Report Of The Commission On AIDS In Asia

REDEFINING AIDS IN ASIA

Technical Annex

TECHNICAL ANNEX

to the

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Crafting an Effective Response

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Contents

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The Technical Annex was designed, composed and copyedited by a team consisting of Rebecca Moss, Bruce Ravesloot, Catherine Tan, Sinoj Mullangath, Jeanette Olsson and led by the principal editor Satyanarayan Sivaraman.

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Foreword

The Commission on AIDS in Asia publicly released its report *Redefining AIDS in Asia: Crafting an Effective Response*, in March 2008, by handing it over to the UN Secretary General Mr Ban Ki-moon in New York. Since its publication, the report has attracted the attention of both policy makers and academics working in the field of HIV.

Many have requested access to the background papers that formed the basis of the Commission's report. This Technical Annex is an attempt to put the evidence collected by the Commission in the course of its work into the public domain.

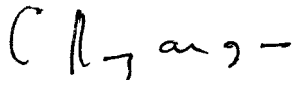
As mentioned in the original report, the Commission reviewed over 5000 papers, surveyed more than 600 individuals and community organizations, engaged over 30 specialists in various AIDS-related sectors, and consulted numerous academics, field and policy experts. The Commission organised two sub-regional workshops. It also drew upon the expertise and experience of UNAIDS and its co-sponsors, especially UNICEF, UNDP, UNFPA and the World Bank. The editors and the Commission Secretariat were asked to put together the background materials and key findings of workshops and carry out the difficult task of presenting all this wealth of evidence in a structured manner.

The studies included in this Annex, as one can see, cover a wide range of themes like epidemiology, unit costing, assessing the total resource need, cost-effectiveness and socio-economic impact in general and in particular on women, children and young people. Research material bearing on legislation, impact mitigation and effectiveness of HIV programmes has also been presented.

Many areas addressed in this Technical Annex are either new or not previously discussed adequately. Some of these include providing a clear quantitative basis for prioritization of most-at-risk populations; estimating the unit cost of interventions; measuring the impact in financial terms at the household level; and quantifying addition to poverty due to HIV.

In the course of the Commission's work we received the co-operation of reviewers, NGOs, and financial institutions like Asian Development Bank. This is gratefully acknowledged.

I also take this opportunity to thank all those who have worked ceaselessly, over almost 18 months, to help prepare the Commission's final report as well as this Technical Annex.



Dr Chakravarthi Rangarajan

Chairman, Commission on AIDS in Asia

Abbreviations

ADB	Asian Development Bank
AEM	Asian Epidemic Model
AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
CSM	Condom Social Marketing
CSO	Civil Society Organisation
DALY	Disability Adjusted Life Years
DHS	Demographic And Health Survey
ECD	Early Childhood Development
EIRR	Economic Internal Rate of Return
FSW	Female Sex Work(er)
GDP	Gross Domestic Product
GFATM	Global Fund for AIDS, TB and Malaria
HAART	Highly Active Anti-retroviral Treatment
HIV	Human Immunodeficiency Virus
IMR	Infant Mortality Rate
IDU	Injecting Drug User
MARP	Most-At-Risk Population
M&E	Monitoring And Evaluation
MDG	Millennium Development Goal

MOH	Ministry Of Health
MSM	Men who have Sex with Men
MSW	Male Sex Work(er)
NAC	National AIDS Commission
NASA	National AIDS Spending Assessment
NGO	Non-Government Organization
PEPFAR	President's Emergency Plan for AIDS Relief
PHC	Primary Health Care
PLHA, PLHIV	Person Living with HIV
PPP	Purchasing Power Parity
PMTCT	Prevention of Mother-To-Child Transmission
RETA	Regional Technical Assistance
TB	Tuberculosis
UNAIDS	The Joint United Nations Programme on HIV/AIDS
UNGASS	UN General Assembly Special Session
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing
WHO	World Health Organization

1
Epidemiology

CHAPTER SUMMARY

Based on a request from the Commission on AIDS in Asia, the East-West Center, Hawaii, identified a set of models to understand the epidemic situation Asian countries and serve as the basis for policy analysis. The mandate was to use models to assess the future level of the epidemic under varying conditions and estimate future HIV trends, number of deaths, orphans, and AIDS cases with and without treatment of currently available ART regimens.

These models were also to serve as the basis for assessing the effectiveness and cost-effectiveness of specific policy or program choices as defined by the Commission.

The Commission on AIDS in Asia has suggested reclassifying the Asian epidemic in terms of the high-risk groups and behaviours that drive it, as this will help target prevention interventions in a better way for each stage of the epidemic.

This reclassification is based on the observation that the level and rate of growth of adult HIV in a population in Asia is largely determined by the intensity of sex work – primarily by the proportion of men in the population frequenting sex workers.

The projection team at the East-West Center considered three different models used for understanding HIV related trends:

- The UNAIDS Estimation and Projection Package (EPP), which takes as input at-risk population sizes and HIV prevalence, fits the HIV prevalence in each specified population, and outputs prevalence trends in those populations and in the country as a whole.
- Spectrum, which takes as inputs the prevalence trends over time and various epidemiological data including provision of antiretroviral therapy (ART), and produces as outputs prevalence, incidence, deaths, age structures, and impacts on children.
- The Asian Epidemic Model (AEM), which takes various behavioural inputs, applies transmission parameters to them, and produces as outputs HIV prevalence, incidence, deaths, age structures and pediatric impacts.

In light of the strong desire to have a model that would allow for the types of policy analyses the Commission desired, the projection team decided to use the Asian Epidemic Model.

The Asian Epidemic Model is a mathematical process model that includes the major routes of HIV transmission in Asia (sex work, male same-sex behaviour, needle sharing, casual sex, husband-to-wife, and mother-to-child).

Some of the important questions the AEM helps to answer are:

- Are our programs focused in the right place?
- Did our past programs have any impact on the epidemic?
- What level of behaviour change do we need to reverse an epidemic?
- How big are the impacts for which we must plan?

The model's primary limitation is the substantial amount of behavioural and epidemiological data required as input to allow calculation of future HIV trends and to provide actual trends for comparison with these calculated ones.

While there have been challenges, for most countries the AEM's ability to link epidemiological and behavioural trends and data has pushed us toward a model that reflects the observed epidemiological patterns in the country. The projection team's hope is that the approach used of cross-correlating a behaviourally-based model's outputs with trends in surveillance data, reported HIV and AIDS, and transmission mode data has produced models that capture the most essential features and major dynamics of the epidemic in each country.

1.1 COMMISSION ON AIDS IN ASIA REGIONAL PROJECTIONS *Tim Brown, Amala Reddy, Wiwat Peerapatanapokin and Eric Cunningham*

1.1.1 INTRODUCTION

1.1.1.1 Objective

The purpose of this paper is to provide a set of country-specific projections for the Commission on AIDS in Asia. These projections were intended to :

- Provide information on levels and trends in the regional epidemic
- Serve as a basis of policy analyses in the Commission report
- Slow exploration of the impact of policies proposed by the Commission on the regional epidemic.

This document describes the methodology and overall findings of these exercises and the resulting implications for responses to HIV in the region.

1.1.1.2 Methodology and assumptions

In November 2006, the modelling team met and reviewed the available models, including the UNAIDS Workbook logistic fitter, the UNAIDS Estimation and Projection Package, Spectrum and the Asian Epidemic Model. The specific factors found essential to achieving the purposes outlined above were:

- The model must accurately reflect the epidemiological patterns of HIV epidemics in Asian settings.
- The model must allow policy analyses to be carried out. Such analyses will most often involve estimating the impact of policies or programmes in changing behaviours, and then calculating the effects of those behaviour changes on the epidemic.

- Given the limited nature of available data in many countries, it was desired to have a model that would allow behavioural and epidemiological trends to be compared with each other and cross-validated to ensure consistency in the picture painted by the model.
- The model must allow close examination of the influence of those specific at-risk populations relevant in Asia on the overall national epidemic, including exploring temporal relationships between the various sub-epidemics in a country.

After a review of the above requirements, a decision was made to use the Asian Epidemic Model, which has been successfully applied to national and local modelling efforts in several Asian settings. Recognising the limitations of working at a distance with limited access to the full set of data available in-country, the modelling team decided and agreed with the Commission that the focus of this exercise would be on preparing an aggregate model for the region, composed from country-specific projections based on the data accessible to the team. However, the team requested that individual country projections not be released because without extensive validation work in-country, individual country models might be misinterpreted without adequate understanding of their limitations to generate bad policy advice. Consequently, this write-up focuses on the regional results and findings, and does not present models for individual Asian countries.

1.1.2 The Asian Epidemic Model: A brief description

The Asian Epidemic Model (AEM) is a mathematical process model that includes the major routes of HIV transmission in Asia (sex work, male same-sex behaviour, needle-sharing, casual sex, husband-to-wife, and mother-to-child). More detailed descriptions of the model are available elsewhere[1]. As inputs, AEM takes:

- *The size of the key sub-populations important in Asian epidemics*, including female sex workers (FSWs), their clients, injecting drug users (IDUs), men who have sex with men (MSM), and male sex workers (MSW). In addition, it requires projections of the size of the general male and female populations in the absence of HIV. In this work, those populations have primarily been taken from the UN Population Division's medium fertility projections without AIDS.
- *The frequency of sexual or needle-sharing behaviours* within and between these groups. The model focuses on the primary sources of HIV transmission for each population. For example, for MSM the focus is on anal sex with MSM and MSWs, and on vaginal sex with FSWs. For FSWs, the primary transmission route is sex with clients; and for injecting drug users, AEM includes both needle-sharing and sexual risk with FSWs and married women.
- *The level of protective behaviours such as condom and clean needle use*. Different levels of condom use are allowed with different partner types: for example, FSW-client, casual partners, husband-to-wife, MSM-MSM, MSM-MSW, IDU-FSW, etc.
- *HIV and STI trends over time*. These are normally obtained from surveillance data or *ad hoc* studies, and are adjusted before use to reflect the national situation.

These are entered as trends into an Excel spreadsheet, known as the AEM Workbook. AEM can be run directly from within the workbook and the outputs can be loaded back into that same workbook, providing a single file repository of the key inputs and outputs. When completed, each country model is contained in a single workbook (or, in the case of two large countries, India and Indonesia, in multiple workbooks), and tools exist to combine these into one regional or different sub-regional projections.

[1] Brown T, Peerapatanapokin W. The Asian Epidemic Model: a process model for exploring HIV policy and programme alternatives in Asia. *Sex Transm Infect* 2004; 80 Suppl 1:i19-24.

After the inputs are generated from a review of existing epidemiological and behavioural data, AEM then applies probabilities of transmission, which are adjusted within allowable scientific ranges, to fit HIV transmission trends in each major population: FSWs, IDUs, MSM, adult males and females) in a country-specific manner. The AEM interface then allows the user to directly compare calculated prevalence from the behaviours and transmission parameters with the observed HIV prevalence trends for each of the key populations affecting Asian epidemics (see Figure 1.1). Once behaviours are entered and a good fit is obtained to several years of data, the model is likely to correctly reflect the behavioural and epidemiological situation in the country.

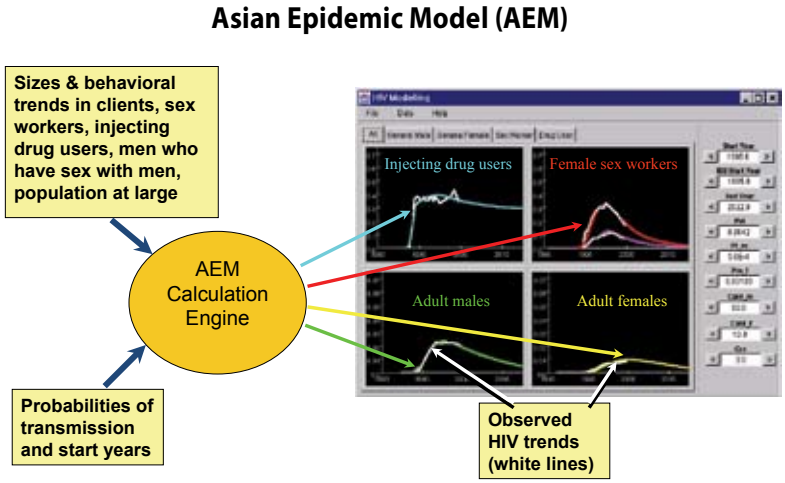


Figure 1.1: The Asian Epidemic Model takes behaviours as inputs, and adjusts probabilities of transmission to accurately fit local trends in HIV prevalence.

For the Commission's work, the modelling team made a number of enhancements and modifications to the Asian Epidemic Model, including:

- *Extension of the AEM to cover a timeframe of 1975 to 2030.* This was necessary because many of the economic analyses require long-term horizons. If we are exploring the implications of policy changes made today (2007), then a 20-year horizon (at least) is needed to see some impacts and effects.
- *Addition of antiretroviral therapy (ART).* Using the methods developed by the UNAIDS Reference Group on Estimation, Projection and Modelling, the AEM workbook was modified to calculate the impacts of antiretroviral therapy both on prevalent infections and on incidence.
- *Ability to compare trends in observed HIV infections and AIDS cases with the results of the modelling.* In many countries, our prevalence data is quite limited, so often the best information we have relates to trends in reported cases. The capacity to compare these directly with the models was built into the AEM workbook.
- *Ability to add external infections.* In several countries, for example, in The Philippines or Bangladesh, HIV acquired outside the country play an essential role in the epidemic. Similarly in China, plasma donation-related infections occurring in the mid-1990s had a major impact on the national epidemic. These required adding the ability to introduce external infections at specified times and into specified populations.
- *Capability to combine multiple projections into one regional or sub-regional projection.* A new workbook was developed which simplifies the task of combining multiple workbooks containing different countries.

- *Development of workbooks for estimating infections and deaths averted, cost-effectiveness and cost-benefits of different policy alternatives.* These were developed in consultation with the economic consultants to the Commission, and simplify the task of determining relative cost-effectiveness of programmes and conduct cost-benefit analyses.

1.1.2.1 The country-specific modelling process

The models developed for specific countries made use of all information available to the modelling team on those countries. The process of preparing a country model had a number of steps:

- Conduct searches of key electronic databases, such as PubMed and Popline, to identify papers containing relevant information for each country.
- Collect these papers from the published literature, as well as drawing on extensive existing resources already in the projection team's possession. This includes information that was provided by the UNAIDS Regional Support Team, along with the UNAIDS epi and behavioural database, as well as rather extensive HIV in Asia resources gathered at the East-West Center over the last decade and a half.
- For each country, to review these documents, using an Excel spreadsheet to extract the key epidemiological and behavioural indicators needed for AEM modelling.
- To review this information carefully, with attention to the biases, geographic limitations, and quality of the available data, to form a realistic assessment of national epidemiological and behavioural trends in the country.
- To enter this into the AEM Workbook, and then adjust the parameters to obtain the best fit to the epidemiological trends. In countries where prevalence trends were not available, models were calibrated to reported AIDS cases and, if necessary, reported HIV infections.
- Models were directly compared against the projections of the UNAIDS epidemiology group – and where serious differences in magnitude or timing of the epidemic were seen, the team ensured the AEM results were supported by the available data. In general, agreement was fairly good.
- When complete, the AEM workbook for each country has the full set of data on the epidemic in the country, and allows easy generation of policy analyses based on prescribed levels of behavioural change in response to specific policies and programmes. It also contains a full ART model, allowing assessment of the impacts on incidence and prevalence of first-line and second-line ART.

