessness which is both extreme and brutal. Within the well-marked hierarchy of the sex industry, sex workers have much less power than the pimps, madams, landlords and other interest groups of the locality and of the wider society. While, traditionally, sex workers can move around within the red light area without any restriction, except for the more highly priced workers during business hours for the sake of maintaining their 'exclusivity', contact between sex workers from different brothels is covertly restricted by the power-

brokers of the industry by inducing a climate of mutual suspicion and competition. The peer educators first had to break down these barriers of suspicion between sex workers and allay their doubts and cynicism that was also extended towards any new ideas.

While promoting the use of condoms, the peer educators soon realized that, in order to change the sexual behaviour of sex workers, it was not enough to enlighten them about the risks of unprotected sex or to improve their communication and negotiation skills [11]. Sex workers first needed to value themselves enough to think of taking steps to protect their health and their lives. Even when fully aware of the necessity of using condoms to prevent disease transmission, individual sex workers may feel compelled to jeopardize their health for fear of losing their clients to other sex workers in the area unless it was ensured that all sex workers were able to persuade their clients to use condoms for every sexual act. Some sex workers may not even be in a position to try negotiating safer sex with a client as they may be too closely controlled by exploitative madams or pimps. Moreover, if a sex worker is starving, either because she does not have enough clients or because most of her income goes towards maintaining a room or meeting the demands of pimps, madams, local power-brokers or the police, she may not be in a position to refuse a client who cannot be persuaded to use condoms.

In order to motivate the larger body of sex workers to change their sexual behaviour and also to enable and encourage them to participate in project activities and take best advantage of the services provided by it, the peer educators had to ensure that the entire body of sex workers in the locality developed a positive self image, had self-esteem and confidence and had an increased access to power so that they can articulate their needs and have an interest in investing in and planning for their future [12]. They also realized that given the asymmetrical power relations within the sex industry and their social exclusion, the only way the sex workers could gain greater control over their own bodies, sexuality, income, health or life was through mutual support, collective bargaining and united action.

Thus the project, by its very design, went beyond the 'behavioural change model' and instead concentrated on the broader and more fundamental issue of social power relations which shape people's 'behaviour' and adopted strategies for empowerment of sex workers.

Consequences of the intervention project

Formation of the sex workers' organization

The most important direct fallout of the intervention was the establishment of the Durbar Mahila Samanwaya Committee (DMSC) as a forum of sex workers, distinct from the funded project. While working on the issue of STD/HIV, the peer educators soon realized they cannot do so in isolation, without addressing the other issues related to the lives and profession of sex workers. In order to do so, they formed an inter-link committee with the representatives of 12 red-light areas of Calcutta, which later developed into DMSC. In less than 2 years from its inception this forum now has about 1000 fee-paying members and about 25 000 associate members who are all either sex workers or children of sex workers. DMSC, at its present formative stage, is primarily involved in crisis management on behalf of its member sex workers and has been taking steps to improve their immediate working conditions. The members of the committee have organized rallies and demonstrations against specific instances of trouble caused by local hooligans, against extortion and harassment by the local police, protested against forcible AIDS surveillance (for example, in September 1993, a group of doctors, working under a state institution in collaboration with an NGO, entered the Sonagachhi red-light area with police protection, and forcibly drew blood samples from 50 sex workers in the name of surveillance) and unauthorized vaccine trial (for example, in 1995, an HIV vaccine was tested on sex workers in the Bowbajar red-light district, Calcutta, without informing them or without their consent; it was also learnt that this vaccine did not have technical clearance from the World Health Organization or the Food and Drug Administration, USA) and have stopped eviction of individuals or entire groups of sex workers from their homes or localities. In November 1997, DMSC convened the First National Conference of Sex Workers in India, on the theme 'Sex work is valid work, we want workers' rights'. The conference was attended by 5000 sex workers from all over the country [13].

The long-term goals of the committee are to fight for full legal recognition of prostitution as a profession and demand decriminalization of adult prostitution. They also demand abolition of existing laws controlling the sex trade as these laws have historically acted against the interest of sex workers rather than penalizing those who exploit them. Finally, the DMSC aims to work towards forming a self-regulatory body made up solely of sex workers, along the lines of other professional bodies such as the Indian Medical Council or the Bar Association, which will act as the principal arbitrator of the sex industry. This professional body of sex workers would be responsible for ensuring that the industry abides by some minimum guidelines to safeguard the interests of working sex workers and also to prevent the forcible entry of unwilling women and minors into the profession.

Mobilization of sex workers

Currently, the committee is in the process of recruiting brothel-based as well as floating sex workers from all red-light districts of Calcutta and other parts of West Bengal and plans to start its branches in all areas where there are sex workers, in order to reach out their services to as

many sex workers as possible and also to consolidate their numerical strength to fight out their long-term political battle. Within a year they could open 50 branches of DMSC throughout the state of West Bengal.

Extending the domain of preventive care

Recently, the peer educators who formed the committee, with the help of the project, have started operating a HIV help-line, mainly for helping HIV-seropositives and AIDS patients and their families to cope with the social and psychological traumas associated with being HIV-positive. When they come to know of individuals who have contracted HIV/AIDS, teams from the committee visit them in their locality to extend moral and material support and also to sensitize the local community. The significance of this service is not restricted to affected sex workers alone but has broader implications. The thrust of this initiative is to challenge social constructions about AIDS patients in general, and the misconceptions and apathy among the health professionals in particular.

State-wide expansion of the programme

In 1995, peer educators carried out a rapid assessment of the sex trade in West Bengal under the supervision of the Project in order to map out a state-level intervention programme. They identified 254 red-light districts and areas in the state [14]. For the first phase, 30 red-light areas were selected on the basis of a linear scale for early intervention with the help of the UK Department for International Development (DFID; formerly the Overseas Development Administration, ODA) and the government of West Bengal. For various reasons the programme could not be taken up in more than one area. However, DMSC itself has started intervention initiatives in the other selected red-light areas since then, and within 6 months they could expand programmes to 30 other red-light districts in the state of West Bengal.

Political economy of sex workers' cooperative

One of the most significant steps that the members of the committee have taken to increase the economic security of its members is to register a consumer co-operative (Usha Multipurpose Co-operative Stores Ltd) in their own name in August 1995. They had to fight a long battle with the concerned authorities to force them to accept their professional status as sex workers rather than hiding behind the more 'virtuous' label of housewife, as was suggested by the officials involved. Through this cooperative they plan to start a crèche facility for children of sex workers during business hours which will also give employment to out-of-work sex workers. They have already started a savings and credit scheme for the co-operative members. Recently they have also undertaken social marketing of condoms in Calcutta and other districts of West Bengal through a special team of members, the Basanti Sena. They are very emphatic that the cooperative is not meant for economic 'rehabilitation' of sex workers who are in the trade, but is designed to provide a financial resource for them to fall back on in moments of crisis, to minimize their economic desperation and create a space for negotiation. Moreover, they hope that the Basanti Sena will not only travel around different parts of the country for social marketing of condoms, but will also help in acquainting more and more sex workers with the aims and objectives of the committee.

The registration of the cooperative also marks an important strategic advantage for the DMSC in their struggle to re-frame the definitions and meanings of their occupation. Members of the committee hope to use the fact that a state institution, The Ministry of Co-operation, Government of West Bengal, has formally recognized prostitution as the cooperative member's profession, as a leverage in their campaign for complete legalization of prostitution. This they see as a crucial gain as they realise that, to improve the material circumstances of their lives and their working conditions, they have to negotiate with and contest the ways in which dominant discourses describe them.

A rolling stone gathers no moss

A recent development is perhaps the strongest indicator of how the strategy of empowerment that the intervention project followed has had far-reaching effects. A group of six male sex workers operating in, and around, the red-light areas of central Calcutta approached DMSC and the project representatives with a written petition demanding that they too be included in the committee and its programme. The project management and the committee members responded positively and promptly, as the plight of the male sex workers is no less pitiable than that of the women involved in the trade. Moreover, their legal status is even more precarious as the Sodomy Act of the Indian law penalizes anal intercourse. Since then the committee has involved about 160 male sex workers as active members who are also accessing services of the project.

Obstacles encountered

A programme of this kind, working towards empowering one of the most deprived sections of the society, obviously encountered various obstacles, both from within the sex industry and more critically from among the elite groups of society who feel threatened by any change in the status quo and the existing social and political power equations [15].

From within the trade, the greatest challenge was to instil a spirit of community among the sex workers and improve their self-esteem (the broad description of 'community' as defined by the Joint United Nations Programme on HIV/AIDS is 'a group of people who has something in

common and will act together in their common interest'). The most difficult task was to evolve an effective strategy and appropriate work plan to combat the dominant social discourse regarding them as 'fallen'. However, the principal philosophy and strategy of the project of treating sex workers as responsible workers, both in society and within the project, and later the formation of DMSC, the sex workers forum, meant that this issue was adequately addressed right from the beginning.

The power brokers of the sex industry were other potential sources of threat to the project. Through strategic negotiation and emphasizing common interests, these people could be involved in many cases, though not without reservation, in various project activities..

The major obstacle to the project, as identified by the project staff, are not the local thugs but the power holders and representatives of the establishment who include administrative personnel and medical professionals. These persons obstructed and are still obstructing the policy and strategy of empowerment in all possible ways. This section of society feel, that to control disease among them, the sex workers have to be bullied and coerced but cannot be given the autonomy or power to take control of their bodies and health. The project has still a long way to go and many a battle to fight before it can influence this deeply entrenched dominant ideology of sexuality and sexual morality.