The regional team reviewed over 4700 journal articles, gray literature documents, and unpublished reports. It took full advantage of surveillance sets, or reported HIV infections and AIDS cases when it had access to them. The result is that each national projection was validated against either observed prevalence trends or observed AIDS cases trends through to the present (2007).

This resulted in 16 national projections for each of the major countries of Asia. Smaller countries, which contribute only marginally to regional trends by virtue of their size, were clustered and treated as a whole.

1.1.2.3 Assumptions regarding the future in these projections

For the future, behaviours, including levels of sexual risk, condom use, injecting practices, etc., were left as they were in 2007 as the epidemic was projected into the future. Intervention scenarios were

run to determine the effectiveness of various prevention approaches by comparing the epidemic that resulted from assuming stable behaviours in the future (the baseline) with the epidemic which resulted from a specific intervention effort, using the expected levels of behaviour change from that intervention as inputs to the AEM.

For ART, current ART levels taken from UNAIDS and WHO reports were used throughout 2006, with the assumption that ART coverage will reach 50% of those in need by 2010 and 80% of those in need by 2020. It is assumed that 10% of those starting on first-line and in need of second-line therapy received it in 2006, growing to 50% by 2010 and 70% by 2012. In specific countries, such as Thailand where coverage has expanded rapidly and infrastructure is strong, higher levels of ART coverage are assumed.

1.1.3 Several patterns of HIV transmission are seen in the region

For the reasons outlined earlier, this report will not present country-specific projections. Instead, it will discuss the factors that influence the shape of the regional trends, to be discussed in the next section, by clustering the countries of Asia according to their epidemic trends and patterns. After careful analysis of available data sets and modelling of the national epidemics, the countries of Asia can be classed into four major clusters, whose prevalence trends in both percentage of adults living with HIV, and absolute number of adults living with HIV are presented in Figures 1.2 and 1.3 respectively:

- *Higher prevalence countries, where success has contained the epidemic and HIV prevalence has started to decline.* These include the well-documented successes in Cambodia and Thailand, but also the southern high-prevalence states of India and Myanmar, which are now seeing national prevalence start to fall. These are countries where HIV prevalence grew rapidly in the early 1990s because levels of sex work risk were high compared to the rest of the region. In all of these places, the high prevalence aided in mobilising major responses, which brought condom use in sex work to high levels, containing and beginning to reverse the growth of the epidemic. Figure 2 illustrates the declining prevalence observed in this cluster.

- *Moderate prevalence countries, where the epidemic continues to expand.* These include China, Indonesia, Malaysia, Nepal, Viet Nam and the lower-prevalence states of India. In these countries, sex work-related risk is moderate, and while there have been prevention efforts in sex work, to date they have been insufficient to reverse or avert the epidemic and it continues to grow steadily, as seen in Figure 2.

- *Countries with currently low prevalence, but where the potential for a growing epidemic is high.* These include Pakistan and Bangladesh. These are countries where the epidemic is low because it has only started recently, but the possibility of a substantial future epidemic exists because of high reported levels of risk behaviour. Of late, epidemics among IDUs have been observed in both countries, creating the potential to seed heterosexual epidemics.

- *Countries where the epidemic has been or continues at fairly low levels because either risk is low, and/or prevention efforts have been effective.* These countries include Hong Kong, Japan, Lao PDR, The Philippines, the Republic of Korea, Singapore and Sri Lanka. In these countries, sex work risk is comparatively low, either because there are relatively few clients in the population, or because levels of condom use in sex work have already grown to be fairly high. They have low-level, but steadily-growing epidemics at present.

As originally postulated by Chin[2] and collaborators, the overall prevalence level in a country is largely determined by the percentage of clients in the adult male population and the sex workers' number of clients per night. This is reflected in the classification provided above, where the clusters are largely distinguished by how common sex work is in the country.

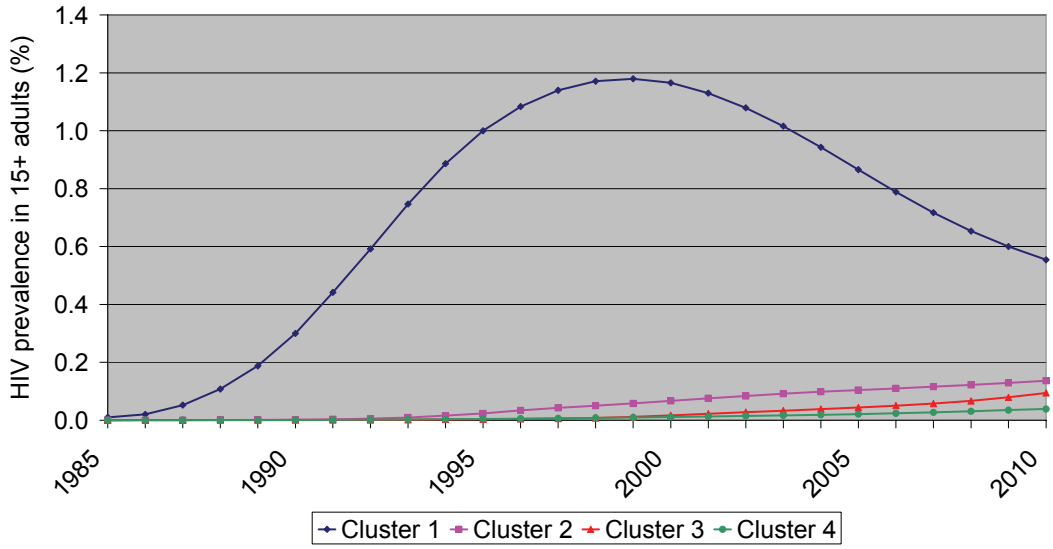


Figure 1.2: Percentage of 15 and older adults living with HIV in countries in the four clusters including effects of antiretroviral therapy

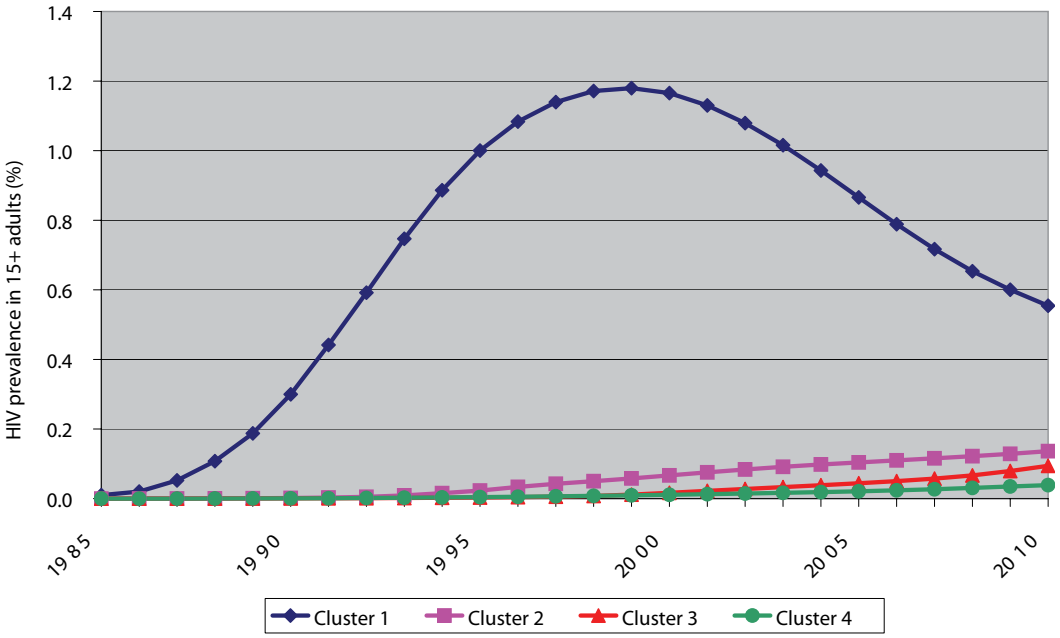


Figure 1.3: Number of adults living with HIV in countries in the four clusters including effects of antiretroviral therapy

Figure 1.4 shows the new infections in each cluster by route of transmission. The early dominance of infections through sex work is apparent in the first cluster, which starts to decline in the mid-1990s as condom use scaled up rapidly. In the second cluster, IDUs have played much more of a role in

[2] Chin J, Bennett A, et al. Primary determinants of HIV prevalence in Asian-Pacific countries. *AIDS* 1998; 12 Suppl B:S87-91.

producing substantial epidemics in China, Indonesia, Malaysia and Viet Nam in the mid-1990s. The third cluster, containing Bangladesh and Pakistan shows rapid growth because of the assumption that IDU epidemics took off in the mid-2000s.

In both countries today, surveillance is regularly picking up HIV among IDUs. The measured levels of sexual risk in these countries creates the potential for sex work related transmission, although this component of the epidemic grows more slowly than in most of the region because men are largely circumcised in both countries. In the low prevalence countries of cluster 4, sex work played an early role, but is rapidly being replaced by high levels of transmission among MSM. These figures illustrate the great diversity seen in the epidemics of Asia.

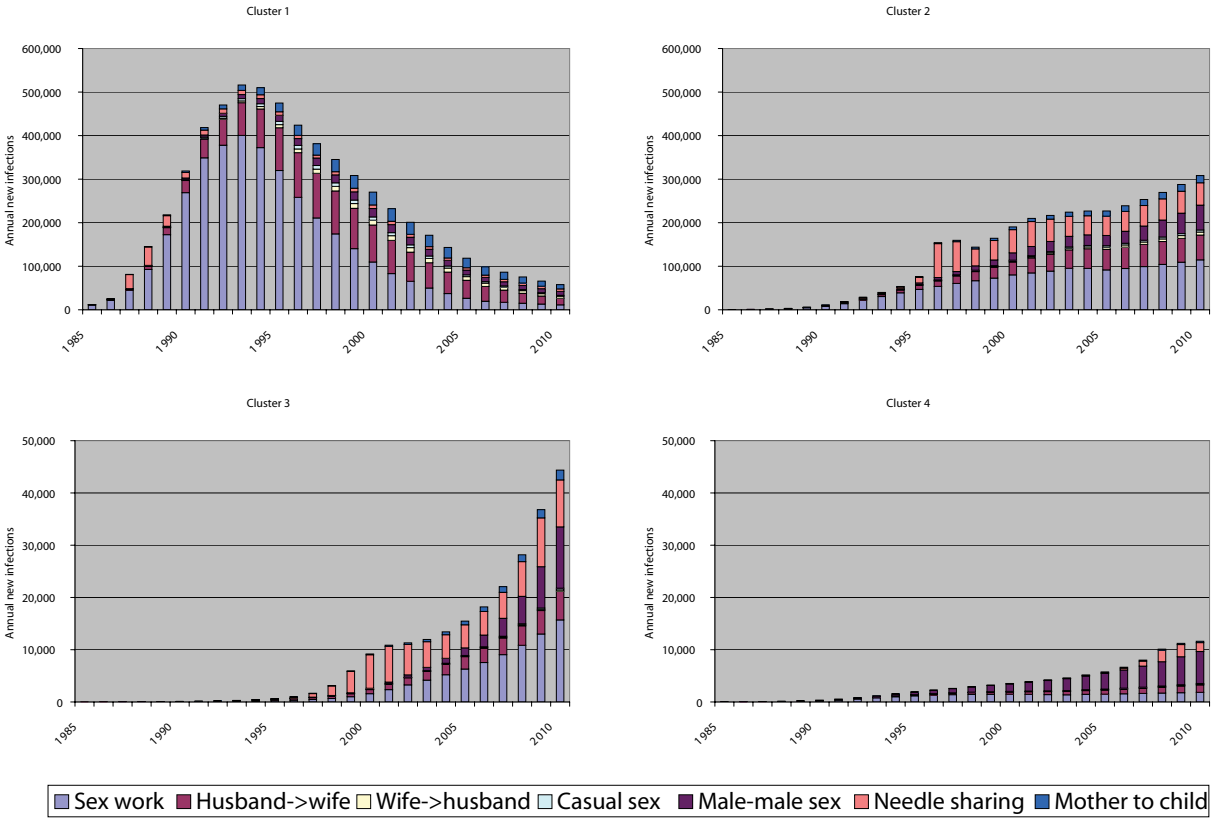


Figure 1.4: Distribution of annual new infections by transmission modes for each of the four clusters

Note: the scale is quite different for clusters 3 and 4, which are smaller in population and epidemic severity than clusters 1 and 2.

1.1.3.1 Regional results – the Asian pandemic

Not too surprisingly, given the severity of their epidemics and their relative sizes, the countries in the first cluster – the high prevalence states of India, Myanmar and Thailand (and to a lesser extent Cambodia because of its small population size) – have dominated the first decade of the Asian HIV pandemic. But, as seen in Figure 1.4, these countries and states have largely brought the sex work component of the epidemic under control with rapidly-declining levels of new infections.

The future will be more strongly influenced by the progress of the epidemic in the countries of clusters 2 and 3. The epidemics in cluster 2 are still showing relatively steady growth – through a mixture of new infections in sex work, MSM, and to a lesser, but still important, extent of late IDUs. The stable level of new infections over the years in IDUs and the growing proportion among

MSM shows the failure to address these components of the epidemic. They are also some of the world's most populous countries – China, Indonesia and the low-prevalence states of India. Even with slowly growing epidemics, they will dominate the next phase of the regional pandemic as Figure 3 shows. Pakistan and Bangladesh in cluster 3 will become more serious epidemics once HIV takes hold among IDUs – something that is already becoming apparent in surveillance data. Sexual risk, between sex workers and clients and among MSM, will then give these epidemics substantially more reach into the larger population.

Figure 1.5 shows the result of combining the clusters to produce the overall trends in the regional epidemic. This is the Commission's projection for the future of HIV in Asia if responses are not re-focused to increase their effectiveness. In 2007, just over 5.1 million adults and children in the region were living with HIV, with 9 million cumulative infections. This compares well with the UNAIDS estimate released in late November (2007) of 4.8 million people in East, South and Southeast Asia.

In the Commission projections, approximately 344,000 adults and 32,000 children became infected in 2007, a total of 376,000. This is somewhat lower than the UNAIDS estimated incidence of 430,000, largely because the dynamics of the earlier stages of the epidemic are different and these projections indicate better control of new infections in the higher prevalence areas of the region. The Commission projections indicated 418,000 adult and child deaths in 2007, somewhat higher than the 302,000 estimated by UNAIDS. This results largely from the earlier peaking of the Indian epidemics in the high-prevalence states in the Commission projections relative to the UNAIDS projections, which means people on average were infected somewhat earlier (see Figure 1.6), producing more deaths in 2007.