Issues of sex and sexuality

The experience of the project shows that the very fact that the sex workers are given recognition and respect as legitimate workers challenges some deeply held social constructs about sex and sexuality, from which obviously the sex workers themselves are also not exempt. In fact, ideologies of gender, sexuality and class intersect to create the conditions of deprivation of sex workers, and the success of any intervention programme working with sex workers depends on the possibilities the project can create for the sex workers to negotiate and re-interpret the dominant discourses that frame them.

Interestingly, even among feminists, who have historically challenged, both in theory and practice, many of the patriarchal biases in dominant discourses and ideology, there are deep 'moral' dilemmas as far as issues of sex and sexuality in general and prostitution in particular are concerned [16]. While being ready to grant certain human rights to the sex workers, many feminists, human rights activists and the general public alike are still instinctively unprepared and ideologically unequipped to rethink issues of sex and sexuality with the urgency and seriousness of purpose that is required, along with issues of class and gender equity. The Sonagachi project, through its various activities, could unravel the importance and impact of existing ideology and its strength in hindering the health intervention programme.

Monitoring and evaluation

Internal systems

The project has an elaborate and on-going system of recording the field activities, monitoring the performance of the project and evaluating its impact. Peer educators report their activities in a pre-designed format every day. Social workers who supervise and administer the project activities give weekly and monthly reports. There are regular monthly staff meetings, focus group discussions, meetings of field committees, the project team and grievance redresser forums, outcomes of which are recorded and analysed. Apart from serving the purpose of monitoring the day-to-day developments, these various structures also ensure democratic functioning of the project as a whole, giving regular opportunity to project staff at all levels including the peer educators to assess the quality and volume of their work and suggest measures for improvement. This system also ensures that the peer educators are actively involved in the decision-making process of the project in real terms.

For quantitative and technical assessment of the impact of the project, repeated cross-sectional surveys are carried out by the project team. Following the baseline survey, two other evaluation exercises have been carried out. One of the most important indicators of change is considered to be condom use practices [17], which were judged through self-addressed questionnaire in successive surveys (Table 3). There was a significant increase in condom use by the clients of the sex workers.

This increase in condom use is not due to information, education, communication (IEC) activities alone but is due to 'peer pressure' and effective networking among the sex workers, as can be verified when the increase in condom use is compared with the duration of the profession (Table 4).

Sex workers, within a short span of time after joining the trade, pick up the issue and enforce condom use by their clients mainly through peer groupings and peer pressure tactics.

Assessing rates of STD incidence and prevalence is a way of evaluating the impact of an intervention [19]. It is now widely accepted that declining rates of STD infection as a result of an intervention act as a good indicator of the effect the intervention is likely to have on the HIV incidence rate [20]. The fall of VDRL seropositivity rate in 1995 compared to 1992 is an important indicator of behaviour change which is observed in Sonagachi (Table 5).

The HIV prevalence in the consecutive community level surveys [21] shows a slight increase over the years, which is rather expected as the condom use practice was not 100% (Table 6).

Table 3. Percentage of sex workers using condoms [18].

Usage period	Always (%)	Often (%)	Total (%)
1992 (April–May)	1.1	1.6	2.7
1993 (Nov–Dec)	47.2	22.1	69.3
1995 (Aug–Sept)	50.1	31.6	81.7

Table 4. Correlation between use of condom the previous night with duration in profession during 1995.

	Duration in profession (months)		
	>2	>3	>6
No. of acts	75	102	196
No. protected	36	57	124
% Protected	48	56	63

Table 5. Results of serological tests for syphillis (1:8 and above dilution) in three consecutive surveys.

Year	Tested (*n*)	VDRL+ (%)
1992	417	25.42
1993	607	28.5
1995	475	14.1

VDRL+, positive Venereal Disease Research Laboratory test.

Table 6. HIV prevalence rate found in three consecutive surveys.

Year	Tested (*n*)	HIV+ (*n*)	HIV+ (%)	95% CI
1992	442	5	1.13	0.15–2.11%
1993	607	7	1.15	0.3–2.11%
1995	582	28	4.81	3.07–6.55%

CI, confidence interval.

External evaluation

In 1995, ODA commissioned an external evaluation of all aspects of the project [22]. The external evaluation team found the project to be perhaps one of the best interventions for sex workers in the world. The evaluation team particularly appreciated the enthusiasm and intensity with which the intervention activities are conducted by the project. The philosophy towards prostitution and attitude towards sex workers as embodied in the project was identified as the key factor making the project an exceptional one. It was felt that to capture the true spirit and the real impact of the project, the regular evaluation should broaden its scope beyond measuring the effects through STD and condom use levels and focus on non-clinical aspects of the project related to the empowerment of sex workers and develop appropriate methodology and indicators for this purpose. Also, the evaluation methodology of the technical components ought to be consistent and the methods used for assessing condom use or STD prevalence should not be changed from one survey to another. The project is now working on these suggestions of the external evaluation.

Success perceived by the community

One of the major indicators that the sex workers find the project intervention relevant and useful is the fact that, during the life of the project, their participation in, and use of, project components have increased remarkably in intensity and volume; the peer educators and also general members of the sex workers community access all the project services with enthusiasm and appreciation. In addition to the efficacy of the services, it is the spirit of respect and democracy and the sensitivity with which these services are rendered that facilitate greater access by sex workers. That there have been perceptible changes in the quality of their lives, since the intervention started, is indicated by the range of activities they have undertaken; this suggests an aspiration to improve the quality of their lives, and gain greater control over the circumstances that govern their lives. These activities range from starting literacy training for themselves, to running crèches for their children and the cooperative and forum operations. The degree of self-respect, dignity and social identity that sex workers have acquired through their involvement with the project is valued by them as the most important achievement of the project. On the other hand, the project staff considered that these are perhaps the strongest tool that the project has managed to develop which will enable it to achieve its objective of controlling STD/HIV.

Future development

Sustainability

Any sound enterprise craves sustenance; it is crucial to sustain the project continuously to reap benefits for the sex workers. With this in mind, the project has considered certain activities at the social and economic levels.

At the social level, the project has started advocacy and negotiation with civic bodies demanding proper arrangement for basic amenities to improve the quality of life of the sex workers [23]. Recently the Calcutta Metropolitan Corporation has donated land for the construction of the offices of DMSC, the sex workers' organization.

At the economic level, the following has been planned: (1) health insurance and social security schemes, which will provide health services including laboratory services; it is conceived that money charged for such services will sustain them; (2) the entire Sonagachi project will be converted into a centre for sexual health with a comprehensive research and training wing. To facilitate the above, restructuring of the organization of the project is taking place that will be along the lines of a workers' collective and will include sex workers who will run the project.

Replication

Based on a rapid assessment survey conducted by DMSC in collaboration with AIIH & PH Calcutta, the DMSC will expand the programme to all the districts of West Bengal with or without assistance from external agencies. The STD/HIV intervention programme will provide necessary support as a facilitator.

Conclusion

The most important lesson learnt from the project is that to improve the health status of, and control STD/HIV infection among, an economically deprived, politically marginalized and socially stigmatized group such as sex workers, it is not enough to design a technically sound and efficient intervention programme. What is crucial for the success of any such intervention is to contest the social and structural power relations and ideologies that put such communities in such a vulnerable position in the first place. Unless such structural obstacles are challenged at a much broader level, any micro-intervention cannot hope to bring about behavioural changes which will result in disease prevention. While working on STD/HIV with sex workers, it is of crucial importance to keep in mind that the issues of class and gender have significant bearing on their ability to access the intervention services and take preventive measures [24]. The Sonagachi project has thrown up a whole host of issues about gender, poverty and sexuality that have to be debated, defined and re-defined within the process of a struggle itself. The experience of the project shows that for a marginalized group to achieve the smallest of gains, it becomes imperative to challenge an all-encompassing material and symbolic order that not only shapes the dominant discourses outside but, and perhaps more importantly, historically conditions the way the participants negotiate their own locations. The significance and historical importance of the Sonagachi project lies in the fact that through its innovative and flexible approach it has been able to create the real possibility of such negotiation, through the mobilization of the sex workers' community which is bound to have far-reaching impact not only on the lives of sex workers but on society in general.

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Pergamon

0277-9536(94)00165-0

Soc. Sci. Med. Vol. 40, No. 7, pp. 931–943, 1995
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0277-9536/95 $9.50 + 0.00

TRANSFORMING AIDS PREVENTION TO MEET WOMEN'S NEEDS: A FOCUS ON DEVELOPING COUNTRIES

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Abstract—As currently conceived, the global AIDS prevention strategy consists primarily of three interrelated tactics: (1) encouraging people to reduce their number of sexual partners; (2) promoting the widespread use of condoms; and (3) treating concurrent STDs in populations at risk of HIV. This three-pronged attack, however, is inadequate for meeting the protection needs of many of the world's women. Disproportionately poor and with little power to negotiate the terms of sexual encounters, women often cannot avail themselves of these life-saving strategies. Women need both a new commitment to addressing the underlying inequities that heighten their risk, and new technologies that provide them with a means of HIV protection within their personal control. This article makes the case for restructuring AIDS prevention by describing the growing risk of HIV infection faced by women throughout the world, examining the serious limitations of the contemporary AIDS prevention strategy in meeting women's needs, and exploring how new approaches—including a shift toward a more 'community organizing' approach to AIDS prevention—could help women exert more control over their sexual and reproductive lives.

Key words—women, AIDS prevention, human rights, community organizing

INTRODUCTION

As currently conceived, the global AIDS prevention strategy consists primarily of three interrelated tactics: (1) encouraging people to reduce their number of sexual partners; (2) promoting the widespread use of condoms; and (3) treating concurrent STDs in populations at risk of HIV. Together, these strategies constitute the backbone of the 96 million the U.S. government spent on AIDS prevention in developing countries in fiscal year 1992 [1]. This three-pronged attack, however, is inadequate for meeting the protection needs of many of the world's women. Disproportionately poor and with little power to negotiate the terms of sexual encounters, women often cannot avail themselves of these life-saving strategies. Women need both a new commitment to addressing the underlying inequities that heighten their risk, and new technologies that provide them with a means of HIV protection within their personal control.

Ultimately, empowering women to have more control over their sexual lives will require a fundamental change in the dynamics of male/female relations and a concerted effort to eliminate the inequities that leave women economically dependent on men. In large measure, women's vulnerability to HIV infection derives from their low status in society. Reducing their vulnerability will mean changing the cultural beliefs and gender stereotypes that perpetuate the belief that women are inferior to men.

Empowering women will also require redefining what it means to be male. In many societies, the right to dominate women is considered the essence of maleness itself. Culturally created norms tolerate, indeed encourage, sexual behavior by men that puts both them and their partners at risk. New norms must be established—through education and advocacy—that stress mutuality, responsibility and equality between men and women.

By its very nature, however, this type of fundamental social change takes time—time that women at risk of HIV today do not have. The AIDS epidemic therefore creates two imperatives: to begin in earnest to work on changing the underlying causes of women's vulnerability *and* to pursue vigorously every means possible to strengthen women's immediate ability to protect themselves in the face of the economic and cultural forces currently allied against them. This, in turn, means placing greater emphasis within existing AIDS programs on empowering women and committing major resources to developing new prevention technologies—like vaginal suppositories or foams lethal to the virus—that women can use without their partner's knowledge or consent.

This article makes the case for restructuring AIDS prevention by describing the growing risk of HIV infection faced by women throughout the world, examining the serious limitations of the contemporary AIDS prevention strategy in meeting women's needs, and by exploring how new approaches—including a shift toward a more 'community organizing' approach to AIDS prevention—could help women exert more control over their sexual and reproductive lives.

WOMEN AT RISK

The early and persistent stereotype of AIDS as a 'gay male' disease has perpetuated the notion that women are not at risk for HIV infection. The reality is that in sub-Saharan Africa and other regions of the world where HIV is predominantly transmitted through heterosexual intercourse, there are as many infected women as there are men. As of early 1992, the World Health Organization (WHO) estimated that over three million women in sub-Saharan Africa had been infected with HIV, along with half a million infants who contracted the virus before, during, or shortly after birth [2]. Worldwide, by the year 2000, the annual number of AIDS cases in women will equal or exceed the number in men [3, 4].

Surveillance data reveal the degree to which HIV has penetrated vulnerable female populations. Among female sex workers, whose contact with multiple sexual partners increases their risk of having sex with someone who is infected, rates of HIV infection exceed 50% in some urban centers (Table 1). Sex workers, however, constitute only a small percentage of the women affected by HIV. Studies show that by 1992, between one-quarter and one-third of all women aged 15–49 had become infected in some large urban centers in East and Central Africa [2]. In some cities, between 15 and 34% of pregnant women presenting at prenatal care clinics are HIV-infected (Table 1).

In industrialized countries, such as the United States and the nations of Western Europe, the primary populations affected by HIV continue to be gay and bisexual men and intravenous drug users, the majority of whom are male. But here too, women now comprise the fastest growing population of persons living with AIDS and HIV infection [5]. AIDS became the leading cause of death for African American women aged 15 to 44 in the states of New York and New Jersey in 1987, and became the fourth leading killer of all U.S. women of reproductive age in 1993 [6].

A host of biological, cultural and economic factors conspire to heighten women's vulnerability to AIDS in comparison to men's. For example, it is likely that per-exposure transmission from man to woman during heterosexual intercourse is up to 2.5 times more efficient than from woman to man [8, 9]. The efficiency of HIV transmission appears even greater if the woman or her partner has another sexually

Table 1. Percentage of women who are HIV positive, selected countries

	Female sex workers	Female STD patients	Pregnant women
Cameroon			
Douala (1992)	45.0		
Yaounde (1990)	9.3		2.0
Central African Republic			
Bangui (1989)	17.0	8.0	8.0 (1990)
Congo (1987)			
Pointe Noire	64.1		10.3
Ethiopia (1989)			
Addis Ababa	18.2	36.8	
Kenya (1992)			
Nairobi	85.5		15.0
Malawi (1990)	55.9		23.3
Rwanda (1989)			
Kigali	61.0	74.0	31.6 (1992)
Tanzania			
Arusha (1988)	75.0		5.5
Tanga (1988)	52.6		7.0
Uganda			
Kampala (1990)		54.6	34.0 [7]
Zambia (1990)			
Northern Province	71.0		9–30
Lusaka	69.0		24.5
India			
New Delhi (1988)	30.1		0.0
Bombay (1992)	41.2		0.8
Thailand			
Northern (1992)	36.9		2.8
Haiti (1989)			
Port-au-Prince	41.9		11.6

Source: Center for International Research. *Recent Seroprevalence by Country*. Research Note No. 6 and No. 10. US Bureau of the Census, Washington, DC, 1992.

transmitted infection. Evidence suggests that the presence of a concurrent STD increases the risk of HIV transmission at least 3- to 5-fold [10]. Because the same STDs that generally cause burning and itching in men are often asymptomatic in women, female patients are less likely to seek treatment [11]. Others feel too embarrassed or ashamed to seek care at an STD clinic—facilities frequented primarily by men and female sex workers [12]. As with health care in general, women are often too busy, too modest, or too poor to seek treatment for STDs.

The precarious state of women's reproductive health in the world's poorer nations also places women at an augmented risk. Chronic iron deficiency, malaria, complicated pregnancies and lack of access to safe and legal abortion predispose women to the need for blood transfusion, a major pathway for HIV infection. While much blood is now tested in the capital cities of the developing world, adequate quality assurance procedures are still evolving, and the equipment necessary to screen blood is often nonfunctional and generally not available in smaller cities or rural areas.

LIMITATIONS OF EXISTING AIDS PREVENTION STRATEGY

The first line of defense in many AIDS prevention campaigns has been to counsel individuals to avoid exposure to HIV by limiting their number of sexual partners. Teenagers are told to abstain from sex until marriage, couples are exhorted to remain monogamous, and others are encouraged, at the very least, to reduce their number of sexual partners. There are a number of realities in women's lives, however, that limit the utility of this prevention advice. First, for many of the world's women, monogamy is a largely irrelevant strategy because they are already monogamous. It is the sexual or drug-using behavior of their sexual partner that puts them at risk. Second, for a significant portion of those women who are not monogamous, having multiple partners is not a pleasure-seeking strategy, but a way to gain access to resources that only men control. These women cannot easily reduce the number of their sexual partners; multiple partners are their key to survival. Third, partner-reduction messages assume that women are always in control of when they have sex and with whom. As data on rape and coercive sexuality indicate, however, this is far from the case in many sexual encounters.

The danger of relying on presumptions of monogamy

What has been forgotten in the rush to 'educate' populations considered to be at 'high risk,' such as prostitutes, is that the mass of women in need of protection are not sex workers, but women with one partner—their husband or the man with whom they live. In Sao Paulo, Brazil, married women who have only one sexual partner constitute 49% of all new AIDS cases among women [13]. Likewise in the United States, one recent article estimates that a woman's risk of contracting an STD is determined at least as much by her partner's sexual behavior as by her own nonmonogamous behavior. In the author's high end model, women are almost twice as likely to contract an STD due to their partner's sexual behavior than due to their own [14].

Unfortunately, many of the most popular AIDS prevention messages—'Stick to Your Partner,' 'Love Faithfully'—give women the mistaken impression that if they remain monogamous, they will be safe from HIV. Data from around the world, however, indicate that it is not safe for women, or for AIDS prevention programs, to make this presumption. Monogamous women are increasingly at risk of AIDS through both the heterosexual and homosexual behavior of their steady male partners. To date, AIDS prevention programs have not included these women, leaving them without adequate information or skills to protect themselves from infection.

In many cultures there persists a sexual double standard that gives men license to be sexually adventurous while restricting female sexuality.* As a result, many surveys of sexual behavior document a higher rate of partner change among married and single men than among women (although underreporting by women and overreporting by men probably contribute to these results) [15–18]. In Thailand, for example, 28% of a stratified random sample of men nationwide admitted to having sex outside of their marriage or steady partnership within the last year, compared to only 1% of women [16]. Likewise, an island-wide random survey of men and women on Barbados showed that during the age period 25–34, men had five sexual partners on average, while women had only one. (Not surprisingly, sticking to one sexual partner did not reduce a woman's odds of reporting a history of STDs [15].) Results from a six-country, WHO-sponsored survey on African sexuality found that more than twice as many men than women reported extramarital affairs in the 12 months prior to the survey. Men also reported significantly more lifetime sexual partners [19].