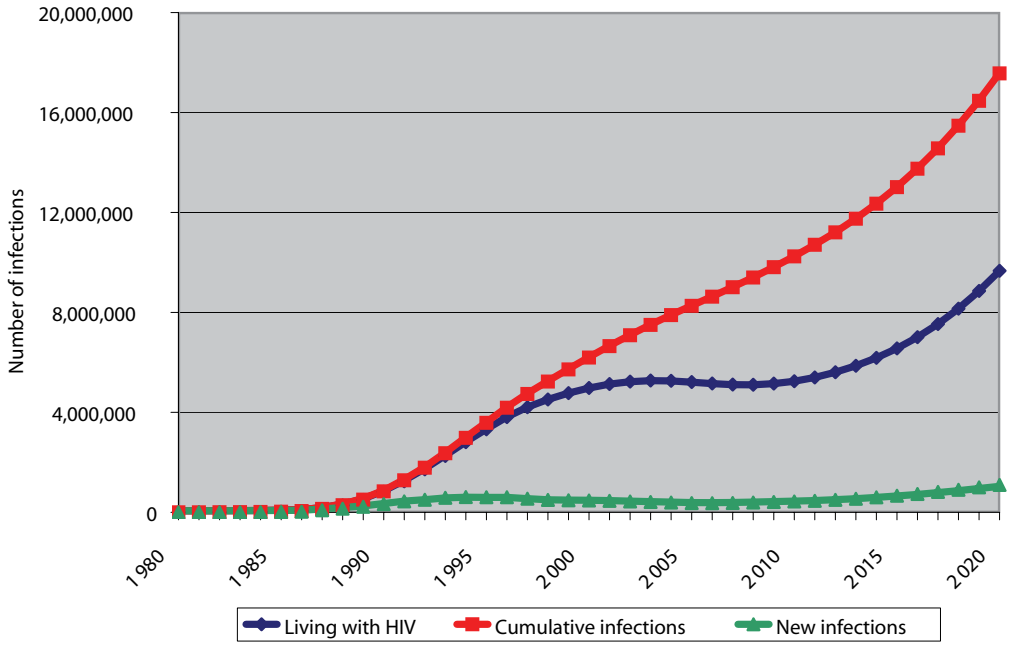


Figure 1.5: The Commission projections for the combined epidemics of Asia – the number of adults and children living with HIV including the effects of ART.

As Figure 1.6 shows, males continue to dominate the Asian epidemics, with a male-female ratio of the order of 2, and this trend is likely to continue into the future. By the late 2010s, the male-female ratio will start to rise for reasons we will discuss in the next section.

The pattern of new infections by different sub-populations for the entire region (Figure 1.7) shows a dynamic and evolving regional pandemic. New adult infections in Asia peaked at almost 595,000 in the mid-1990s, but effective condom promotion for sex workers and clients in the earlier and more severe epidemics was reversing that growth in new infections by 2000. It has continued to decline as condom use has inched up more gradually in other countries, such as those in cluster 2.

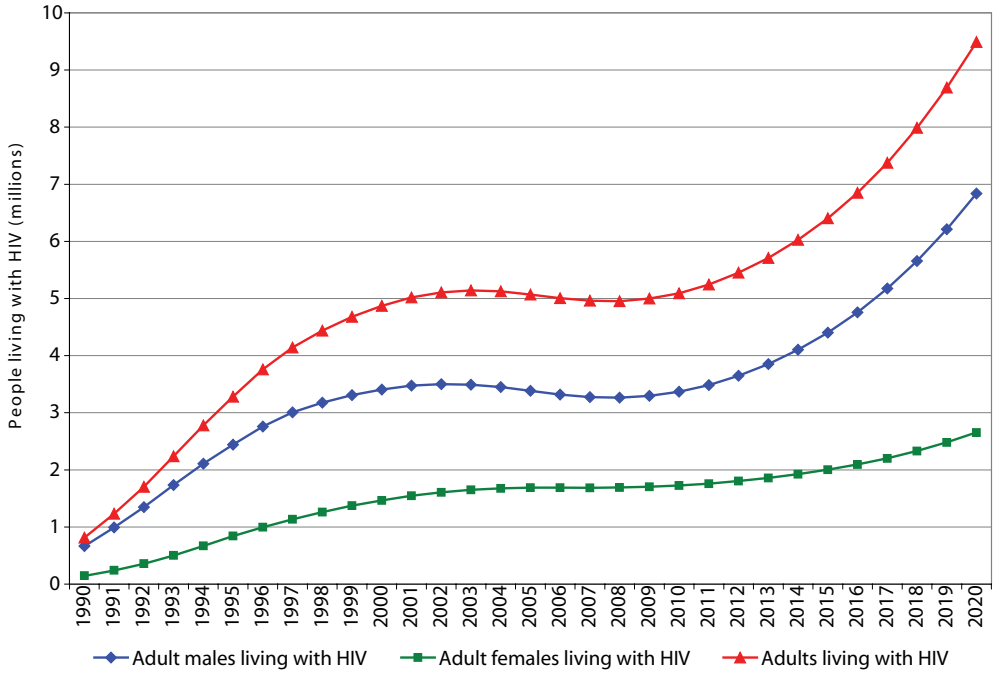


Figure 1.6: The number of adult males and females living with HIV in Commission projections including the effects of ART

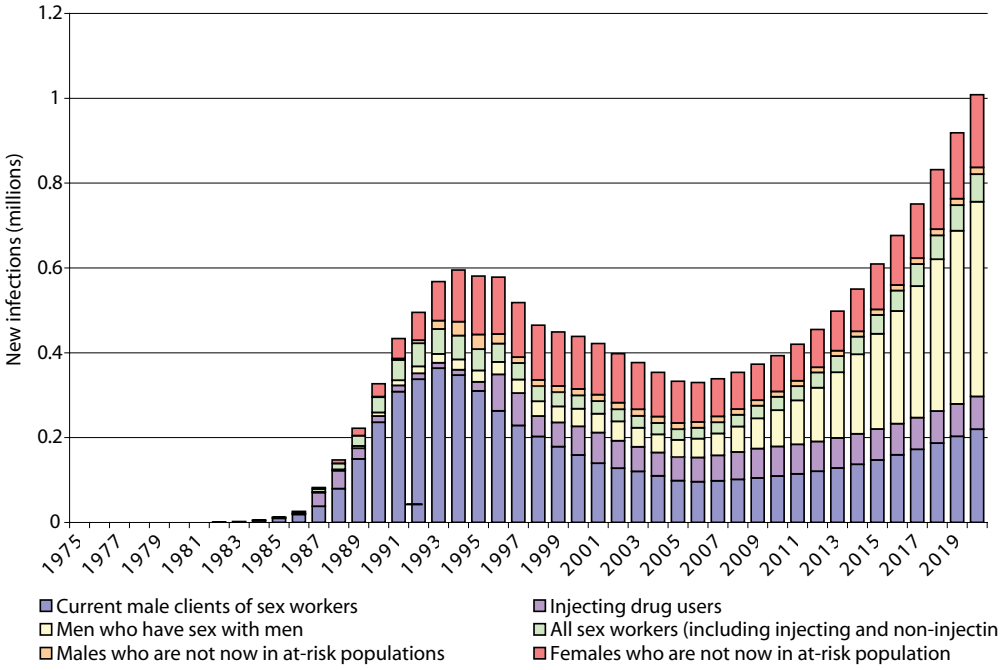


Figure 1.7: Annual new infections in adults by sub-population in the Commission projections

At the same time, low coverage has meant that prevention has not been as effective for other groups such as MSM, IDUs, and wives of clients or other higher-risk men. As a result, their relative contribution has been increasing, even as the overall numbers fall. However, the region is near the bottom of the decline in new infections. Unless further prevention progress is made, especially in the groups mentioned above, incidence is expected to rise in the near future as the number of clients grows, transmission among IDUs continues steadily, the epidemic among MSM grows, and husband-to-wife transmission continues.

A review of the contribution of different groups to new infections (Figure 1.7) reveals that the early stages of the epidemic are largely dominated by transmission through sex work and later by husband-to-wife transmission (low-risk women in Figure 1.7). By the late 1990s, effective control of transmission in sex work in the more heavily-affected countries of cluster 1 had radically reduced that contribution, and it continued to fall through the early 2000s. Meanwhile, the contribution of other groups continued to rise across the region. At the present time, new infections in the region are distributed among a number of different groups and not concentrated in any one. Substantial numbers of new infections are coming from clients and sex workers, from husband-to-wife transmission, from MSM and from IDUs. HIV in Asia is a mix of transmission among different groups; that is, all modes of transmission are in play today and effective regional responses must address them all.

It is worth noting the large contribution of MSM to new infections, which will grow in the future. These projections assume 2% of adult men are actively engaged in sex with other men, with approximately 0.5% of adult men falling into the higher-risk MSM category that is producing the high venue-based prevalence being seen around the region (30% in Bangkok, 9% in Hanoi, 6% in Beijing, 20% in Delhi, 4% in Hong Kong, etc.).

The other 1.5% of MSM is assumed to be at approximately one-third that level of risk. The high efficiency of anal sex in transmitting HIV, coupled with low prevention coverage, about 5–10% at best, leads to a rapidly-growing regional epidemic. The rapid growth of this component of the epidemic is now being observed in most major cities in the region: Beijing, Hanoi, Bangkok, Jakarta, Hong Kong, Singapore, Tokyo etc.; yet because of neglected prevention, most MSM in Asia have never been told that anal sex is a risk for HIV at all and remain unaware that it is in reality a higher-risk and a more efficient form of HIV transmission than any other form of sexual activity. Accordingly, on a regional basis, especially outside of Western-influenced populations in large cities, condom use among MSM remains extremely low.

1.1.4 Interpretation and response

How then should these findings be interpreted and what are their implications for future responses in the region? Following the hypothesis[3] that Asian country epidemics proceed in waves (the waves being IDUs, sex workers, clients, wives and children), the *regional* HIV epidemic in Asia really consists of three *tsunamis* of infections:

- *The first sex work tsunami – loud and clear.* The first major growth of HIV in Asia occurred in those places where many men visited sex workers and sex workers had two to four clients per night. These were places like the high-prevalence states in the Southern part of India, Thailand and Cambodia. This gave rise to a rapid burst of infection in the late 1980s and early 1990s. However, with the rapid rise in HIV prevalence observed in these places, a rapid response also took place. As Figure 1.2 showed, these responses effectively brought this tsunami under control.

- *The second sex work tsunami – silent and subversive.* This was the wave of infections that developed in countries with lower levels of risk, where sex workers usually had one client per night only. In these places, the epidemic took longer to get started. HIV among sex workers grew more gradually to perhaps a few percent over a decade. In these settings, it was harder to convince people of the danger, responses lagged, and these epidemics continue to grow as seen in Figure 1.3. In 2007, indications were that some countries are better at responding to this, but there is still much work to be done and two-thirds of the new infections in the region are still among sex workers, clients and their wives. However, given that responses have had some impact on the second wave, they now need to urgently address the third;

- *The third MSM and IDU tsunami – the quietly invisible legacy of neglect.* This tsunami has been the quietest of all, but with more effective control of epidemics among sex workers and clients, it threatens to become the dominant factor driving HIV transmission in the region. Moreover, it is not just the projections presented here that indicate this, the evidence is also abundantly clear in the epidemiological record. High and growing HIV prevalence has been detected among MSM around the region. In Hong Kong, Singapore and Japan, this is now the major source of new infections. Although MSM represent a small portion of the population, the potential for 10–30% HIV prevalence in this population is real given the efficacy of anal sex as a transmission mode. With overall regional adult prevalence being only 0.2% in 2007, MSM can easily add another 0.1 to 0.2% to adult population prevalence if their prevention needs remain unmet. Similarly, the epidemic among IDUs continues largely unabated – prevalence remains high in the region, indicating ongoing transmission through needle-sharing. New epidemics among IDUs continue to emerge in the more remote parts of large countries and in places such as Bangladesh and Pakistan. Just as with MSM, prevention efforts for IDUs have not been brought to scale and, as a result, infections among IDUs continue to be serious contributors to ongoing incidence. This tsunami is the legacy of regionwide neglect.

What then are the lessons and implications of this work for the responses in Asian countries?

[3] Brown T, Peerapatanapokin W. The Asian Epidemic Model: a process model for exploring HIV policy and programme alternatives in Asia. *Sex Transm Infect* 2004; 80 Suppl 1:i19-24.

Chin J, Bennett A, et al. Primary determinants of HIV prevalence in Asian-Pacific countries. *AIDS* 1998; 12 Suppl B: S87-91.

Thai Working Group on HIV/AIDS Projection. Projections for HIV/AIDS in Thailand: 2000-2020. Bangkok: Ministry of Public Health, Thailand, 2001.

Weniger BG, Limpakarnjanarat K, et al. The epidemiology of HIV infection and AIDS in Thailand. *AIDS* 1991; 5 Suppl 2:S71-85.

- *The region must respond to all components of the epidemic in order to be effective.* As Figure 7 shows, on a regional basis in 2007, all populations are contributing substantially to new HIV infections – sex workers and their clients, husbands and wives, IDUs and MSM. That means that prevention efforts across all populations are needed and needed urgently: otherwise, the region will forfeit the incredible gains made in the late 1990s.
- *Individual countries should assess where they are and act accordingly.* As Figures 2, 3 and 4 show, the countries of the region are facing very different epidemics. The populations contributing to new infections vary widely from country to country. Some countries have transmission in sex work largely under control, and need to focus more on MSM, IDUs and husband-to-wife transmission. Others still have substantial work to do on sex work transmission. However, they should tune their responses to their local epidemiological situation, in such a way that they avert the largest number of current and future new infections.
- *The lull between the tsunamis is ending, the second tsunami has not yet receded and the third is about to break – the time to act is now.* The projections tell an incredible regional success story between 1990 and 2005, but Asia risks letting that success slip through its fingers. New infections are beginning to accelerate again, fuelled by complacency, failure to target resources effectively and appropriately, and neglect of prevention of key populations at higher risk in the region. However, it does not have to be this way – the potential exists to reverse this trend.

1.1.5 What can be accomplished if appropriate prevention priorities are set?

The Commission has made a series of recommendations on focusing Asia's prevention efforts where they will have the greatest impact. Effective prevention can:

- Raise condom use between sex workers and clients to over 80% on a national scale.
- Halve STI incidence among sex workers and clients (or more).
- Halve needle-sharing among IDUs; also halve the percentage of actual injections they share.
- Bring condom use between MSM down to 80% levels.

One of the reasons for the Commission projections was to explore the impact of appropriately-targetted policies that produce behaviour change where it will have the greatest impact on the epidemic. Thus, this paper closes with a presentation of what will happen if the levels of behaviour change outlined above are achieved by properly targetted and resourced intervention programmes at scale. Figures 1.8 and 1.9 show the future course of the epidemic, and the trend in new infections should those prevention programmes proven effective among key populations at higher risk be implemented with high coverage between 2007 and 2012. This is an achievable and realistic target – both richer and poorer countries in Asia have previously achieved it on this timescale.

Figure 1.8 shows what the impact of these programmes on the regional picture of the epidemic. The number of new infections will steadily fall, and regional HIV prevalence will begin to slowly fall. The decline would be even steeper except that ART will be saving many lives. Cumulative infections through 2020 will fall from almost 18 million to 12 million; almost 6 million infections averted. HIV prevalence in the region will never rise again, but will begin a steady decline.

Asia has the resources and ability to make this a reality; the only question is if the leaders of Asia have the will to become the first success story in reversing a regional pandemic.

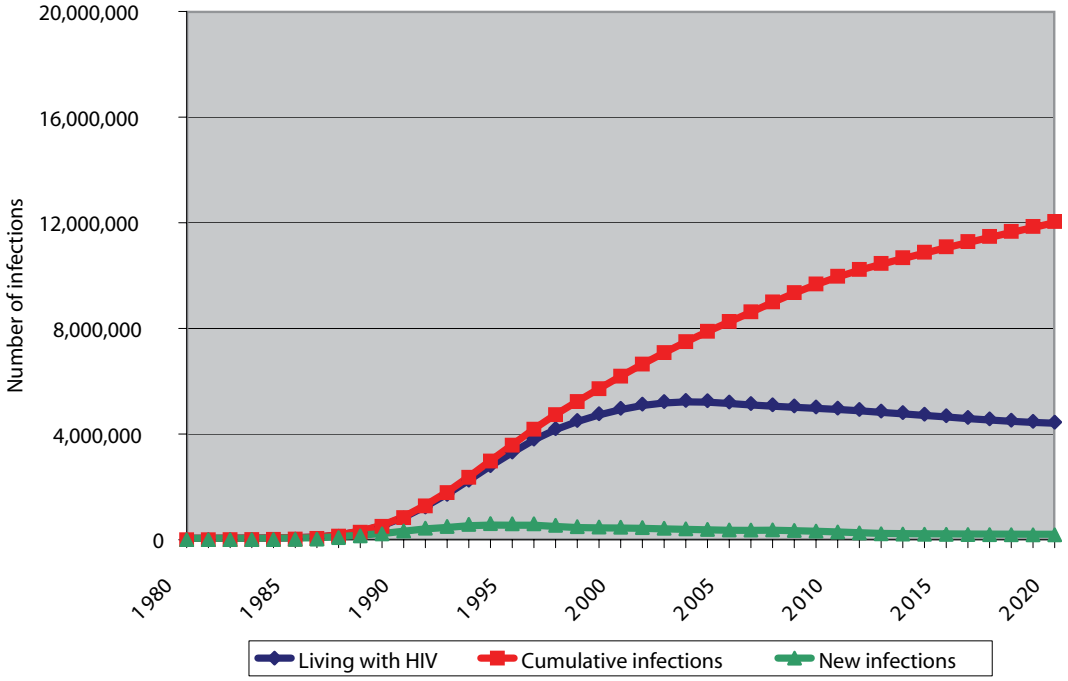


Figure 1.8: Impact of a focused prevention package recommended by the Commission on the regional epidemic. Compare with Figure 1.5

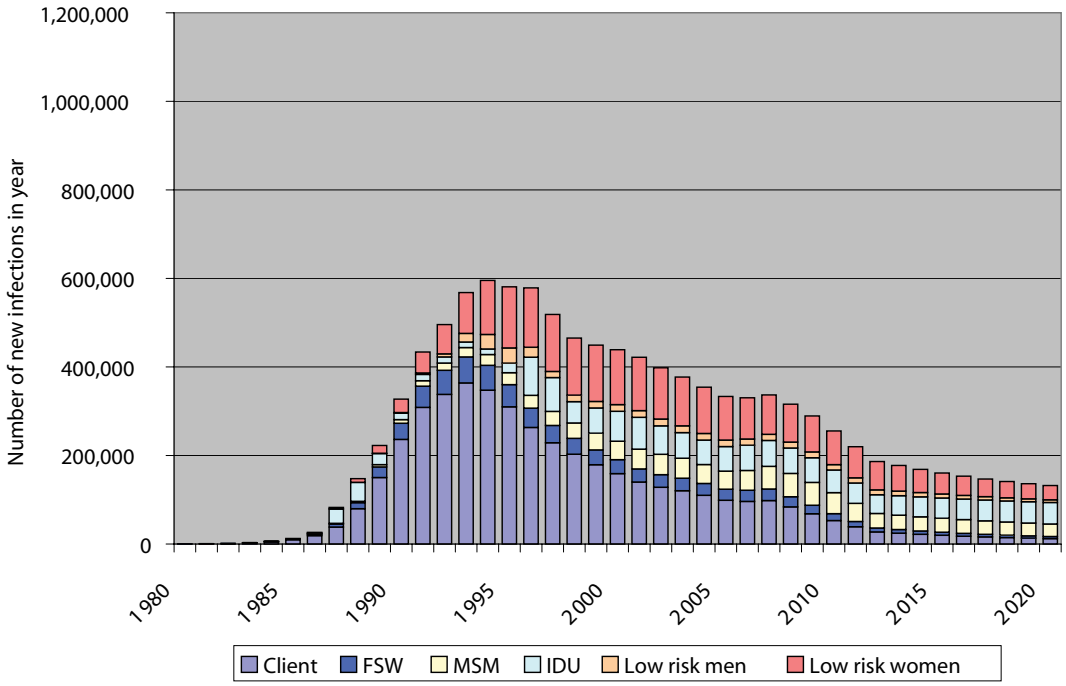


Figure 1.9: New infections if best-practice intervention packages for sex workers and clients, MSM and IDUs are implemented on a regional basis. Compare with Figure 1.7

SUPPLEMENTARY NOTES

NOTE 1A: THE ASIAN EPIDEMIC MODEL (AEM) - TECHNICAL DETAILS[4]

The Asian epidemic pattern

What do HIV epidemics in Asia look like? Weniger[5] and other authors have noted that HIV infections in Asian epidemics proceed in waves. The first wave occurs among IDUs and/or MSM. This is followed by a wave among sex workers; shortly followed by a bigger wave among the much larger population of clients of sex workers. This, in turn, is followed by a wave among the wives of the clients and their children. This pattern, first identified in Thailand, has been observed in country after country in Asia. In the surveillance data, this wave pattern is seen as an early appearance of infections among injecting drug users and men who have sex with men, followed by a rapid rise in infections among sex workers, which soon leads to a rise in HIV among men visiting STI clinics (the clients of sex workers), which is invariably followed by more gradually increasing prevalence in antenatal clinics (wives and children of men at-risk).

The relative contribution of these different waves may vary, but the order, that is the general pattern, is usually the same. This tells us that in Asia a number of specific and well-defined populations play a key role in HIV epidemics. These include female sex workers (FSW) and their clients, injecting drug users (IDU), men who have sex with men (MSM), and the spouses and children of these groups. Figure 1.1A illustrates these populations and gives a rough idea of their comparative size in Asian settings.

Most early infections in Asia are strongly focused in the behaviorally linked at-risk populations shown at the top of this diagram, that is, IDU, MSM, FSW and clients. As most of these at-risk populations are male, with clients being by far the largest, this creates a strong male dominance to early infections in Asia. As the epidemics evolve, infections move from these populations to their regular female partners, predominantly their spouses. As the epidemic matures, this subsequent transmission within committed relationships produces the majority of female infections in Asia, while most ongoing male transmission still occurs within the male at-risk populations.

The Asian Epidemic Model – a model based on this pattern

In 1998, the Asian Epidemic Model (AEM) was developed based on this repeatedly observed pattern of HIV transmission in the region. The AEM is a computer model which simulates the transmission of HIV within and between the important at-risk populations and their partners in Asia. Internally, the AEM contains a compartment for each of the important sub-populations and includes the *most* important forms of HIV-related risk behavior for each of these sub-populations.

[4] The information in this note is from an early draft of the Analysis and Advocacy Guidelines currently in preparation by Family Health International, the USAID Health Policy Initiative (RTI and Constella Futures) and the East-West Center.

[5] Weniger BG, Limpakarnjanarat K, et al. The epidemiology of HIV infection and AIDS in Thailand. *AIDS* 1991; 5 Suppl 2:S71-85.

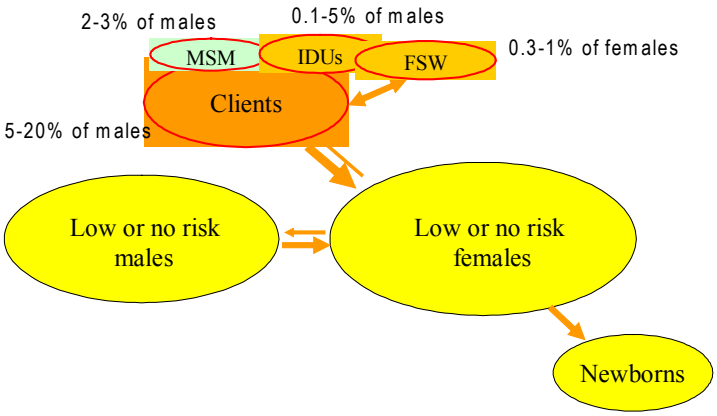


Figure 1.1A: The primary populations affected by HIV in Asia are shown above. The approximate percentage of adult males and females in the primary at risk populations is shown.

The key sub-populations included in the AEM and the risks calculated for them are:

- Injecting drug users, who have needle sharing risk and sexual risk from visiting female sex workers;
- Men who have sex with men, who have sexual risk from sex with other MSM, with male sex workers (MSW), and with female sex workers;
- Male sex workers, who have sexual risk from sex with MSM clients and female sex workers;
- Clients of sex workers, who have sexual risk from sex with female sex workers, casual female sexual contacts, and sex with their wives;
- Non-clients, which includes all males who are not MSM, IDU, and clients. Their risks include sex with casual female contacts and with their wives;
- Female sex workers in two groups – the first group having many clients per night (high frequency sex workers) and the second having fewer clients per night (low frequency sex workers). Their risks include sexual contact with clients, both IDU and non-IDU, and needle sharing risk if they inject.
- General population women, whose risks include sex with their husbands or regular male partners, and sex with casual male contacts.

The model is dynamic with the sub-populations changing over time as new individuals enter at age 15 and others die of either background mortality or HIV-related causes. The model also allows movement between the groups, as shown by the bidirectional arrows. For example, a woman may leave the general female sub-population, become a sex worker for several years, and then return to the general female sub-population. Similarly, a male may become an injecting drug user for a period of time and then return to the general male population. This allows the model to capture important effects such as the increase in prevalence among general population women caused by the presence of ex-female sex workers, many of whom became infected while in sex work. The effects of HIV on children are also captured in the model in that women in the general female population can give birth, and the probability of their passing HIV to their newborn, both with and without antiretroviral therapy is included.

How does the AEM work and how does one use it?

To understand the AEM interface and how to use it, one must know a little about how it works internally. The model takes four general classes of input data:

- Sizes of the important at-risk populations and the population at large;
- Frequencies of sexual and needle sharing risk behaviors that transmit HIV, that is, how often does an individual with these behaviors engage in them?
- Levels of protective behaviors, in particular, condom use and use of clean needles and syringes;
- HIV and STI prevalence levels over time in the at-risk populations, and the population at large, if available.

The actual interface to AEM is an Excel workbook, which allows the user to easily enter the years of available data and calculate intermediate values between those years. Needless to say, collecting and extracting the input data needed from available data sources is the most time and resource intensive part of the process of preparing such a model. However, doing it carefully is essential. If poor quality data inputs are provided, valid projections will not be produced: garbage in, garbage out.

Using this input data, the AEM performs a series of calculations to determine how many new HIV infections occur in each sub-population in the model for each year. These calculations are simple in concept. From the frequencies and sizes of the relevant sub-populations, we calculate the number of sexual or needle sharing contacts which occur. This is then multiplied by the probability of transmission of HIV in a single act of this type and the fraction of partners who are infected with HIV to give the total number of new infections in the relevant sub-population.

Given the number of new infections and the rate at which people succumb to illness and death from HIV-related disease, the number of HIV infections in each sub-population the next year can be determined. This way, the entire epidemic can be calculated from the time of first introduction of HIV to the last year for which behaviors are provided by the user. With assumptions about future behaviors, projections can extend beyond the present.

The question then is: where does one get the probabilities of transmission? The scientific literature gives us some idea of what these might be, but leaves a lot of room for variation. For example, we know the probability of a man passing HIV to a woman if both have no other STDs is in the range of 1/1000 to 1/500 but in terms of calculating new HIV infections this is a very wide range. If we use 1/500 we will get twice as many new infections as if we use 1/1000. And, even more importantly, under the behavioral conditions common in Asia, where many clients are served by a small number of sex workers, a little variation like this makes a huge difference in the epidemic. Figure 1.2A shows the effect of three different probabilities of male to female transmission on the prevalence in adult men under the behavioral trends observed in Thailand over the last decade and a half. Increasing the probability by only 0.0002 more than doubles the number of adult men infected. Increasing it by 0.0004 almost quadruples it. If you think about it, the reason for this difference is obvious. If the probability is twice as high, each HIV+ client will infect twice as many sex workers, who in turn, will infect even more clients, who will infect more sex workers. Thus, there is a feedback loop between infected clients and infected sex workers, which is very sensitive to how likely a man is to transmit HIV to a woman and vice-versa.

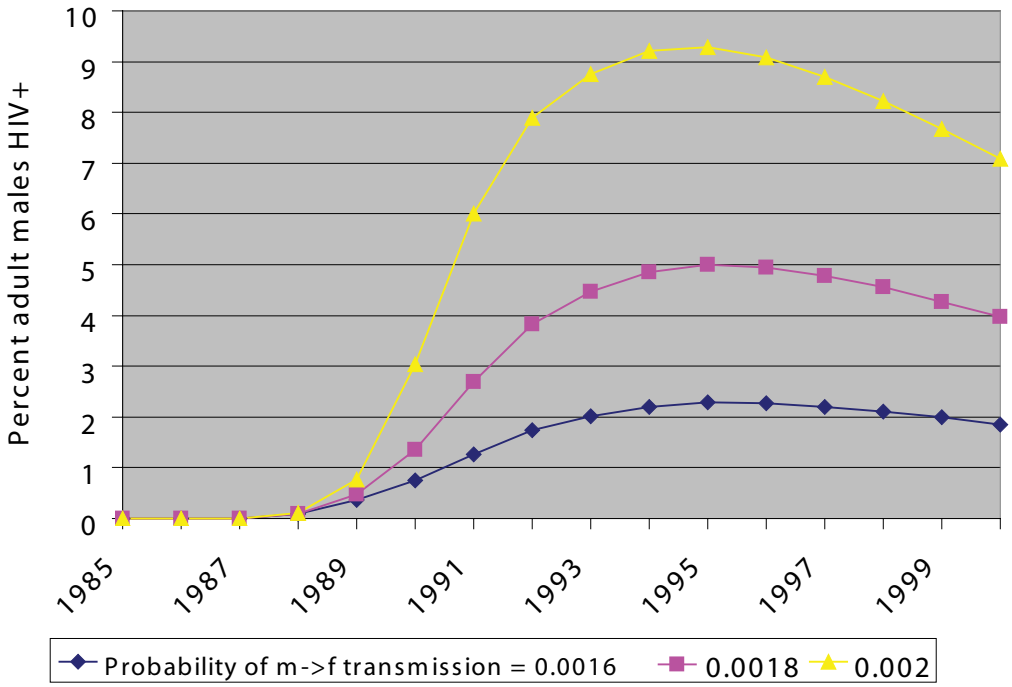


Figure 1.2A: The overall level of HIV among the adult male population in Thailand if we use different probabilities of transmission from men to women in the Asian Epidemic Model.