A study from Kigali, Rwanda [20] illustrates starkly the danger women face in assuming that monogamy 'protects' them from AIDS. Of 1458 women aged 18–35 years attending the outpatient pediatric and prenatal clinics at the Centre Hospitalier de Kigali, 86% reported being married or in a common-law union with a man. All but 10 reported being monogamous, although only 496 (34%) felt certain of the fidelity of their partners. Overall, 24% of women who thought they were in mutually monogamous

*The following focuses on data from communities where polygyny is not a formal social institution. For an evocative discussion of the influence of formal polygyny on the transmission of HIV, as well as other STDs, see [21].

relationships were HIV positive. Even among the two-thirds of women who had only one lifetime partner—their husband—21% were infected.

The tendency for young girls to be partnered with men five to ten years their senior increases the likelihood that they will be exposed to HIV. This age gap is likely to increase as older men seek out younger and younger partners in the hopes of avoiding AIDS—a pattern already documented in parts of Africa [22]. It will also increase as harsh economic times lengthen the time it takes for African men to accumulate the 'bridewealth' they must pay a woman's family to secure her hand in marriage [23].

Mathematical models of the AIDS epidemic show that a woman's risk of contracting HIV increases dramatically as her age at first intercourse goes down and/or the age difference between her and her partner goes up [23, 24]. Older men have had more sexual partners and, therefore, have a greater chance of being infected with HIV or other STDs. It has also been suggested that early intercourse may represent an additional, independent, risk [25–27]. Data suggest that if a young woman is exposed to HIV before genital maturation is complete, she may face a greatly augmented likelihood of HIV infection. This dynamic may account for the very high rates of clinical AIDS among young women that have been found in areas where sexual initiation with older men occurs at a very early age [28].

Regrettably, many women feel incapable of challenging their husband's infidelity—to do so places their relationship, their economic security and their physical safety at risk. During focus-group discussions in Zambia, for example, many women felt powerless over their partner's sexual behavior. "I can be faithful to my husband, but my husband will not be faithful to me," observed one woman. "There are very few men who are faithful to their wives" [29]. Likewise, preliminary data from research projects on women and HIV in India, Brazil, South Africa and Guatemala, reveal that an overwhelming number of women report being monogamous themselves but aware that their partners are not [30]. These women expressed a sense of helplessness over their ability to change their partner's sexual behavior.

Elsewhere, other 'low-risk' women are contracting HIV through the hidden homosexual behavior of their male partners. To date, this phenomenon has been studied primarily in Latin America and the Caribbean, although similar patterns are now being documented in other places, such as Thailand [31]. Because homosexuality is not accepted in many cultures the pressure to have children is acute, many men engage in homosexual activity nonetheless marry have steady female sexual partners. This sets the st for increasing AIDS incidence among women children, a pattern already documented in Trini and Tobago, Brazil, the Dominican Republic other Latin American countries [32]. As of 19 bisexuality was the risk factor for 28% of AIDS ca among men in both Brazil and Mexico* [33, 34].

Unfortunately, men who engage in bisex behavior are very hard to reach with AIDS prevent messages because many do not consider themsel 'gay' or 'bisexual.' In Brazil, for example, only n who take the receptive, passive role in anal sex considered homosexual; the man who 'inserts' is s as masculine regardless of the gender of his sex partner [35]. Research from Rio de Janiero docume that as of 1992, unprotected penetrative intercou was still dangerously common among men having with other men, especially among those who repor sexual contact with both women and men.† Fully 5(of bisexual men had engaged in anal intercourse w a male partner during the last six months, 43% with a condom. Of the 100% who also had vaginal sex w a woman, 89% did not use a condom with their fem partner [35]. Not surprisingly, the male to female ra among reported AIDS cases in Brazil decreased fr 30:1 in 1985 to 6:1 in 1991 [36].

These examples emphasize the importance reaching all women with AIDS prevention messag not just those who themselves engage in 'high ri activity. In fact, it is precisely those women w appear least at risk of contracting HIV—marri women who have no outside partners and do not u drugs—who are left exposed due to the failure of mc AIDS prevention campaigns to reach out to wom other than those who identify themselves as s workers. Women's risk of HIV is also exacerbated l the failure of most programs to target men. As t epidemic proceeds, sexual partners of men at high ri are destined to make up an ever larger share individuals contracting AIDS.

Sexual networking as an economic strategy

Many partner-reduction messages are based on t premise that individuals seek multiple partners further their own pleasure; reducing one's risk is thu only a question of exerting self-control. While pleasu is surely a factor in many cases, there is also a need t replace partners lost through separation, divorce, c death. Likewise, for many women, having more tha one partner is an economic survival strategy that central to their ability to support themselves and the children.

'Stick to One Partner' slogans ask many wome living on the edge to forego income vital to meetin today's needs to avoid an ill-defined risk of AIDS l years hence. Increasing poverty, especially amon

*In the Mexico study an additional 16% of cases among men were listed as 'heterosexual' although the authors estimate that more than 80% of these men were really bisexual.

†Studies from Lima, Peru [37] and Trinidad and Tobago [38] also document that bisexual men report lower levels of perceived self-risk than heterosexual men and significantly lower levels of condom use with their female partners compared to their male partners.

women, has made this type of balancing act ever more present in women's sexual decision-making. In the decade prior to 1990, three-fourths of the world's women lived in countries whose *per capita* gross domestic product either declined or increased by an average of <$10 per person annually [39]. With declining real income, women have had to compensate by working longer hours, competing with men in a labor market that severely undervalues women's work.

This period of economic deterioration coincided with and contributed to an unprecedented rise in the number of households headed by females. Estimates indicate that women are now the sole earners in one-fourth to one-third of all the world's households [40]. Given women's lack of access to wage employment and their responsibility for child care and family upkeep, it is not surprising that households headed by females are disproportionately poor. Data from five Latin American cities, for example, document that the median monthly income of poor households headed by women is consistently lower than that of households headed by men [41].

With few marketable skills, many women have come to rely on 'sexual networking'* as an economic strategy to sustain their families in the face of growing economic uncertainty. Although the composition of sexual networks varies, research has shown that women often have relationships with more than one man to gain access to resources—resources they do not command themselves because of entrenched gender discrimination in access to education, to credit and to the formal wage economy [42–44]. These women cannot easily 'reduce' the number of their sexual partners.

In urban areas of Africa, for example, it is not uncommon for women to form relatively stable unions with several partners, each of whom contributes in some way to the maintenance of their families. These relationships may and often do involve affection, but their primary motive is economic. A woman may have ties to several long-distance truck drivers, for example, whom she sees on occasion when they pass through town. They, in turn, help buy groceries and pay the school fees for her children. These women—known as 'spares' in Zimbabwe, 'deuxièmes bureaux' in Francophone Africa, and 'girl friends' or 'town wives' elsewhere in Africa—draw strong distinctions between themselves and 'prostitutes', making them unlikely to respond to standard messages linking AIDS with the explicit exchange of money for sex [45].

Women clerical workers, school girls and female traders are examples of the larger population of urban women who occasionally barter sex for the resources and upward mobility that older men can provide [46]. It is quite common for secondary school girls, for example, to take up with a 'sugar daddy' who helps pay the fees and expenses that allow her to stay in school. Each year, thousands of school girls in Africa are forced to drop out of school because they get pregnant as a result of providing sexual favors to older men in exchange for school money [47]. Many of these young women are then repudiated by their families, forcing them to engage in more high-risk sexual behavior. One study of prostitutes in Nairobi found that the majority were unwed girls who had dropped out of school due to pregnancy [48].

The Nairobi study is just one among many that demonstrates that prostitution is often an economic survival strategy, especially for women who have been ostracized or abandoned by their husbands, family or community. Depending on the culture, a wide variety of social 'transgressions' can precipitate repudiation—among them divorce, unwed pregnancy, AIDS, infertility, widowhood or surviving a rape. A study by the Indian Housewives Federation, for example, found that 80% of New Delhi prostitutes in their sample were women cast out from their communities after having been raped [49]. The migration of abandoned or rejected barren women to urban prostitution has also been noted in Niger, Uganda and the Central African Republic [50]. Ironically, many of these women are abandoned due to infertility caused by an STD acquired from their husbands.

As these examples suggest, cultural and economic constraints make it difficult for women who have no husbands to survive without multiple sexual partnerships and the added risk they entail. Research in both Uganda and Rwanda, for example, has shown that women who are separated, widowed or divorced have significantly higher levels of HIV infection than do married or cohabitating women [20, 51]. Although most women marry early in developing countries, divorce, male outmigration, widowhood and abandonment mean that many will have to survive at least part of their lives on their own. In some developing countries, more than half of all marriages will be dissolved by the time a woman reaches her forties [52]. Some of these women will remarry and others will be supported by an elder son, but many will find themselves alone with few skills and little education to fall back on. One researcher estimates that there are roughly 10.5 million widows in India who are either without adult sons to support them or have been abandoned entirely by their families [53].

Evidence suggests that even among married women, access to economic resources is often a factor in the decision to take on additional partners. Among the Yoruba of southwestern Nigeria, Orubuloye and colleagues found that, in contrast to men, married women who had affairs seldom said it was for their own pleasure; rather, it was in exchange for some form of economic assistance or support withheld by their husbands [54]. Likewise, Rwabukwali and colleagues [17] argue that among women in Kampala, Uganda, economic necessity was the primary reason for sexual risk taking among 72% of HIV+ women and 54%

*'Sexual networking' is a phrase increasingly being applied by anthropologists and public health experts to describe patterns of multi-partnered sexual relationships.

of matched controls. Both authors conclude that sexual networking is in fact a form of economic networking, making it difficult for women to eliminate outside partners without access to alternative forms of income.