The AEM actually uses more than one probability of transmission. It needs to account for differences in transmission between anal sex, needle sharing, and vaginal sex, increases in transmission associated with other sexually transmitted infections (STI), decreases in transmission associated with circumcision, and the fact that men are more likely to pass HIV to women than vice-versa. This is done by including a number of probabilities of transmission and cofactors:

- *Probability of male to female transmission*. This is usually between 0.001 and 0.002.
- *Ratio of male-to-female to female-to-male transmission*. Normally this is taken as 3 from the scientific literature.
- *Ratio of contracting HIV for uncircumcised vs. circumcised men*. This is called the circumcision cofactor and is normally set at 3, that is, uncircumcised men are 3 times as likely to contract HIV as circumcised men.
- *Ratio of HIV transmission for men with an STI compared to those with no STI*. This is called the male STI cofactor. Since STI increases HIV transmission, this number can be high. On a per contact basis, normal levels used in AEM in Asia may be as high as 30 to 50. Much of this probably represents the fact that many sex workers in Asia are infected with multiple STI if treatment access is poor.
- *Ratio of HIV transmission for women with an STI compared to those with no STI*. This is called the female STI cofactor. On a per contact basis values in Asia seem to be much lower than for men – something on the order of 10 seems to work well.
- *Probability of transmission in anal sex*. For MSM this is the dominant source of infection, and measured probabilities are much higher than for vaginal sex, on the order of 1/200 to 1/100.
- *Probability of transmission in sharing an infected needle*. For IDU, this is the main source of infection. Values normally used range from 0.004 to 0.008.

There are strong reasons to believe that these probabilities of transmission and cofactors may vary from one country to the next. For example, the types of sexually transmitted infections differ from country to country, which can affect the STI cofactors for those countries. One country may have more ulcerative STI, such as chancroid or HSV-2, while another may have more inflammatory STI, e.g. Chlamydia or gonorrhea. All STI increases HIV transmission, but ulcerative STI increases it more than inflammatory STI. Thus, the country with more ulcerative STI would have higher STI cofactors.

Similarly, different sub-types of HIV may be more easily transmitted sexually than others, in which case, countries with different sub-types would have different probabilities of transmission. Sex workers in countries with more clients per night may have increased risk of small vaginal injuries or abrasions, increasing their overall risk in a single contact. Practices such as failure by males to clean after sex may leave HIV in contact with the urethra or foreskin for an extended period, increasing transmission. The size and interconnection of different sexual networks within a country may also affect the transmission. If sexual networks are small and isolated, the overall probability of transmission per sexual contact on a population basis will be much lower than if the networks are large and well-connected. AEM does not model network dynamics, so their effects must be captured in the transmission probabilities.

AEM is tuned to a country's specific situation

How then does AEM deal with this variation? It *tunes* the probabilities and cofactors to fit the HIV situation in a specific country. This means, we adjust these probabilities and cofactors within certain allowable ranges until we get agreement between the observed HIV prevalence in the key sub-population and the calculated HIV prevalence based on the behavioral trends entered as inputs and the probabilities and cofactors. The process is as follows:

- *The user enters behavioral and size data*. The user enters the sizes of populations, behavioral trends, HIV and STI trends and other data into an Excel spreadsheet.
- *AEM calculates the HIV prevalence produced by these behavioral trends.* AEM is run with a starting set of probabilities and cofactors which calculate the HIV prevalence expected based on the behaviors provided by the user.
- *The user tunes the model to the country in question*. The user adjusts the probabilities and cofactors within allowable ranges to get a good fit between the observed HIV prevalence and what AEM calculates.

The AEM interface makes this process easy for the user. On the left hand side are a series of graphs for the key sub-populations in Asian epidemics. These are: IDU, FSW (high frequency and low frequency), injecting sex workers, MSM and MSW, and general population men and women. On the right hand side are the various transmission probabilities and cofactors the user can change, along with the start years for the epidemics among heterosexuals (Start Year), IDU (IDU Start Year), and MSM (MSM Start Year). As these are changed, the graphs are recalculated and the user can easily compare the resulting prevalence calculated against the observed prevalence in the various populations.

Assuming the behavioral and observed HIV trends entered are accurate for the country in question, the first time AEM is run these curves will usually be too high or too low. If they are too high in all populations, it normally means either the model is starting the epidemic too early or the probabilities of transmission are too high. However, the user can fix this by adjusting the values on the right hand side of the screen.

Once this process of fitting the observed and calculated prevalence in the different sub-populations is complete, the "tuned" AEM model for the country should represent the HIV situation fairly well, assuming the inputs are correct.

What does the AEM give us?

So, now we have a country-specific model for the transmission of HIV over time, containing the main dynamical factors driving HIV epidemics in Asia: sex work, needle sharing, male same-sex behavior, husband-to-wife transmission and mother-to-child transmission. Because it is a complete model based on the *dynamics* of epidemics in Asia, examination of the internal variables in the model allows us to produce a number of useful outputs:

- *HIV prevalence in all key sub-populations.* Because each sub-population has its own compartment we can calculate the number of infected and uninfected individuals and thus, the prevalence for each one, the prevalence for men and women separately, or the prevalence for the population as a whole. For all of these, it provides new, current and cumulative HIV infections.
- *Deaths to HIV by sub-population.* AEM also internally tracks the progression of those infected by HIV from infection to illness to death. This allows us to determine how many deaths occur each year in each sub-population.
- *New HIV infections by route of transmission.* Since the AEM internally tracks who gets infected and the source of each new infection, we can actually extract the new infections by sub-population or by transmission route. This allows us to obtain the number of new infections in any sub-population, determine the impact of specific behaviors (i.e. transmission routes) on the epidemic, or to determine the source of new infections.
- *ART needs and effects.* AEM also tracks progression to the need for antiretroviral therapy (ART) according to the latest UNAIDS definitions for those in need of care. It calculates the number needing care, the number on care, and the number of lives saved by ART based on user-provided inputs of the percentage of people in need who receive therapy over time.
- *Children living with HIV.* AEM also calculates the number of children born to HIV+ mothers, and using inputs on the proportion of HIV+ women receiving prophylaxis for mother-to-child transmission, the number of children newly infected with, living with, and dying of HIV-related causes.

Because AEM is a behavior-based model, it can be used for long-term projections provided one is willing to project likely behaviors into the future. This ability makes it a valuable tool for exploration of program alternatives and policy analysis.

Can AEM replicate the epidemics in actual countries based on real data? Yes.

The first test for a tool like AEM is to apply it to actual behavioral and epidemiological data from a country and see if indeed the behavior *does* predict the epidemiology of HIV. The first country in which this was done was Thailand, a country which has over 15 years of solid epidemiological and behavioral data to work with. Thailand began sentinel surveillance in 1989, during the earliest phases of its epidemic, and expanded to coverage of every province by 1990. Major national behavioral surveys were done in 1990, 1993, and 1997 and again recently in 2006, and national behavioral surveillance in a third of the provinces has been in place for a decade. Large numbers of ad hoc studies of both HIV and its associated behavior have been done since the start of the epidemic. This provides a solid basis for the inputs required by the Asian Epidemic Model, and the existence of nationally representative HIV and behavioral data made direct comparison possible.

In 2000, the AEM was used to construct a Thai national model for HIV. A detailed report, attached in the supplemental materials, was prepared. Similar work was undertaken in Cambodia in 2002, which also had a series of epidemiological and behavioral data starting in 1994 and 1996 respectively. One notable difference between the two countries was that injecting drug use played no role in the Cambodian epidemic. The actual behaviors and HIV trends required by AEM were extracted from the studies in both countries, the data was entered into AEM, and a model was fit for each. Figure A-8 shows the results of this exercise. In both countries, where good behavioral data was available, the Asian Epidemic Model accurately replicated the trends in HIV prevalence in the different sub-populations for a decade or more. This gives some confidence that the model is capturing the realities of HIV dynamics in an Asia setting.

A quick first look at some program implications using AEM

The strength of a model such as AEM, which is based on the way Asian epidemics actually work, is that it is easy to see the connections to programs that address HIV and its impacts in Asia. Once an AEM projection has been prepared for a country, it can be used to examine a number of critical programmatic questions. Some of these questions include:

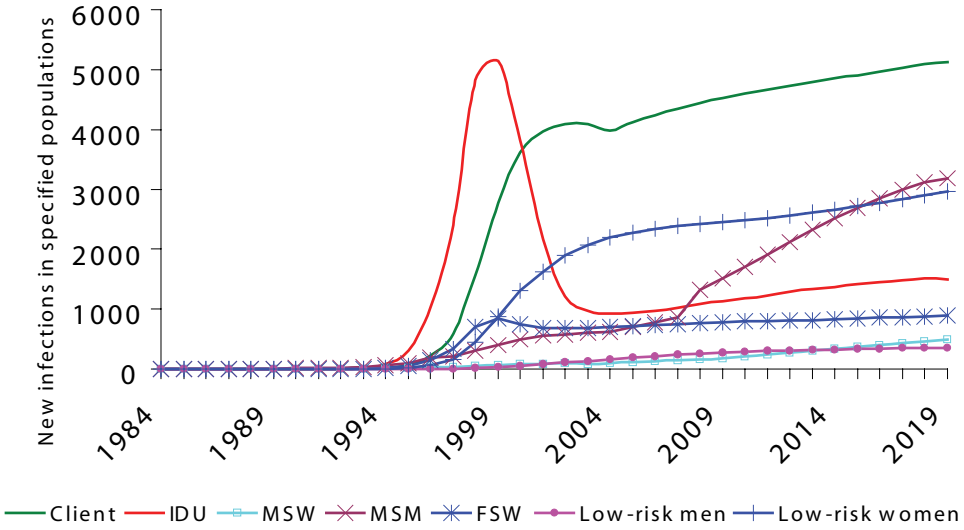


Figure 1.3A: New infections in Ho Chi Minh City, Viet Nam over time as determined by an AEM fit to the epidemiological data in the city.

Are our programs focused in the right place?

A close examination of the number or proportion of new infections in each sub-population, and how they change over time, can help to identify places where strengthening programs will have the greatest impact on the future of the epidemic.

AEM was applied by the A^2 Viet Nam team to the situation in Ho Chi Minh City, Viet Nam. Figure A-9 shows the source of new infections over time coming out of this work. In the early stages of the epidemic, injecting drug use was the major source of new infections, but by the early 2000s new infections among the clients of sex workers had come to dominate the epidemic and the second largest source of new infections was low-risk women who are primarily the wives of the IDU and clients infected earlier. A serious epidemic among MSM was also on the horizon, becoming very significant by the end of this decade. On comparing the results of this model with the actual programs in place on the ground, it was decided to strengthen programs addressing sex work, MSM and IDU.

If one reviews the proportion of new infections acquired through different transmission routes in Thailand, one sees the proportion of new infections attributable to sex work declining substantially starting in the early 1990s. This, coupled with the major declines in overall prevalence seen in the country, demonstrates the effectiveness of the prevention programs for sex workers and clients done in Thailand. However, an increasing proportion of new infections is now occurring among MSM, a group for whom the programs in Thailand have been very weak. This has helped to focus attention on the need to strengthen and expand programs for this community. Similar work with the AEM in Hong Kong has led to the allocation of a special fund to address HIV prevention needs in the MSM community.

Did our past programs have any impact on the epidemic?

Policymakers often need reassurance that the programs they are supporting make a difference. One of the difficulties in demonstrating the impact of prevention programs to policymakers is that they only see the HIV situation that results when the program is in place. They never directly see the impact of their programs or what would have happened in the absence of the program if behaviors had not changed. Having a model like AEM makes it possible to show them the impact of their choices. For example, in Thailand, a major national prevention program was put into place in 1991. What effect did this have on the epidemic? The epidemiological data was not very convincing. Despite the major program effort begun in 1991, HIV continued to climb until the mid-1990s among sex workers, and among pregnant women until the early 2000s.

But when the history of the epidemic was reconstructed in AEM, one got a very different picture. Examining the new infections over time, as shown in Figure 1.4A, one saw that concurrent with the major scale-up of effort, HIV infections among clients began a rapid decline. A few years later this was followed by a decline in HIV among their wives as the effects of the earlier prevention efforts among sex workers and clients propagated through to their wives. Thus, while prevalence only declined several years after efforts began, the effects on incidence were more immediate and apparent when the epidemic was analyzed with AEM.

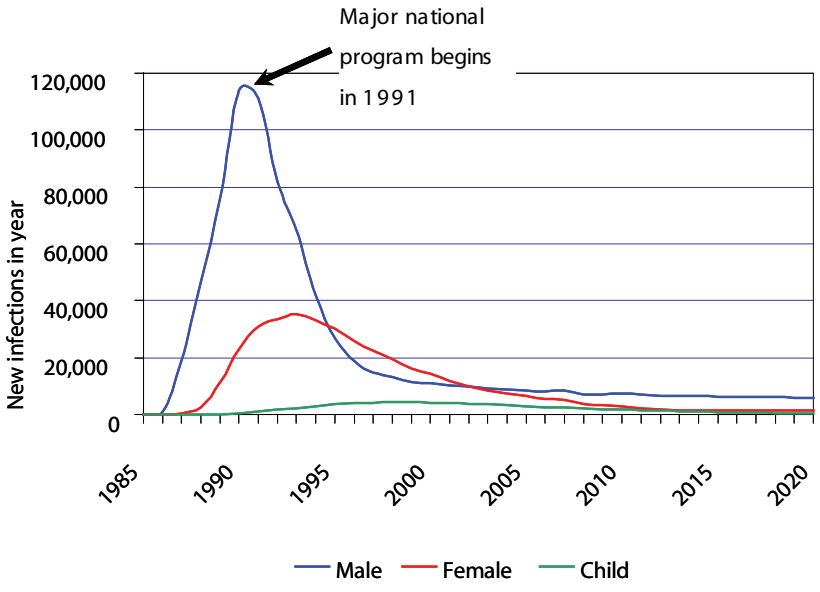


Figure 1.4A: An AEM reconstruction shows that new infections in men, mostly among clients, began to decline shortly after Thailand took its national prevention program to scale.

Prevention efforts in Thailand and Cambodia were very successful at reducing risk in sex work. Condom use between sex workers and clients rose to over 90% in both countries and the percentage of men visiting sex workers in the last year dropped from 20% to 10%. In the real world, we can't see what would have happened without these changes, but in a model such as AEM, we can go back and leave risk behaviors as they were in the early 1990s. When this was done for Cambodia, we found that the Cambodian epidemic would have been substantially worse (see Figure 1.4A). HIV prevention efforts in Cambodia averted over a million infections. Other more detailed comparisons of the impact of prevention alternatives can also be explored in AEM.

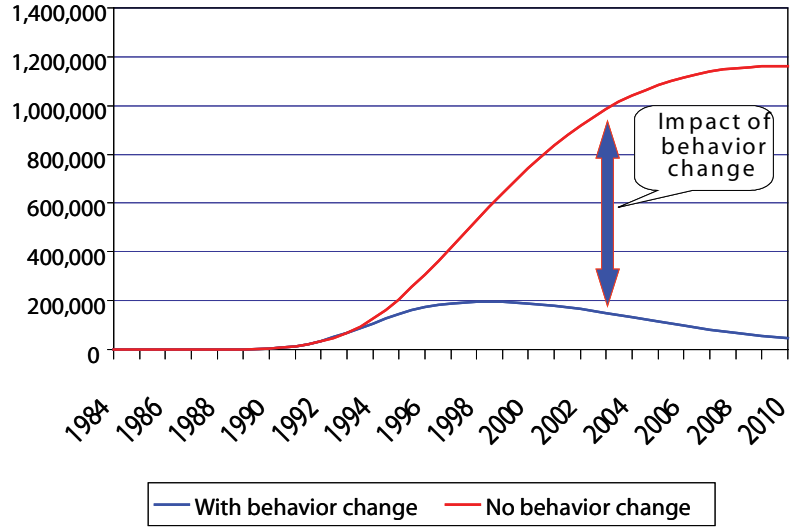


Figure 1.5A: Increases in condom use and reductions in the number of clients in Cambodia produced a major change in the course of the epidemic, as seen when comparing AEM runs with and without these behavioral changes.

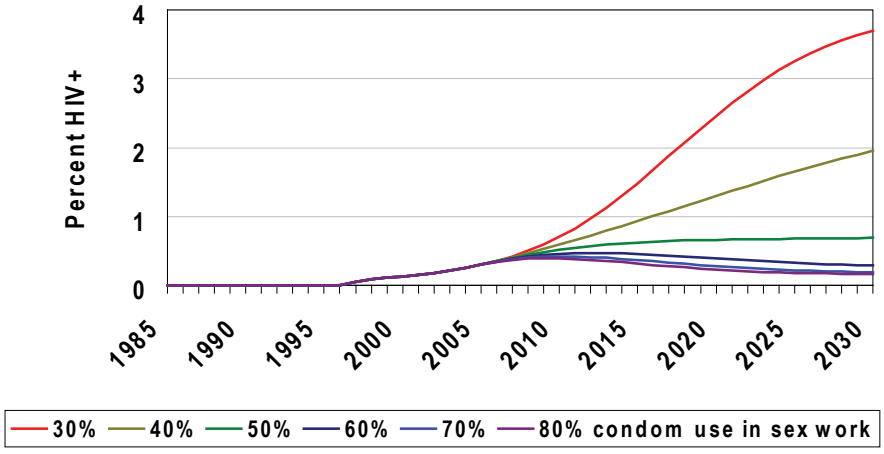


Figure 1.6A: Impact on adult HIV prevalence in a higher risk Asian country of increasing condom use between sex workers and clients over a 5 year period from 30% to the level specified.

What level of behavior change do we need to reverse an epidemic?

One of the questions often faced by the policymakers is: what minimum targets do I need to set for behavior change to have an impact on the epidemic? For example, how high does condom use have to get between sex workers and clients to turn the epidemic around? Because the AEM is a behavioral

model, one can change the behavioral inputs to try various levels of increasing condom use beginning in a particular year and see the impact this has on the future spread of HIV. Figure 1.6A shows how HIV prevalence changes in response to an increase in condom use over a 5-year period starting in 2005. If condom use by 2010 grows to 50% the epidemic will stabilize below 1%, if condom use rises to 60% or more the epidemic will begin to decline. Because an AEM model for a location is tuned to local conditions, it can provide locally relevant information on behavioral targets and objectives to be achieved to reverse the growth of the epidemic.

How big are the impacts for which we must plan?

In low prevalence settings, where the epidemic is growing more gradually, it is often unclear how serious the epidemic will become. Policymakers get one group of people arguing that their country will become the next "Sub-Saharan Africa", while another says that local levels of risk are too low to sustain an epidemic. As usual, the truth is somewhere in-between. Without a numerical assessment of the epidemic and its likely impacts, it is difficult for policymakers to prioritize HIV over other competing needs and for planners to allocate the resources to slow the epidemic and prepare for its impacts. However, with a locally tuned AEM model, based on several years of actual observed HIV prevalence growth in the country, more realistic assessments can be made of the likely rate of epidemic growth, and the probable future severity of the epidemic. Such projections can form an essential input both for advocacy to strengthen and focus responses appropriately and for planning for impact mitigation in a realistic way.

NOTE 1B – THE IMPLEMENTATION OF ANTIRETROVIRAL THERAPY IN THE AEM

With the rapid expansion of availability of drugs to treat HIV, countries are interested in seeing the impact of antiretroviral therapy (ART) on their HIV epidemics. The AEM version for the Commission projections addresses this need by including adult antiretroviral therapy in the AEM workbook.

The assumptions for antiretroviral care in AEM

The antiretroviral component in AEM workbook is patterned closely after the way antiretroviral therapy is dealt with in the Spectrum program produced by the Futures Institute with some additions to deal with secondary infections produced by those on ART. This allows for both first-line and second-line combination therapies..

The user begins by providing a progression from new HIV infection to need for antiretroviral treatment. This information is entered on the “5 Epidemic” page of the AEM workbook. In addition, on this page the user specifies a distribution from need for antiretroviral therapy to death, which is applied if the person receives no antiretroviral therapy. The default progression pattern from infection to need for treatment supplied in AEM has an average of 8 years from time of infection until need for treatment, and is based on a Weibull distribution. The progression from need for treatment to death has a median of 3 years, that is in the absence of ART, those in need will die on an average 3 years after developing a need. The same progression also applies to those who fail on first line therapy. That is, once they fail on first-line therapy they progress with a median time from failure of first-line therapy to death of 3 years, assuming they cannot go on to second line therapy.

Once on first-line line therapy, the assumption is that 15% of individuals will fail first-line therapy during the first year, and that 5% per year will fail in subsequent years. On failing first-line antiretroviral therapy, a certain percentage, specified by the user, is assumed to go on to second line therapy. Those who do not continue on to second line therapy, will then progress to death with a three-year median (the same progression used for those who receive no treatment). For those who continue on to second line therapy, it is assumed that 15% fail on therapy and die in the first year, while 5% fail and die in subsequent years. The percentage continued on to second line therapy is specified by the user on the “8 Results Summary with ART” page of the AEM workbook. The user can also change the 15% and 5% values on this page by changing the fraction staying on therapy in the first year and subsequent years from 0.85 and 0.95 respectively.

Calculating first-line ART need in the AEM workbook

The actual calculation of ART need and its impact on the epidemic is done on the page labeled "Spectrum ART Calcs". The calculation starts from the user-specified percent of all in need receiving ART in each year, which the user enters on the "8 Results Summary with ART” page.

The calculation of the number in need of ART begins by calculating the number of adults newly eligible for ART from the number of new infections. This number is automatically generated by AEM when you run a projection. The progression from time of infection to need for ART is applied to the number of new infections for males and females separately and used to generate the number of adult males and adult females newly eligible for ART treatment.

Total need for ART in each year is then calculated as the number of newly eligible males or females for that year added to the number surviving on ART from the preceding year and the number in need surviving from the preceding year who have not gone on ART. The number actually receiving ART in that year is then the product of the percentage in need receiving ART and the number in need.

Number needing ART = newly eligible for ART

+ surviving on ART from preceding year

+ those in need surviving without ART from preceding year

Number receiving ART = % receiving ART x Number needing ART

The number in need who survive without ART from the preceding year is obtained by calculating the survival if no one had received ART and then subtracting off the deaths associated with those who actually do go on antiretroviral therapy. This leaves the number of people who survive without ART.

This information is then used to calculate the number of individuals newly receiving first-line ART in that year as the difference between the number receiving first-line ART in that year and the number surviving on first-line ART from the preceding year.

New entrants to first-line ART =

Number receiving ART

– number surviving on first-line ART from preceding year

Second-line therapy

Spectrum also allows for a second-line therapy, which the user specifies by entering values into the "Percent in need of second-line receiving second-line" fields on the "8 Results Summary with ART" page.

Survival on 2nd line therapy uses the same values as for first line therapy (85% surviving on second line in the first year and 95% in subsequent years). However, when one fails second line therapy, one dies, whereas when one fails first line, the clock is reset and the person survives an average of 3 years if they do not receive second line therapy.

Both the number of men and women newly receiving first line therapy in a given year and the number actually on first or second line ART therapy are provided on the "8 Results Summary with ART" page. If one desires to know the relative number on first and second line therapies, this information is available on the "Spectrum ART Calcs" page.

Effects of antiretroviral therapy on prevalence and incidence

Direct Effects

One of the most important effects of antiretroviral therapy is that it keeps people alive longer. This has the net result of driving up prevalence, i.e. increasing the number of current infections in the population. The magnitude of this effect is easily calculated by comparing survival in the complete absence of ART with the survival in the presence of ART.

People on ART live longer and this increases the number of people living with HIV in the population.

In the AEM workbook, these increases in prevalence due to prolonged survival are referred to as "direct" effects of ART.

Indirect effects

There are also secondary effects of ART on HIV prevalence and incidence. More people remain alive on ART and many of those will be sexually active or will be injecting drugs and sharing needles. As a result, they will generate additional infections. However, there is evidence that they are not as infectious as their counterparts who are not on ART. Because their viral load is substantially lower on ART, they are much less likely to transmit HIV to their partners. The magnitude of this effect is set on the line "Relative infectivity on ART". By default this is set to 0.25, that is, people on ART are one-quarter as infectious as those not on ART.

To calculate the number of new infections produced by ART, AEM distributes the additional survival on ART into the various at-risk populations in AEM according to the recent deaths associated with each group. This makes the assumption that all individuals have equal access to ART. For each of the at-risk categories, the average number of infections per person in the AEM baseline run is calculated and then for each additional person surviving new infections are calculated as:

Additional new infections =

Infections per person in that at-risk group x

Number of additional people surviving on ART x

Reduction in infectivity (0.25 by default).

These new infections will also increase prevalence in the population at large. This effect is calculated by assuming that those infected by other on ART have the same access to first line therapy as others. The effect of their first line therapy is then included, as is the survival of those infected secondarily who do not yet have need of any antiretroviral therapy.

2
Vulnerability

CHAPTER SUMMARY

This chapter, divided into three sections, looks at the various strategies required to mitigate the impact of the AIDS epidemic on young people, women and children in Asia.

Globally over half of all new HIV infections occur among people aged between 10 and 24 years and the 600 million young people in the Asian region are also obviously at great risk. However, as the first section of this chapter argues, to come up with an effective response to HIV, it is important not to approach young people as an undifferentiated lot and instead divide them according to the kind of risk behaviour they engage in, or are likely to be involved in.

The Commission on AIDS in Asia, in its final report, has pointed out for example that over 95 percent of all HIV infections among young people occur among most-at-risk adolescents, like young people in sex work, young injecting drug users and those young men who have sex with men. Thus intervention packages targeting such most-at-risk youth are also the most cost effective in averting new infections.

In line with this approach this section conceptually divide young people into three types:

1. The first are young people who are already engaging in one or more of the high-risk behaviours outlined above;
2. The second type consists of those who are more likely to start engaging in the high-risk behaviours;
3. The third are young people who are at low or no risk of infection, living in stable families and working or going to school.

The authors argue that specific HIV programming efforts, both in terms of prevention, as well as care and support, should be focused on the first type and aim for a very high degree of coverage (80%).

A basic strategy they suggest to deal with the needs of most-at-risk adolescents and young people includes the decriminalising of high-risk behaviour. This should also apply for young people under 18 who are unable to change behaviour. A strict law enforcement approach, it is pointed out, would be counter-productive and only drive those involved underground, putting them out of reach of healthcare providers and making social protection very difficult.

The second section of the chapter draws attention to the impact of the AIDS epidemic on married women in Asia. While the epidemic is driven by relatively small segments of society involved in high-risk behaviours, once the epidemic has moved into an expanding phase, wives or regular partners of men who frequent sex workers begin to bear a greater burden of the epidemic.

For example, in Thailand, approximately one-third of new infections in 2005 were among married women. Thus, while sex workers remain among the most-at-risk women, and should be a key focus for HIV prevention interventions, male clients of sex workers can act as bridges of HIV transmission to women and children. Commercial sex work and multiple, concurrent sexual relationships among men thus constitute increasingly important mechanisms for HIV transmission in Asia.

This second section deals with the response required to directly engage men and boys as participants and agents to change traditional mores, and rigid attitudes and behaviours that perpetuate gender inequalities.

The recommendations focus on a sub-set of gender-related interventions in three domains:

- Those that directly seek to reduce the vulnerability of married women whose husbands are clients of sex workers;
- Those that seek to reduce the vulnerability of married women overall; and
- Those that seek to mitigate the impact of HIV on women living with and/or affected by the virus.

To further facilitate the urgent implementation of the recommendations, the focus is on existing policy and programme solutions, rather than innovative approaches or new ideas that have not yet been introduced in Asia.

The authors point out that issues involving gender and HIV/AIDS are complex and far-reaching and meaningful progress in addressing gender entails developing policies and interventions that are also complex and multi-faceted, often leading to compound interventions that address more than one facet of the problem at a time. The section gives several examples of ongoing interventions in different parts of Asia that attempt to deal with the complexities of the gender dimension of AIDS.

The summary recommendations of the authors point out the need for:

- Reducing risks for married women.
- Promoting marital fidelity and changing prevailing gender norms.
- Reducing vulnerability in general for all women.

The last section of this chapter reviews social policy options to ensure greater protection of orphans and vulnerable children, especially children affected by HIV in Asia. This section, suggests a framework and is not meant for operational details on the ground, that need to be worked out on a case by case basis.

Policy considerations, discussed by the authors, include dealing with the severe stigma and discrimination that children orphaned by AIDS are subjected to and the special protection they need, keeping in mind their dual vulnerabilities as orphans as well as due to taboos associated with behaviors spreading AIDS

Those formulating policy, the section says, need to factor in the relatively low prevalence of children affected by HIV in Asia as well as the competing demand for social protection from other vulnerable children not associated with HIV, who are found in much larger numbers in the region.

While the long-term benefits of assisting orphans and vulnerable children in general is pointed out the authors also make out a case for prioritization. They suggest a focus on orphans living in poverty, though not as a stand-alone intervention but one that is embedded in the local or national social protection mechanism. The main policy recommendation emphasises the use of cash transfers as the most appropriate scheme that can cater to, or is responsive to, the needs of the beneficiaries.

2.1 HIV PREVENTION NEEDS OF YOUTH IN ASIA[1] *Jan W de Lind van Wijngaarden*

Young people between 10- and 24-years-old, make up anywhere between 30 to 50% of the population in Asian countries, or a total of around 600 million people in the Asian region. Therefore it makes sense to delineate between different 'types' of young people, taking their risk behaviour and the likelihood of engaging in risk behaviour (vulnerability) into consideration. Risk and vulnerability profiles should correspond with different prevention strategies and policy actions.

2.1.1 Three 'types' of young people

It is proposed to conceptually divide young people (aged between 10 and 24-years-old) into three 'types':

1. The first is young people who are already engaging in one or more of the high-risk behaviours outlined above – i.e. engaging in commercial sex, injecting drug use or male-to-male sex. A further division within this group is made between:
   a. under 18s; and
   b. those who are technically adults – i.e. between 18 and 24.
2. The second type consists of those who are more likely to start engaging in the high-risk behaviours listed above, due to several contextual factors discussed below – both those who are underage and those over the age of consent.
3. The third is young people who are at low or no risk of HIV, living in stable families and working or going to school – a large majority in most countries – again, both underage and 'adult' youth are included here.

Most specific HIV-programming efforts, both in terms of prevention, as well as care and support, should be focused on the first type – young people already engaging in high-risk behaviour – as this group is most likely to become infected with HIV and to pass the virus on to others. This group also has the highest need for care and support services also. From an epidemiological perspective, a prevention focus on the third (low-risk) group is not necessary, especially if resources are scarce, as few infections can be prevented in this group. Also, funding for HIV prevention at country level is not usually based on epidemiological considerations only; other issues often play a role.