These examples demonstrate the difficulty of applying Western categories—'prostitution,' 'multiple partners,' 'monogamous relationship'—to the reality of third-world women's lives. Such labels do not begin to capture the subtlety or fluidity of sexual networks under conditions of economic scarcity, nor do they acknowledge the degree to which economic vulnerability shapes the sexual decision-making of third-world women. Until women have realistic economic alternatives, many will be unable to heed AIDS prevention messages that advocate 'partner reduction' as a means to protect oneself from AIDS.

Non-consensual sex

Partner reduction messages are only actionable in-so-far as women are truly free to control when and with whom they have sex. The pervasiveness of nonconsensual sex in women's lives is a reality that prevention programs have yet to confront, despite its ability to undermine significantly the effectiveness of conventional AIDS prevention strategies.

Rape is an extreme example of the type of sexual coercion that women confront daily in both the industrialized and developing world. In the United States, for example, population-based surveys suggest that one in five American women will be the victim of a completed rape in her lifetime [55]. Studies worldwide also demonstrate a remarkable consistency in the demographics of sexual assault. Contrary to popular perception, the majority of rape survivors (60–78%) know their assailants, a reality confirmed by surveys and service statistics from rape crisis centers in Chile, Malaysia, Mexico, Panama, Peru and the United States. Also, a large percentage (36–58%) of rapes are perpetrated against girls 15 years and under, with a disturbing percentage of assaults against girls younger than 10 [56].

Regrettably, there is ample evidence as well that early forced sex is an all-too-common dimension of growing up female. Especially vulnerable are young girls who are forced to have intercourse by a male relative or are foisted prematurely into the world of adult sex after being married off as a child. In the Maternity Hospital of Lima, Peru, for example, 90% of young mothers aged 12–16 had been raped by their father, stepfather or another close relative [57]. In Jamaica, 40% of pregnant girls aged 11–15 reported the reason for their first intercourse as "forced" [58]. And in India, close to 26% of 133 postgraduate, middle and upper class students interviewed reported having been sexually abuse by the age of 12 [59]. Given the widespread prevalence of STDs and HIV among many adult populations, sexual abuse victims are at increasing risk of contracting HIV or some other STD. A recent study from Zimbabwe documents the rising concern among health workers about the number of children they are seeing who have contracted STDs or HIV through sexual abuse [60].

Limitations of condom promotion strategies

Another major thrust of AIDS prevention programs has been the promotion of condoms as a way to protect oneself from AIDS. To a large extent, the global effort to increase condom use has just begun. In many parts of the world high cost, poor quality and limited availability impair the implementation of this important AIDS prevention strategy. Greater political commitment and community leadership are needed to make the use of condoms widely acceptable to individual men and women throughout the world. Along with this commitment must come increased resources for improved condom design, procurement and distribution.

As a strategy for women, however, condom promotion has some major limitations that highlight the need for complementary, female-controlled, prevention technologies. Condoms are a technology that women may influence, but ultimately do not control. This means that women's safety is often predicated on their ability to 'negotiate' condom use with an often unwilling partner. There are a variety of powerful forces—social, economic, cultural and emotional—that limit women's ability to negotiate successfully on their own behalf.

For a condom-based strategy to work, women must first feel able to discuss sex and condom use with their partner. Open communication about sexual matters, however, is not a part of many relationships. A survey of spousal communication in Asian countries, for example, found that close to a third of the women interviewed in the Philippines never talked to their husbands about sexual matters, nor did 47% in Singapore or 53% in Iran [61]. Caldwell and colleagues [62] report that frank discussion between partners about sex is uncommon in many parts of sub-Saharan Africa as well. Elsewhere, strong cultural factors work against the open discussion of sex. In traditional Latina culture, for example, a "good woman" is expected to be naive about sexual matters; knowledgeable or assertive women are considered to be "loose" [63].

There are also strong emotional barriers that prevent women from raising the subject of condom use. Especially in the context of an ongoing relationship, discussion of condoms often raises painful issues of fidelity and trust that many women and men would rather not confront. In focus-group discussions in places as diverse as the Caribbean, sub-Saharan Africa and Sri Lanka, men and women uniformly said that use of condoms symbolized distrust between partners, rather than care and concern [64]. Not surprisingly, these beliefs make the

discussion of condom use an emotionally loaded topic, especially in the context of a valued relationship.

Experience has shown that women also suffer abandonment, physical abuse and accusations of infidelity by bringing up condom use. The family planning literature documents how for some men, the desire to use any form of birth control signals a woman's intentions to be unfaithful. (Their logic is that protection against pregnancy allows a woman to be promiscuous.) Where children are a sign of male virility, a woman's attempt to use birth control may also be interpreted as an affront to her partner's masculinity. In focus-group discussions with women in Mexico and Peru, for example, many women were afraid to bring up birth control for fear of being beaten, deserted or accused of cheating on their partner [65, 66]. The connection to infidelity is even stronger for condoms, which are widely associated with promiscuity, prostitution and disease in many parts of the world. By bringing up condom use, women either insinuate their own infidelity or they implicitly assert the right to protect themselves from husbands who have outside relationships. This assertion may trigger violent reactions.

Besides fear, complex psychological factors often keep women from raising the topic of condom use with a partner. Among such factors is the tendency of individuals to feel personally immune from risks that they readily acknowledge for others. This type of denial is especially dangerous in the realm of sexuality, where strong emotions often supersede the tug of reason. Many a teenage pregnancy has been born of the belief that only 'other people' get pregnant, or 'it can't happen the first time.' Likewise, many a married woman has undoubtedly clung to the belief that her partner is faithful, even when evidence suggests the contrary. A study of women's risk perception in Mexico, for example, found that while two-thirds of women thought married women should use condoms because Mexican men have affairs, the vast majority of women did not perceive themselves to be personally at risk [67]. The understandable need women have to believe that their partners are faithful works to their disadvantage, especially in cultures where male infidelity is the norm.

Even when women are able to raise the issue of condom use, they often face entrenched male resistance to their use. Because women are often dependent on men economically and socially, they have little leverage for gaining male compliance [29]. The more limited the options a woman has outside of a particular relationship or sexual encounter, the less she can afford to lose her partner or her paying customer. A woman's cultural conditioning may also limit her ability to assert dominance in the sexual realm, a domain largely controlled by men in most parts of the world. As the consensus statement from the First International Workshop on Women and AIDS in Africa observes: "Forces ranging from early childhood training to state laws governing marriage, divorce and property rights, prepare women to defer to their male partners, not to instruct or oppose them ... especially in the context of marriage" (quoted in [46]).

Indeed, it is clear from conversations with women in both the industrialized and developing worlds that many feel unable to influence their partner's behavior with respect to condom use. In focus-group discussions, women in rural South Africa felt it was a "waste of time" to bring up condom use with their husbands; they strongly emphasized the need for a preventive method they could use without their partner's knowledge [68]. Partners of intravenous drug-using men in New York City expressed similar frustration at being made to feel responsible for men's sexual behavior. "The men decide what is going to happen sexually", they said. "If the staff wanted men to wear condoms, they would have to talk to the men" [69].

Consistent condom use appears to be difficult to maintain even with substantial outside support and counseling. In Zaire couples where one partner had HIV infection needed frequent home visits as well as clinic counseling to help them use condoms regularly. Despite intensive counseling, infection or pregnancy occurred in nearly 10% of couples followed for six months or more [70]. Likewise, in Mexico AIDS educators found that HIV-infected homosexual men needed at least three months of weekly support-group sessions to encourage and sustain condom use [71]. These studies suggest the magnitude of the task women face in negotiating consistent condom use each and every time they have sex.

For women living with abusive or alcoholic partners, the task of enforcing consistent condom use is even more problematic. Studies of natural family planning in the Philippines, Peru and Sri Lanka [72] and sexual attitudes among women in Guatemala [73] note the frequency of forced sex by men, especially when husbands arrive home drunk. The summary document of the Guatemalan focus groups observes "It is clear from the replies the women gave ... that being forced through violence to have sex by their partner is not an uncommon experience for Guatemalan women." Since women have little say over their partner's sexual behavior outside of marriage, their lack of control over the sexual encounter within marriage is even more problematic.

This is not to say that all women are powerless in sexual situations that put them at risk. Kline and colleagues [74] report that many of the low-income, minority women they interviewed in New Jersey were able to exert considerable power in their relationships by withholding sex if a partner refused to use condoms. Generally, these women were involved with drug-using men who contributed little to the family's economic support.

Orubuloye and colleagues [75] also report that among the Yoruba of southwest Nigeria, women have been able to refuse sex, without violent reprisal, if their

partner is known to be infected with a traditional STD. (Only 36% of women said they would consider using a condom in place of abstinence.) The authors note that Yoruba women have certain advantages when it comes to controlling their sexuality; they tend to be financially independent, their families welcome back wives in cases of conflict, and they traditionally have had the role of enforcing abstinence during pregnancy, menstruation and up to two years postpartum. Polygamy and a tolerance of male infidelity also mean that men can seek pleasure elsewhere. The authors note, however, that refusal is likely to be tolerated only until the man is treated. Long-term refusal, as would be required by HIV infection, "would likely result in the husband driving away the wife ... or becoming threatening or violent, in which case the wife would leave."

Several studies have shown that sex workers seem to have more leverage than women in the general population when negotiating condom use, probably because bargaining is already an explicit part of the sexual encounter and the balance of power is more equal between buyer and seller. Most peer-education programs for sex workers have shown that condom use can increase substantially if women are educated about their risk and taught how to use condoms properly [76–78]. But here too, women experience difficulty getting clients to comply. Six separate studies reported at the Fifth International AIDS Conference found that the main reason sex workers did not use condoms was male refusal [78]*.

It is not always men, however, that stand between women and condom use. Among women, the fact that condoms prevent pregnancy is also a major barrier to their use. In many cultures, childbearing is a woman's only route to status, and having children is an important way for women to gain power within the narrow political realm of the family. Pregnancy is often the primary motivation for sex: "If a man uses a condom on me, I cannot even become pregnant, and what is the use of sex without conceiving?" asked a key informant in the Zambia study cited above [29].

Also operative in women's resistance to condoms appears to be the symbolic significance of unprotected sex—a sign of intimacy with which condoms interfere. One of the strongest and most consistent findings to emerge from AIDS research to date is that women and men alike have proven far more willing to use condoms with prostitutes, clients or casual sex partners than with steady lovers or spouses [15, 37]. Similarly, se workers who regularly use condoms in their professio have proven unwilling to introduce them into thei private lives [78–80, 88]. This appears to be related t the need to distinguish work or recreational sex fron relationships that have more emotional significance In many different contexts, a willingness to engage i unprotected sex has become a cultural marker o intimacy [80].

Moreover, like men, women can find condom unpleasant because they reduce sensation and interfer with notions of spontaneous or 'natural' se: [29, 74, 78]. As one female informant noted in th study of sexuality among fish traders in northwestern Zambia: "If there is no sperm, I can't enjoy sex. If I am in love with you, I have also accepted the risk o disease—even death" [29]. Similar concerns abou interrupting the passionate flow of lovemaking have been mentioned by low income, minority women in the United States [74]. Elsewhere, female sex workers have expressed dislike for condoms because they prolong intercourse, which can lead to painful and dangerous friction sores [81]. Clearly, a 'condom-only' approach to AIDS prevention must overcome resistance on the part of both women and men.

STD control as an AIDS prevention strategy

Recently, the strategy of preventing and controlling other sexually transmitted infections has been accepted as a major component of the global AIDS response. After considerable debate, most researchers now agree that STDs, particularly genital ulcer diseases, significantly augment the sexual transmission of HIV [82]. In fact, a recent review suggests that, on a population basis, much of the risk of HIV transmission in Africa may be attributable to the presence of other STDs [83]. Many programs have thus come to see STD control as a priority public health intervention in the fight against AIDS.

Prior to the AIDS era, STD control programs were among the most poorly funded of all health-sector activities. Strengthening district, state and national STD control programs will require additional resources to train providers, establish diagnostic facilities and develop clinical infrastructure. Given these challenges and existing resource constraints, initial efforts at improved STD control have been highly targeted, concentrating primarily on 'core' groups, such as sex workers, their clients and men with repeated STDs. A programmatic bias toward targeting has been reinforced by econometric modeling that suggests that targeted interventions are considerably more cost-effective (in terms of 'healthy years of life saved') than broad-based efforts aimed at the general population [84]. In keeping with this logic, the bulk of STD investment has gone toward improving the existing network of STD clinics (whose clientele are primarily men and, in some settings, sex workers) and

*As a consequence, many AIDS prevention programs in developing countries have begun to place greater emphasis on targeting men. This is a welcome shift from placing all responsibility for changing male behavior on women. It would be a mistake, however, to switch entirely away from educating sex workers and other women to programs targeted exclusively at men, a response that could evolve from disillusionment over women's ability to influence their partner's sexual behavior. Such a wholesale shift would leave women unacceptably exposed.

establishing new services for reaching these core groups.*

While such highly targeted efforts may make sense in the short term, given existing resource constraints, the long-term reproductive health of women and men depends on a commitment to promote an expanded development budget that affords reproductive health services, including routine STD screening and treatment, the priority it deserves [85]. Ideally, STD services for women in the general population will need to be integrated with other health services, because women are seldom willing to endure the stigma attached to attending an 'STD clinic.' The development of integrated services, in turn, will require reorientation of service providers, improved clinical facilities and practical research aimed at identifying effective and sustainable service models [87].

As outlined in the proceedings of a recent meeting on reproductive tract infections,† co-sponsored by the International Women's Health Coalition and the Rockefeller Foundation, the establishment of adequate services for the recognition and appropriate treatment of STDs in women will require a significant investment of resources [88]. This investment is essential, given the considerable morbidity and mortality that women experience as a result of these infections. While the AIDS epidemic has attracted global attention, in most parts of the world reproductive tract infections caused by pathogens other than HIV still account for the bulk of reproductive morbidity suffered by women [89, 90].

Given the current economic and political climate, however, it appears unlikely that governments will commit to the type of expanded budget that would allow for the development of comprehensive reproductive health services capable of reaching the majority of the world's women. As a result, it is unlikely that most women will directly benefit in the short term from the 'STD control' measures currently promoted as part of the global AIDS prevention strategy.

STRENGTHENING WOMEN'S ABILITY TO PROTECT THEMSELVES

As the previous section demonstrates, the existing strategies for AIDS prevention are of limited utility to many of the world's women. Women often have too little power within their relationships to insist on condom use, and they have too little power outside of these relationships to abandon partnerships that put them at risk. Given this reality, what can be done to reduce women's risk?

An important first step is to recognize that women's low status is a critical obstacle to AIDS prevention. It is women's subordination, not merely their lack of knowledge, that is their primary risk factor for HIV [91]. Strategic interventions to promote gender equity deserve a central focus in national AIDS plans. Governments can help eliminate the financial inducements to multiple partnerships by revising laws and labor codes to guarantee women the right to own and inherit property, to earn salaries on a par with men and to have equal access to credit and training. They can improve women's ability to protect themselves by expanding female education, educating women about their rights, fighting the cultural beliefs and biases that denigrate women and value boy children over girls, and helping women organize on their own behalf. Until women become part of the dialogue that establishes policy and distributes resources, women's issues will remain vastly underattended. And until women share power more equally with men—in both the public and the private sphere—they will remain at heightened risk of AIDS.

Policy makers must also begin to consider law reform and investments outside the health sector as legitimate and important AIDS reduction strategies. Subsidizing the uniform and school fees of adolescent girls in Africa might actually do more to reduce HIV transmission—by eliminating the need for Sugar Daddies—than the most sophisticated 'peer education' campaign. It would also reduce unwanted pregnancy, raise the age of marriage and decrease infant mortality, not to mention promoting gender equality. One benefit of women-centered AIDS strategies is that they have positive backward links to many other development objectives.

Short of transformational change, there is much that can be done to empower women within existing AIDS prevention programs. Promising projects in Thailand, the Dominican Republic and Nigeria, for example, have helped sex workers enforce condom use by improving their assertion and negotiation skills, implementing 'condom-only' policies in brothels, and giving women more power through self-organization [92]. A project in Calabar, Nigeria has helped sex workers change the basic economics of their trade [93]. Together, these women decided to raise their fee for sex

*An interesting and potentially important exception to this rule is the innovative strategy of providing STD treatment through social marketing approaches currently being initiated by Population Services International (PSI). In a demonstration project in Cameroon, PSI is developing an STD 'kit' containing antibiotics, educational materials and condoms which will be marketed for men through existing private sector distribution channels. These kits will include information regarding the need to refer female partners for clinical evaluation [86].

†The term 'reproductive tract infection' refers to sexually transmitted infections of the female reproductive tract, infections that may be transmitted non-sexually (such as those caused by the overgrowth of organisms normally found in the genital tract of healthy women—e.g. bacterial vaginosis and candidiasis) and iatrogenic infections (such as those caused by unsterile abortion and delivery procedures). Given that sexually and non-sexually transmitted infections of the reproductive tract often present with similar clinical syndromes (e.g. vaginal discharge, itching or lower abdominal pain), the broader term more accurately describes women's need for clinical services.

so that they could afford to refuse clients who would not use condoms. Project organizers also persuaded hotel owners not to raise the price of the rooms that the women use for clients, arguing that 'safe sex' was in the owner's long-term financial interest. The project, which was started by a group of volunteers, is now largely self-supporting, with the women themselves taking over most of the organizing functions.

The key to the Calabar project's success is that it built upon women's capacity for collective action. Women throughout the world have a history of rallying together to solve common problems—a strength that has yet to be widely utilized by AIDS prevention programs (e.g. successful campaigns against male alcoholism in India and community policing against wife battering in Peru) [94, 95]. As behavioral scientist, Priscilla Ulin [46], observes, "Women's *collective* perception of their ability to act on AIDS prevention messages could be a critical determinant of both male and female behavior change." To date, there has been little effort to initiate dialogue among women about the strategies they have used successfully to change their own or their partners' behavior. Nor have most projects sought to organize women to exert collective pressure on men to change their ways.

The Calabar project also benefitted from its use of a 'community organizing' approach to social change rather than the 'health beliefs' model that currently dominates AIDS interventions. AIDS projects could profit greatly by importing some of the lessons learned from popular education efforts in other sectors. Change requires not only new knowledge but a new analysis of the problem and an empowered sense that action, on an individual or collective level, can make a difference. 'Organizing,' as opposed to information and 'counseling,' helps build group consensus and imparts a unified sense of purpose and possibility. Especially among women and other oppressed groups, an on-going process of action and reflection can impart a new sense of entitlement and renewed faith in the possibility of change [96].