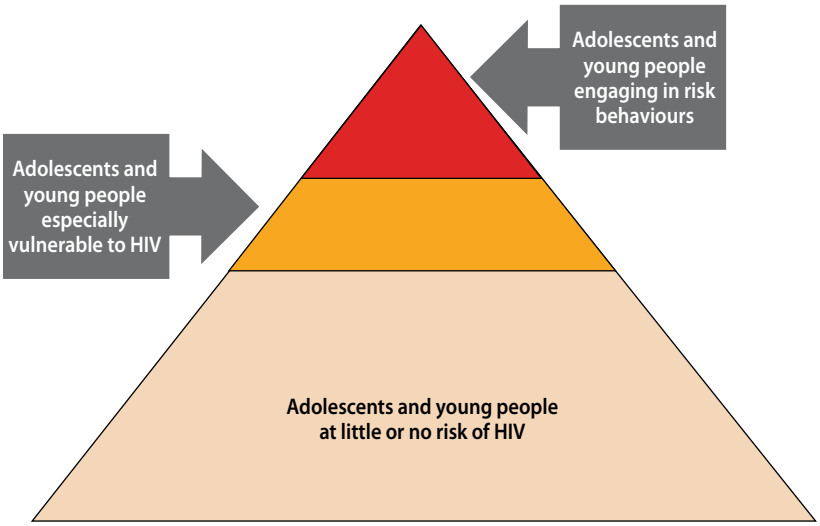


Figure 2.1: The pyramid of youth vulnerability and risk

[1] Based on a paper 'Responding to HIV prevention needs of adolescents and young people in Asia: towards (cost-) effective policies and programmes' prepared for the Commission on AIDS in Asia by Jan W de Lind van Wijngaarden. The paper was supported by UNICEF (Regional Office for South Asia and Regional Office for East Asia and the Pacific), UNESCO (Asia & Pacific Regional Bureau for Education) and UNFPA (Country Technical Service Team for East and South-East Asia and Country Technical Services Team for South and West Asia)

The 'pyramid of risk and vulnerability' above shows that HIV disproportionately affects a minority of young people. Responses should be carefully tailored to age and gender; the needs of a 10-year-old are different from those of a 24-year-old, and the needs of young women are different from those of young men.

2.1.2 Most-at-risk adolescents and young people

2.1.2.1 Decriminalizing high-risk behaviour

The age of consent[2] for sex differs between countries – for example, it is 13 in Japan, 14 in China, 15 in Thailand and Pakistan (in Pakistan sex is legal within wedlock only), 16 in India, Malaysia, Nepal and Cambodia, 17 in Indonesia, and 18 in Vietnam and the Philippines.[3] Some countries have different ages of consent for boys and girls, although most have an age of consent of 18 for marriage; Thailand specifies a higher age of consent for sex in the context of sex work, which is 18. These rules, while aimed at the prevention of sexual exploitation of children and therefore largely beneficial, may also raise barriers for sexually active young people to access health services; healthcare providers may worry whether they, by providing services to adolescents will be regarded as endorsing the involvement of under-age young people in sex work, male-to-male sex or drug use. This means there can be a conflict between child rights on the one hand, and the right of adolescents to access essential healthcare on the other.

Alongside the age of consent issue, the behaviours of most-at-risk adolescents are usually illegal for both adults and children (sex work and injecting drug use in most countries, male-to-male sex in many). All programmatic approaches for most-at-risk adolescents and young people outlined below would be easier to implement if legal frameworks did not criminalise behaviours targeted for change, or if existing laws and regulations were temporarily suspended. Such action over considerable periods of time has contributed to successful responses to reduce HIV transmission among sex workers and their clients in Thailand, Cambodia and parts of India.

For under 18s engaging in high-risk behaviour, prevention and healthcare can be ethically challenging. Pragmatism is key in acknowledging the difference between an 'ideal world' where there is underage sex work, drug use or male-to-male sex does not take place, and the reality. Whereas policywise and legally the existence of under-age sex (work) and drug use is banned and deemed undesirable, in practice, these behaviours occur in all countries. The negative health and other consequences for adolescents and young people engaging in these behaviours should be minimised, especially where they cannot be persuaded to stop the behaviour that puts them at risk, and even if there is no viable alternative that can be offered to them.

A strict law enforcement approach, arresting those involved in risk behaviours, would drive those involved underground, leading to healthcare providers being unable to reach them and social protection very difficult. This would make adolescents and young people more vulnerable to exploitation, crime and poorer health. The key to success is to work *with* young people in situations of acute risk to find solutions, as well as with any gatekeepers who could potentially provide a route for outreach services, at the same time as promoting policies and programmes that prevent new generations of young people from entering into such risky situations.

[3] While the phrase 'age of consent' typically does not appear in legal statutes, when used with reference to criminal law, the age of consent is the minimum age at which a person is considered to be capable of legally giving informed consent to any contract or behaviour regulated by law with another person. This article refers specifically to those laws regulating sexual acts. This should not be confused with the age of majority, age of criminal responsibility, or the marriageable age (Source: Wikipedia).

[4] See http://upload.wikimedia.org/wikipedia/commons/e/ef/Age_of_Consent.png

2.1.2.2 Young people aged under 18

Key principles for responses for most-at-risk adolescents and young people aged under 18:

- All children have the right to be free from sexual or other forms of exploitation; they also have the right to good health (which is compromised by using drugs or exposure to STIs and HIV). As a matter of principle, therefore, children should not be engaged in risk behaviours for HIV. Policy frameworks for HIV prevention among young people should make a distinction among those who are legally 'children' (i.e. under 18) and are entitled to social service assistance and 'rehabilitation', and those who are legally 'adults', and entitled to access to prevention and care services.
- At the field level, however, a degree of pragmatism is necessary for prevention and care of under 18s. Those who are engaged in male-to-male sex, or sex work should have access to age- and gender-appropriate STI care, VCT, prevention information, and condoms and lubricants *if they cannot be persuaded or assisted to stop or delay these behaviours*. For drug users, principles of harm reduction apply, similar to those for adults.
- Any response – whether it be within policy or programming – should include consultation of the children involved and their caregivers; any intervention should have the best interests of the child in mind.
- There is a need for the development and implementation of adolescent-friendly and age-specific policies that ensure rights to better health and social protection, and that childrens' basic rights are not impeding their access to such services.

2.1.2.3 Young people aged over 18

For young people aged over 18, similar programmes to those for adults should be considered – however, young people may have additional or different needs, and it is important that these are acknowledged and integrated in programming based on operations research. When designing operational research, it is important to ensure that the needs of young people are assessed and compared to the needs of older people at high risk.

Key principles for responses for most-at-risk young people over 18 include that:

- Interventions should be developed with strong involvement of the target audience, ensuring that they are age- and gender-specific. Tailor-made responses for young men who have sex with men, or young injecting drug users, or young sex workers may end up being considerably different from those for adults.
- Interventions should be based on evidence. Community-led baseline assessments can help assure this. The needs of an 18-year-old sex worker who has just started working may be very different to those of a middle-aged sex worker who is close to retirement; an 18-year-old MSM who starts becoming sexually active is more at risk than a more experienced and self-confident older MSM.
- Interventions should be broad, covering issues beyond STI and HIV transmission, and should include protection of human rights, and tackling stigma and discrimination. Interventions should also include income generating programmes and access to education and skills to support young people in finding employment and reducing poverty. This means the involvement of a range of sectors: health, social welfare, education, youth and justice, and interior sectors are key.

- Interventions should occur at different levels: policy level, health service level, individual outreach level, and should include social support, condom promotion, STI care and VCT, at the very least.

2.1.2.4 Young men who have sex with men[4]

In many Asian countries, there is a marked MSM-entertainment infrastructure in large cities (Thailand, Indonesia, Malaysia, parts of China and southern Viet Nam), where men who have sex with men find partners and where sexual transmission originates. This infrastructure is insufficiently covered by traditional intervention programmes based on peer education, promotion of sexual health services, and outreach that includes promotion of clinical services (VCT, STI and ARV); in addition, these intervention programmes are not age-specific.

Reasons for this poor coverage include the large number of establishments to be reached, the lack of active community-based organisations, and the presence of MSM-negative official policies, that impede the implementation of crucial interventions and activities[5]. Young people, who are often not allowed to frequent these premises until they are 18 (or in Thailand, 21), often depend on non-formal entertainment spaces – including parks, bus stops and (especially in cities) the internet, to find friends and sex partners; this means their awareness of HIV and access to condoms and lubricants is often lower than that of adults.

A meta-analysis[6] examining the efficacy of HIV-prevention interventions designed to reduce sexual risk behaviour of men who have sex with men (adult) found a significant decrease in unprotected anal intercourse. Interventions that were successful in reducing risky sexual behaviour were based on theoretical models, including interpersonal skills training, and incorporated several delivery methods, delivered over multiple sessions spanning a minimum of three weeks. Behavioural interventions provide an efficacious means of HIV prevention for men who have sex with men. The authors conclude that to the extent that proven HIV prevention interventions for men who have sex with men can be successfully replicated in community settings and adapted and tailored to different situations, the effectiveness of current HIV prevention efforts can be increased.

For young men who have sex with men, programmatic responses should focus on:

- Reaching young men who have sex with men before they become sexually active. A study in Thailand showed that men who have sex with men become sexually active at an average age of 14.9-years-old, earlier than their heterosexual peers, and that they face higher levels of sexual abuse than their peers.[7] Young men who have sex with men should have access to information and education through age-specific IEC materials, either in print or on the internet, and where possible the link between male homosexuality and HIV risk should be integrated into sex education and reproductive health programmes for young people in general, through schools, health facilities or via youth clubs and unions.

[4] For overview of national level policy responses see Supplementary Note 2 A

[5] Lind van Wijngaarden J de, Brown T, Girault P, Van Griensven F - The epidemiology of HIV infection and associated risk behaviors among men who have sex with men in 16 Asian-Pacific countries: Implications for policy and programming. Paper prepared for UNAIDS, 2006, to be published

[6] Herbst et al., in: WHO/UNICEF/UNFPA/UNAIDS/LSHTM (2006), *Preventing HIV/AIDS in Young People: the first systematic review of what works to prevent HIV infection among young people in developing countries.* WHO Technical Report Series No. 938. WHO, Geneva, 2006

[7] Griensven F van, Kilmarx PH, Jeeyapant S, *et al*., (April 2004) The prevalence of bisexual and homosexual orientation and related health risks among adolescents in Northern Thailand. *Archives of Sexual Behavior*, 137–147, Vol.33, No.2..

- Avoiding exploitation and abuse. Exploitation of adolescent boys by adults – either through the internet or by other means – should be acknowledged and dealt with. Transgendered youths often face sexual abuse at a very young age, and stigma and discrimination for this group is often stronger than for those whose sexual status is not easily identifiable. Improving self-esteem and general life skills is key in reducing abuse.
- Using innovative channels to provide sexual health information and education – including reducing fear and myths about homosexuality – since this information is usually not provided as part of mainstream adolescent health education in schools. Interventions that use the internet may be able to reach out to men who have sex with men effectively by providing peer outreach in chat rooms, and information and counselling through message boards; telephone hotlines may also be utilised, however, these types of interventions have never been thoroughly evaluated for effectiveness in Asian contexts.
- Establishing self-help groups. At an age where group conformity is often more important than in later life, adolescent boys who are discovering that they prefer men to women often face complex issues including a lack of self-confidence and even self-hatred; fear of disclosure, in the form of negative repercussions of their sexuality from parents and their community; and a strong sense of loneliness. Self-help groups, linking adolescent boys with other boys with similar issues, either through the internet or through existing organisations, may be effective in resolving some of these mental health issues which are known to reduce the likelihood of adopting safer sex behaviours.
- Developing and adapting IEC and messages about HIV in relation to anal sex and safer sex. These may need to be adapted to include language popular with teenagers – sometimes men who have sex with men also use different terminology in a 'sub-cultural language'; the 'level' of information provided may also need to be lowered for young men who have sex with men, as they have less basic knowledge and less experience than their older peers.
- Reducing harm, including violence, rape, HIV and other STIs, for young men who have sex with men; this means that even if under 18, young men who have sex with men should not be refused access to prevention healthcare services.

2.1.2.5 Young sex workers

UNAIDS stresses the importance of establishing clear policy frameworks for sex work, which makes setting up programmatic responses much easier. Within such frameworks, a focus on young sex workers should be included, since in many countries a large majority of sex workers are young. Policymakers should take into account the complexity of sex work systems and address the various needs of the diverse groups of sex workers within them.

First and foremost, a policy framework must establish its legal stance on sex work, be it prohibition, regulation or decriminalization. It is also important that a stance be taken that explicitly supports international conventions governing exploitation of children, and that the age at which sex work may occur is determined. Many (male and female) sex workers start working before the age of 18 – either because of individual circumstances or because of trafficking and exploitation. This section deals with young sex workers up to 24 years of age.

For young sex workers, programmatic elements should focus on:

- Avoiding sexual exploitation and promoting child rights for those under 18. Children should not have to earn a living in the sex industry. They deserve an education and a safe and healthy lifestyle. Young people in sex work (not only those under 18) should be screened to see to what extent they control their own lives, including the decision to enter the sex trade, their say in the selection of their customers, the type of services that they provide and the income they generate.
- Providing suitable alternative options for sex workers who want to stop. If sex workers are under 18, in principle the law enforcement and social welfare sectors, responsible for preventing sexual exploitation of minors, should take over; sex workers over 18 should be given the option of continuing or voluntarily giving up their trade, since relapse is common among those who are forced to stop. So-called 'rehabilitation' of young people that have been in sex work should focus on providing appropriate education and vocational training, where the child is based in his or her family or community, or (as a last resort) in relevant institutions catering to the needs of the youth. They should have access to counselling and social support, healthcare, and all efforts should be made to avoid stigma and discrimination by upholding standards of confidentiality.
- Reducing harm, including violence, rape, HIV and other STIs, for young people who do not want to stop sex work. Even if a sex worker is under 18, and unable to quit the profession for various reasons, he or she should not be refused access to prevention and healthcare services.
- Reducing demand for underage sex workers. Reducing demand for underage sex workers, in various ways, may be more effective than focusing on reducing the number of young sex workers, especially in countries where trafficking of young women and girls is common, or where entry into the sex trade by 'dutiful daughters' for poor families is implicitly appreciated or encouraged.
- Establishing self-help groups for young sex workers. This is appropriate if young sex workers who are part of groups that consist of older sex workers feel discouraged to speak out.
- Adapting IEC and messages for behaviour change. These may need to be adapted to include language popular with teenagers; also the 'level' of information provided may need to be lowered for young sex workers, as they have less basic knowledge and less experience than their older peers.

2.1.2.6 Young injecting drug users

According to the United Nations Office of Drugs and Crime (UNODC), 'compelling evidence' suggests that addiction should be seen as a chronic relapsing medical condition, and should not be considered a crime. Many of those who develop addiction disorders suffer multiple relapses following treatments and are thought to retain a continuing vulnerability to relapse for years, or perhaps a lifetime. In considering addiction a chronic condition, it is no longer surprising that incarcerations or brief stabilisations – the most common response to the problem of injecting drug use in most Asian countries – are not effective, with relapse rates of over 70%.