Often the benefits of organizing and consciousness raising around one issue 'spill-over' into areas unrelated to the initial intervention. A dramatic example of this 'secondary empowerment' comes from a film on women and HIV, entitled *Positively Women*, produced and directed by Nalini Singh with backing from the United Nations Development Program. The film includes conversations with two groups of women from nearby villages in Rajasthan India about their ability to protect themselves from HIV. Prior to the filming, neither group knew anything about HIV or condoms; but the demeanor and response of each group were entirely different. Women from the first group were withdrawn, embarrassed and said they would be afraid to raise the issue of condom use with their husbands for fear of being beaten or humiliated. By contrast, women in the second group felt capable and entitled to discuss condom use with their husbands and recommended holding a community meeting discuss the dangers of the new disease. The on difference was that the women in the latter group ha participated in a community organizing project for s years where they had learned to analyze their situatic and seek individual and collective solutions to the problems. When asked about beatings or abandoi ment, the members of the second group acknowledge that before they participated in the project, they woul never have had the power or confidence to raise suc a delicate topic.

This film shows that women who feel powerless an resigned can be helped to feel entitled and empowere But ultimately, even these women must rely on technology—condoms—that men control. Althoug technology development is not a solution in itsel women's overall vulnerability to HIV would be greatl reduced if they had access to a prevention technolog within their control. In this respect, women ar uniquely vulnerable. If men choose to ignore behavio change messages to reduce their number of sexua partners, they still have a technology—condoms—t protect themselves. If injection drug users continue t inject, they have a technology—clean needs and/o bleach—that is both effective and within their persona control. Only women who confront centuries of socia conditioning that grants sexual license to men, ar expected to protect themselves with a technology tha is outside of their personal control.

Scientists have concluded that developing a female controlled 'microbicide'— a vaginal product similar tc today's spermicidal jellies or foams—could be developed in 5–10 years if made a priority for research. (The feasibility of bringing such a product to market has recently been reviewed [97]. Such a product would allow women to protect themselves from HIV without their partner's knowledge or cooperation. It may also be possible to develop a microbicide effective against HIV that would not be a spermicide, thus providing an HIV prophylactic for women desiring to conceive.

Although critical in the short term to reducing women's risk, hopes for a new female-controlled technology should not be allowed to divert attention from the underlying (and far more difficult) task of changing the power balance between men and women. Ultimately, a technology that allows women to circumvent their lack of power in sexual relationships, is no answer, but merely a 'bandaid' for deeper problems in need of redress. Nonetheless, without a such a bandaid, many women will bleed to death before long-term strategies can take hold.

In sum, making AIDS prevention relevant to the reality of women's lives will require policy revisions in three important areas: a greater commitment to identifying practical strategies for equalizing economic and social power between men and women; more attention to group process and empowerment within existing AIDS programs; and a concerted effort to develop microbicidal products for intravaginal use. Only a persistent and conscious neglect of women's

needs will explain continued inattention to these important and, to date, underattended areas.

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Declining risk for HIV among injecting drug users in Kathmandu, Nepal: the impact of a harm-reduction programme

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Objective: To measure changes in self-reported risk behaviour for HIV infections and HIV seroprevalence among injecting drug user (IDU) clients of an outreach harm-reduction programme in Kathmandu, Nepal.

Methods: The Lifesaving and Lifegiving Society (LALS) of Kathmandu began providing sterile injecting equipment and education to Nepalese IDU in 1991. A sample of these IDU were interviewed and tested for HIV each year from 1991 through 1994.

Results: Indicators of unsafe injecting fell, as knowledge of HIV rose more in 1994 for those who had been in touch with LALS for longer. Indicators of unsafe sex did not change. HIV seroprevalence remained low, 1.6% in 1991 and 0% in 1994.

Conclusion: We conclude that programmes for the prevention of HIV spread among IDU are possible and effective in Asia, and are urgently needed.

AIDS 1995, 9:1067–1070

Keywords: Injecting drug use, HIV, Nepal, harm reduction, Asia

Introduction

Over the last two decades, there have been large increases in the number of people regularly using opiates in Asian countries, many of whom have more recently turned from smoking or inhaling opium to injecting heroin [1]. In many of these countries, associated with changes in the patterns of opiates consumption, there have been explosive epidemics of HIV infection among injecting drug users (IDU) since the late 1980s [2]. These epidemics continue unabated in most countries in Asia in which they occur. Few local initiatives exist to slow or prevent the spread of HIV among IDU in these countries; in general, efforts are targeted at drug use itself. In many cases these efforts are extremely repressive, and current evidence suggest that they are having little effect other than to further disenfranchise the drug users and drive them underground. Strategies which can prevent the further spread of HIV among IDU in Asia in realistic timeframes are urgently required [3].

Injecting drug use is a relatively recent phenomenon among Nepalese people in Kathmandu. Syringes are available from pharmacies, but are expensive relative to income, and become more expensive or unavailable if the pharmacist knows that the purchaser intends to use them to inject illicit drugs. In a small city such as Kathmandu this knowledge is common among pharmacists, as it is among the police, who can use possession of a syringe as an excuse for arresting or intimidating IDU. A syringe and needle usually retails for approximately 10 rupees, compared with the average cost of a meal of about 20–25 rupees and a packet of low-quality heroin at 200 rupees. Knowing that the purchaser is IDU, the pharmacist can charge up to 10 times the usual price. There are six drug treatment centres in Kathmandu, most of which do not admit IDU or HIV-positive individuals. Fees are very high, as is the relapse rate.

The Lifesaving and Lifegiving Society (LALS) of Kathmandu began distributing sterile injecting equipment in exchange for contaminated equipment in 1991 among IDU in Kathmandu. LALS has grown from one outreach worker to eight Community Health Outreach Workers (CHOW) in 1994. CHOW also distribute other material for HIV prevention, including sterile water, condoms and bleach, and provide education, counselling and primary health care for their clients. It is estimated that

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Sponsorship: Supported by the Research Fund of the Macfarlane Burnet Centre (N.C.). The Lifesaving and Lifegiving Society has received support from the World Health Organization, the American Foundation for AIDS Research and the Point Defiance AIDS Project.

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Date of receipt: 13 February 1995; revised: 20 June 1995; accepted: 26 June 1995.

© Rapid Science Publishers ISSN 0269-9370

LALS staff are in regular contact with about 750 IDU of an estimated total of 1500–2000 IDU in the Kathmandu valley. Syringes are exchanged on a one-to-one basis, with no limit on the number exchanged at any contact. By the end of 1994, there had been 57 734 exchanges, rising from 4506 in 1991 (an incomplete year) to nearly 30 000 in 1994. As well as syringe exchange, CHOW provide many other services, including distribution of information and educational material, condoms and primary care services. Of 48 386 client contacts up to the end of 1994, only half involved syringe exchange, and 6847 primary health care.

LALS is a unique program in Nepal, and to our knowledge in Asia. It was therefore imperative that the need for its services and the impact it was having on the HIV risk behaviour of its clients be continuously assessed. We also wished to monitor the rate of HIV infection among those IDU with whom we are in contact, to ensure that HIV is not spreading, and to attempt to provide appropriate services to those found to be HIV-infected.

Methods

Each year that LALS has been operating a sample of the clients with whom it is in contact have been interviewed and blood samples taken. This research programme has been aimed at discovering the needs and behaviours of our clients in relation to the risk of HIV infection in particular, through both their injecting and sexual contacts.

Briefly, in each year of operation, consecutive IDU clients of LALS were asked to participate if they had injected within the preceding 30 days, or if they had participated in a previous interview. Sample size was constrained by available resources, but participants were enrolled in all years on a first-come basis. A questionnaire was completed by CHOW, who had previously established a relationship of trust with the client. For the most part, clients were interviewed in a private setting in the field; no identifying information was collected, although clients were asked if they had previously participated in this research programme. At the same time as the interview, a blood sample was taken by CHOW, with provision of pre-test counselling for HIV testing. All sera were tested in Kathmandu using conventional methods for the presence of antibody to HIV, hepatitis B surface antigen and antibodies to syphilis using the Venereal Disease Research Laboratory (VDRL) test. Those with reactive VDRL results were followed and treated by staff nurses from LALS or referred for treatment when appropriate; HIV and hepatitis B virus results were delivered with post-test counselling.

Statistical analysis

Data were entered into a database built using Epi Info version 5.1 (Centers for Disease Control and Prevention, Atlanta, Georgia, USA). Comparisons were made between demographic characteristics of the samples, self-reported behaviours and seroprevalences between different annual samples and between those in the 1994 sample, who were interviewed for the first time and those who had been previously interviewed. Statistical techniques used in analysis included Kruskal–Wallis and Mann–Whitney tests.

Results

In 1991, 127 IDU were enrolled, interviewed and tested from a total of approximately 150 with whom LALS was in contact. In 1992, 59 were interviewed of whom 20 had previously been interviewed. In 1993, 200 IDU participated out of a total of about 600; 59 individuals were interviewed for a second time, 14 of whom were interviewed first in 1991. In 1994, 200 IDU participated out of 750 with whom LALS was in contact; 83 had previously been interviewed (Table 1).

Table 1. Number of interviews and reinterviews of injecting drug users in touch with the needle and syringe-exchange programme in Kathmandu, Nepal, 1990–1994.

Year of interview	First interview	Previous interview year				
		1991	1992	1993	Unknown	Total
1991	127				0	127
1992	39	20			0	59
1993	141	14	45		0	200
1994	117	4	12	66	1	200
Total	424	38	57	66	1	586

There was no difference in demography between the samples to suggest that the groups of IDU LALS was in contact with were substantially different over time (Table 2). The proportion of men, average age at interview, average years of schooling, the proportion who had never married, and median income stayed substantially the same between 4-yearly samples, and in 1994, between those interviewed for the first time and those re-interviewed. In all subsamples, median age at first injection was 22 years, although, as would be expected, the median duration of injecting increased to some degree over time and with continued contact with LALS.

If indicators of injecting behaviour are compared between groups, it can be seen that injecting safety increased over time and for those interviewed in 1994 who had been in contact with LALS longer (Table 3). First, the number of times LALS clients had been injecting drugs each week decreased from about 21 times in 1991 to about 15 times in 1994, both for people interviewed for the first time and for those who had been interviewed before. There was also a decrease in the number of times people shared injecting equipment in the previous week — from about 14 times per week in 1991 to once per day or less in 1993 and 1994; therefore, the frequency of

Table 2. Demographic profiles of injecting drug users interviewed in Kathmandu, Nepal, in 1991 through 1994, by first or subsequent interview (in 1994).

	Year of first interview			1994 interview	
	1991	1992	1993	First	Subsequent
Number enrolled	127	39	141	117	83
Men (%)	90	92	95	97	93
Average age of men (years)	25.7	26.8	25.0	26.4	27.3
Schooling (years)	5.5	5.6	6.6	8.4	7.1
Never married (%)	54	64	54	58	46
Median income (rupees per week)	700	700	600	700	500
Duration of injecting (years)					
Average	2.4	4.3	3.2	3.9	4.5
Median	1	4	2	3	4

Median age at first injection was 22 years for all subjects.

sharing was less in 1994 for those who had been in contact with LALS longer. Most of those who were re-interviewed in 1994 reported not sharing at all in the previous week. The number of sharing partners remained stable across the years, but were smaller in those re-interviewed in 1994 compared with those interviewed for the first time that year.

Table 3. Injecting behaviours among injecting drug users in Kathmandu, Nepal, in 1991 through 1994, by first or subsequent interview (in 1994).

	Year of first interview			1994 interview		
	1991	1992	1993	First	Subsequent	P^*
No. respondents	127	39	141	117	83	
No. injections per month						
Average	23.7	18.9	16.7	17.0	17.5	
Median	21	20	14	15	15	NS
$P^\dagger$		<0.0001				
No. times shared needles per month						
Average	12.7	11.3	7.3	7.6	6.1	
Median	14	11	4	5	2	0.06
$P^\dagger$		0.0003				
No. people shared needles with						
Average	2.8	2.9	2.4	2.9	2.1	
Median	2	2	2	2	1	0.024
$P^\dagger$		NS				

*For difference between 1994 samples. †For differences over time. NS, Not significant.

Knowledge of the existence of HIV infection and AIDS increased dramatically from 58% in 1991 to almost 100% in 1994; also, an increasing proportion of those interviewed perceived themselves to be at risk of HIV infection, from 25% in 1991 to 47% in 1994 (Table 4). This risk was increasingly perceived to be associated with both injecting behaviour and contact with sex workers, although the former was seen to be more significant. In 1994, those who were re-interviewed were significantly more likely to recognize the risk from injecting than those being interviewed for the first time.

The same degree of change in relation to sexual behaviour was not apparent, with an increased proportion

Table 4. Knowledge and attitudes about HIV, serostatus for HIV, hepatitis B and syphilis among injecting drug users in Kathmandu, Nepal, in 1991 through 1994, by first or subsequent interview (in 1994).

	n (%)				
	Year of first interview			1994 interview	
	1991	1992	1993	First	Subsequent
Know about HIV/AIDS	73 (58)	37 (95)	120 (85)	114 (97)	83 (100)
Perceived to be at risk of HIV	18 (25)	11 (30)	54 (45)	47 (47)	39 (47)
Risk source (%)					
Prostitutes	–	9	19	32	33
Syringes	–	73	91	65	87
Other	–	27	9	6	3
HIV+	2 (1.6)	1 (2.6)	0 (0)	0 (0)	0 (0)
HBV+	7 (5.5)	–	13 (9.2)	8 (6.8)	5 (6.0)
VDRL-reactive	18 (14.2)	4 (10.3)	20 (14.1)	6 (5.1)	7 (8.4)

HBV, Hepatitis B virus; VDRL, Venereal Disease Research Laboratory test for syphilis.

having ever had contact with a sex worker, but similar high proportions reporting condom use with sex workers only half the time or less (Table 5). However, 49% (89 out of 183) of first interviewees failed to answer questions about usual condom use, so these results may be misleading. There were 33 responses from female IDU overall, of which 27 were first interviews (13, three, seven and four in 1991 through 1994, respectively). Six indicated ever having accepted money for sex, all of whom were interviewed in 1994: two first and four re-interviews. Of the six, three reported never and three rarely using condoms.

Table 5. Sexual risk behaviour for HIV infection among male injecting drug users (IDU) in Kathmandu, Nepal, 1991 through 1994, by first or subsequent interview (in 1994).

	Year of first interview			1994 interview	
	1991	1992	1993	First	Subsequent
No. male IDU	114	36	134	113	77
Never had sex (%)	26	25	16	19	9
Never with prostitute (%)	40	28	33	28	38
No. men reporting ever having sex with a prostitute	38	17	68	60	41
Any condom use (%)	100	35	35	43	46
No. condom use always/mostly (%)	4 (11)	1 (17)	1 (4)	4 (15)	3 (16)

Athough the proportion positive for hepatitis B surface antigen remained relatively constant, the overall seroprevalence of HIV did not change significantly, and although HIV was discovered at low rates in 1991 and 1992, no new HIV-infected individuals were identified in 1993 or 1994. Overall, there were almost 195 person-years (PY) of follow-up on those interviewed more than once, a seroincidence of zero per 100 PY [upper 95% confidence interval, 0.1 per 100 PY]. The level of past exposure to syphilis, as measured by VDRL reactivity, was high, ranging from 5 to 14% of the yearly samples.

Discussion

The sharing of contaminated injecting equipment among IDU is a major risk for transmission of HIV, if it is present, whether in the West [4] or in Asia [5,6]. Despite the presence of HIV among IDU in Nepal since at least 1991, these data suggest that to date, HIV is not spreading among those IDU who are in contact with the LALS. The data presented here from 4 years' monitoring of the first needle and syringe-exchange programme in Asia show that there have been significant changes in self-reported injecting behaviour in relation to HIV risk among IDU in Kathmandu from 1991 to 1993. This change has been even greater among those who have been in contact with the needle exchange through this time than in those who were interviewed for the first time in 1993, but there were also significant changes in this latter group as well. This suggests that LALS has had a significant effect in promoting and supporting safer injecting practices among its clients, with some spread of this effect beyond those in immediate contact with LALS.

The alternative explanation, that there has been significant social desirability bias with clients of the exchange learning the correct or desired responses to questions, may have some force but does not affect the fact of lack of HIV spread as determined by serology or of the increasing distribution of sterile equipment. Again, the possibility of selection bias affecting the results is minimized by the consecutive enrollment of clients, the only proviso being that they had injected in the previous 30 days.

In a context where there has been explosive spread of HIV among IDU in Nepal's neighbouring countries, China [7] and India [8], and in virtually every other country in Asia where HIV has appeared among IDU, including Thailand [9], Malaysia [6] and Myanmar [10], this lack of spread among IDU in Kathmandu over a 4-year period is remarkable. Conclusions based only on this evidence cannot be firm, as factors other than the impact of the harm-reduction programme may play a part. It may be that there is some self-selection for time of entry into these studies, with subjects more compliant and easier to find if recruited early; however, the lack of significant differences between those interviewed for the first time in 1994 and those being followed-up in that year suggests that this is not the case. It is possible that HIV is spreading among IDU not in contact with LALS in Kathmandu; if this were the case, then the lack of spread in this group is even more remarkable. Finally, it is possible that when an IDU becomes infected with HIV he or she is more likely not to come into contact with LALS; however, for the vast majority of IDU in Kathmandu it is only through LALS that they have access to HIV testing.

This evidence is therefore strongly suggestive that harm-reduction programmes can be implemented and effective in controlling the risk of HIV infection among IDU in Asia. Many programmes that have been effective in preventing the spread of HIV among IDU in western countries are often said to be inappropriate for Asia on cultural, political, economic or religious grounds. LALS demonstrates that this is not necessarily the case. What works in preventing the spread of HIV among IDU is now well known from many different cultural and sociopolitical settings [11,12]. What is needed, in Asia as elsewhere in the world, is the will to do those things which we know will work (including needle/syringe exchange and distribution and peer education), and to carry them out early enough and on a scale sufficient to have an impact on the HIV epidemic among IDU.

Acknowledgements

LALS wishes to express its gratitude to its many supporters, especially Dave Purchase of the Point Defiance AIDS Project; Gene Vadies and Dr Robin Biellik from the WHO Global Programme on AIDS, the American Foundation for AIDS Research; Dr Benu Bahadur Karki, Chief of the National STD and AIDS Prevention Centre for Nepal; Rabi Raj Thapa, Senior Superintendent of Police in the Narcotic Drug Control Unit in Nepal; and Dr Iswar Lal Srestha, Consultant Pathologist.

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