Based on these findings, policies and programmes should first of all accept drug addiction as a social and health problem, and guide health officials in tackling the problem of drug abuse by combinations of continuing outpatient therapy, medications and monitoring, with the goal of retaining drug abusers in that treatment and monitoring regimen to maximise and maintain the full benefits of treatment.

In other words, the issue of HIV prevention through the consumption of injection drugs should be tackled by health authorities and not by law enforcement officials, who still have a role to play in tackling the production and supply of illegal drugs.[8]

For young people, programmatic elements should be similar to those provided for adults (appropriate to age), and include:

- Preventing drug abuse among those who have not started. These programmes could be delivered through schools and mass media. More 'targetted' prevention programmes should be focused on children in families where one or both of the parents is a drug user.
- Reaching out to young drug users through their community networks. Drug users who don't participate in conventional service systems, especially very young drug users can be reached in this way (in Asia 'conventional services' for drug users are rare). It is likely that peers, who are often active in community outreach programmes, are likely to be trusted by young drug users, especially if they are slightly older 'brothers' or 'sisters'.
- Provision of substitution treatment (with methadone or other substitution drugs). Most young drug users cannot stop using without some kind of substitution treatment. Treatment with substitution drugs prevents HIV transmission because it helps users reduce drug- and sex-related risk behaviours; it often brings more stability, which may enable young drug addicts to start rebuilding their lives, go back to school or find employment.
- Provide access to sterile syringes for those who are not (yet) ready to stop. This will reduce sharing of needles and syringes between young drug users who may have no access to new ones (drug users in general, and young drug users in particular, may be refused needles at pharmacies). Providing access to sterile syringes will also enable service providers to establish contacts with young drug users, which may lead them to other health services, including treatment, voluntary counselling and testing and rehabilitation services.
- Integrate the above-mentioned elements into services provided within the Criminal Justice System, since many young drug users are in prison or government youth institutions because of their drug use; in such settings disproportionately high rates of HIV infection, STIs and hepatitis have been found.
- Include strategies to prevent sexual transmission in the drug use reduction programme, as high-risk drug use and unsafe sexual behaviours are often linked (see Bangkok example below).
- Promotion of age- and gender-specific counselling and testing services for drug users.
- Establishing access to antiretrovirals for young drug users living with HIV (considering the high HIV prevalence among drug users, there will be considerable numbers).

2.1.3 Especially vulnerable adolescents and young people

2.1.3.1 Understanding the context

Adolescents and young people in this category are considered more likely to start engaging in one or more of the three main epidemic-driving behaviours than the broader young population. This can be due to a number of contextual factors listed below, which differ in importance across countries:

[8] UNODC (2003), *Investing in drug abuse treatment: a discussion paper for policymakers.* Vienna.

a. Societal change, including changing norms and values about sex among young people, especially in cities (including the impact of globalisation and the increasing importance of money as a marker of status, rather than other individual characteristics or culturally determined, gender-linked 'virtues' like virginity).

b. Lack of education opportunities for young people.

c. Poverty, lack of employment opportunities and increasing disparities between rich and poor.

d. The fact that employment for children is often illegal may lead to 'underground' employment for young people, for example, as domestic servants, which can hamper their access to healthcare and other services, and may facilitate exploitation, also sexually, by their employers.[9]

e. Lack of entertainment opportunities, which can lead to boredom and facilitate addiction among young people (drugs, alcohol).

f. Disparity between genders or ethnic groups.

g. Lack of access to prevention information and sexual health services.

h. Mobility – migration (i.e. being away from the family and community).

i. Ethnic or political conflict, being a refugee, or being in a post-conflict situation.

Young people in this category are often living outside parental or care-giver supervision, for example, those who live on the streets, migrants (for study or work purposes), orphans, or in institutions; this group also includes young people who are living in marginalised families – children of sex workers, drug users, poverty stricken families, etc. Responding to the prevention needs of these young people needs to move beyond awareness raising and provision of basic HIV prevention messages to include access to shelter, nutrition and general health improvement, strengthening skills for income generation, and general life skills to broaden opportunities for study and work. Interventions for this group therefore need to be wide-ranging and integrate HIV prevention and healthcare seeking behaviour into interventions that respond to other (usually more acute) needs.

2.1.3.2 Marriage

According to UNFPA, most countries have declared 18 as the minimum legal age of marriage. In Vietnam, 53% of girls are married at the age of 22; 33% are married before the age of 20. While the practice of child marriage has decreased globally over the last 30 years, it remains common in rural areas and among the poorest of the poor. Impoverished parents often believe that child marriage will protect their daughters. In fact, it results in lost development opportunities, limited life options and often poor health. Child marriage is a health issue as well as a human rights violation. Because it takes place almost exclusively within the context of poverty and gender inequality, it also has social, cultural and economic dimensions.

Married adolescents have been neglected from the global adolescent reproductive health and HIV/AIDS agenda because of the incorrect assumption that their married status ensures them a safe passage to adulthood and is protective of HIV. In fact, young married girls and women must be considered vulnerable to HIV due to the possible risk behaviours of their husbands. Policy reform and awareness campaigns to prevent child marriage are therefore also sensible HIV vulnerability prevention strategies.

[9] UNICEF estimates that there are up to 5 million underage (under 14) domestic workers in South Asia alone.

2.1.3.3 Education

Education and being at school are seen as important protective factors against HIV infection for young people, especially girls. According to UNESCO, in most Asian countries, net enrolment in primary schools is high (about 86% in south and west Asia and 94% in east Asia); however, at the age of adolescence many people drop out and do not enroll in secondary schools. In Cambodia, for instance, only 22% of girls and 30% of boys were enrolled in secondary schools in 2004; for India these percentages were 47% and 59%, and for Indonesia 57% for both girls and boys.[10]

The promotion of the principle of 'Education for All', ensuring that schools are inclusive, actively counteract drop-out, and work to enrol young people who are out of school is a sensible vulnerability-reducing strategy, especially for adolescents.

Additional programming principles for reducing vulnerability of adolescents and young people include:

1. Promoting open discussion and analysis of societal change in schools and the media helps young people to make sense of the changes happening around them, and ensures that the contents and messages of learning and teaching 'connect' with the lives of modern young people.
2. Promoting enrolment in the education system and creating linkages between education institutions and employers, reducing the likelihood of young unemployment and ensuring the curriculum is relevant to the future work place.
3. Combating poverty by creating social, micro-credit, employment and other types of support programmes.
4. Promoting sports and other healthy forms of entertainment for young people, enabling them to make a choice to avoid more risky pastimes.
5. Promoting social norms that promote equality between the genders and a healthy sexual lifestyle. This includes de-stigmatising sex workers and men who have sex with men, and discussing the pitfalls of early marriage.
6. Strengthening the social support networks of young people who are without parental supervision (especially orphans, young people living on the street and young migrants), preferably through community-led initiatives rather than government institutions.
7. Providing a legal framework that does not criminalise people engaging in marginalised risk behaviours (drug use, male-to-male sex and sex work).

2.1.3.4 Programmatic responses

Programmatic responses in this category aim to reduce vulnerability to HIV/AIDS by focusing on strengthening skills to resist peer pressure, enhance self-esteem, and improve communication and negotiation skills. Programmes can also provide shelter and nutritional support (e.g. for street children), education (including vocational training) and other types of support aimed at reducing poverty or dependence.

A key strategy more directly related to HIV vulnerability prevention involves making health and counselling services more accessible to vulnerable young people. The above-mentioned WHO paper also reviews evidence for interventions to increase young people's use of health services in

[10] See http://unesdoc.unesco.org/images/0014/001489/148975E.pdf

developing countries. The studies reviewed (twelve in Africa and three in Asia – Mongolia, China and Bangladesh) provided evidence of increased use of health services by young people for those types of interventions that included training for service providers, making improvements to clinic facilities and implementing linking activities in the community, with or without the involvement of other sectors.[11] It should be noted that strong healthcare services – especially STI and VCT care – are an essential component of responses for 'type one' young people (engaging in risk behaviours) also.

The WHO concluded that interventions through health services are essential and effective, if implementation is based on an evidence-based package of services to prevent the spread of HIV and if operating under 'youth friendly' principles, in collaboration with the community in which the health service is located. Evidence is sufficient to support widespread implementation of interventions to increase young people's access to and use of health services.

Box 2.1 Family Planning Association of Nepal

The Family Planning Association of Nepal (FPAN) implemented a health service intervention for adolescents, with technical support from UNFPA. Three different settings of service providers comprising NGOs, the government and private sector were selected in each district for creating a youth-friendly services model. Young people's participation and consultation at all levels was a key component of the project. Nearly 14,000 young people aged between 10 and 24 were reached by services in two districts over a 13-month period. Baseline and endline surveys were conducted, with the following results:

Selected Indicators[12]	**Baseline %**	**Endline %**
Knowledge of STIs	65	93
Knowledge of HIV/AIDS	74	99.7
Knowledge of transmission of HIV/AIDS	31	72
Knowledge of existing youth-friendly services (YFS) in the districts	NA	97
Sought services offered by YFS	NA	94
Condom use among those who were having sex	27	77

Key lessons learned included the importance of involvement of a wide range of stakeholders, and the importance to embed 'serious' communication in entertainment and sports activities for young people, to sustain their interest. Also, the need for comprehensiveness was stressed.

The WHO report also includes a chapter on 'community interventions', which looked at four types of interventions: firstly, those targetting young people, delivered through existing organisations or centres providing for young people; secondly, programmes targetting young people but not affiliated with existing organisations or centres; thirdly, interventions that were aimed at the community as a whole, not specifically young people, delivered through 'traditional kinship networks' and lastly, interventions targetting the community as a whole and delivered through events. The review included 22 evaluations; programmes from Indonesia, Nepal, India, Thailand and Sri Lanka were included.

[11] WHO/UNICEF/UNFPA/UNAIDS/LSHTM (2006), *Preventing HIV/AIDS in Young People: the first systematic review of what works to prevent HIV infection among young people in developing countries.* WHO Technical Report Series No. 938. WHO, Geneva, 2006

[12] Family Planning Association of Nepal and UNFPA (2006), *Models for scaling up youth friendly services to prevent sexual and reproductive health problems and HIV/AIDS among young people in Nepal – June 2005 - July 2006* Country Paper, Nepal.

It appears that type one interventions (i.e. aimed at young people, and delivered through existing organisations or services) had a higher success rate than the interventions of the other types. The authors suggest that there is sufficient evidence to support widespread implementation of interventions to prevent HIV that are delivered within the framework of existing youth-service organisations or youth centres, however, these efforts should be closely monitored and evaluated.

Other programmes that will help reduce HIV vulnerability include vocational training for unemployed young people, poverty reduction programmes, income generation and saving schemes – all of which go beyond the scope of this paper.

2.1.4 Adolescents and young people at little or low risk

Adolescents and young people in this category are often termed 'general population young people'. They live in environments where risk behaviours are very minimal and where HIV prevalence is low or very low. Most live in relatively stable families, go to school and have secure jobs (especially those over 18); they may be married and have a family. In general, there is limited or no penetrative sex during adolescence, and where there is, it is typically limited and exists within a small network. Young people in this group may use cigarettes or alcohol occasionally, and may experiment with drugs, but as a rule they do not inject drugs (and therefore do not share injecting equipment).

2.1.4.1 General principles for policy and programming[13]

Considering the low-transmission efficiency of HIV, as well as the fact that occasional sex happens within their own group, and is not linked to the concentrated networks of sex work-, male-to-male- or injecting drug use-related HIV transmission that exist in Asian countries – the likelihood of young people in this group becoming infected with HIV is extremely small. For the few who may become infected by occasional involvement in injecting drug use or visiting sex workers (from further up the pyramid), the chance of members of this group transmitting HIV to others is small. Of course, they should be made aware of HIV/AIDS as part of general health education including how HIV is transmitted, and how to protect themselves and their children; this would also help to reduce fear and stigma of people living with HIV/AIDS.

Only limited specific HIV-prevention funds should be made available for the following interventions, which should be integrated into a broader adolescent health and development framework that:

1. Ensures that young people have basic life skills, and correct age and gender appropriate information about HIV/AIDS transmission and prevention as part of general adolescent health and development education in schools; information should be more sexually explicit according to age and be based on country level data on average sexual debut.
2. Ensures that most young people will have received sex education and HIV and pregnancy prevention education before their sexual debut (in a culturally appropriate manner).
3. Ensures that information about HIV/AIDS transmission and prevention is available in health centres and libraries, written in a language and tone appropriate for young people.
4. Ensures that HIV prevention information is provided to young people through community initiatives, including existing structures (youth unions, youth clubs, etc.).
5. Promotes compassionate and non-stigmatising attitudes towards minorities of all kinds among young people, as part of the entire curriculum.
6. Mobilises the mass media to sustain awareness of HIV/AIDS, especially during special events.

[13] See Note 2A for country level responses in Asia to HIV prevention needs of young people

2.1.4.2 Programmatic responses

Responses in schools can reach young people of all three epidemiological levels in the pyramid of risk – in most countries, young men who have sex with men, young people engaging in sex work and injecting drug users attend (or have attended) school, at least for a few years. Integrating basic messages about these behaviours into the school curriculum, especially non-stigmatising messages related to homosexuality (including anal sex) and messages preventing drug abuse that are not stigmatising towards drug users should be considered. School-based responses are especially effective for providing general knowledge and awareness of reproductive health and HIV/AIDS; information that complements more specific interventions dealing with the three driving behaviours of the epidemic are outlined in section 5.1.

A review[14] of 83 evaluations of HIV education programmes, based on written curriculums that were implemented among groups of young people in schools, clinics or community settings found that, of these studies, 18 were in developing countries; in Asia, only one study (from Thailand) was included. The review found that there are significant and mostly positive effects of these programmes on one or more of six aspects of sexual behaviour: initiation of sex, frequency of sex, number of sexual partners, condom use, contraceptive use in general, and composite measures of sexual risk-taking, for example:

- Of the 52 studies that measured impact on sexual initiation, 22 (42%) found that the programmes significantly delayed the initiation of sex among one or more groups for at least six months, 29 (55%) found no significant impact.
- Number of sexual partners. Of 34 studies measuring this factor, 12 (35%) found a decrease in the number of sexual partners, while 21 (62%) found no significant impact.
- Of the 54 studies measuring programme impact on condom use, almost half (48%) showed increased condom use; none found decreased condom use.
- Sexual risk taking. Some studies (28) developed composite measures of sexual activity and condom use (e.g. frequency of sex without condoms). Half of them found significantly reduced sexual risk-taking. None of them found increased sexual risk-taking.

Overall, the results strongly indicate that these programmes were far more likely to have a positive impact on behaviour than a negative impact. Two-thirds of the studies found a significant positive impact on one or more of these sexual behaviours or outcomes, while only 7% found a significant negative impact. A third of the programmes had a positive impact on two or more behaviours or outcomes. Findings for all the studies were similar in both developing and developed countries, and the programmes were effective with low- and middle-income young people, in both rural and urban areas, with girls and boys, with different age groups, and in school, clinic and community settings.[15]

School-based responses should be the primary way of reaching the huge group of young people who are at no or low risk of HIV/AIDS, with basic information about the transmission and prevention of HIV and STIs. It may be that allocation of specific HIV prevention funds are not needed for this, as HIV and reproductive health education can be included as one of many more health and hygiene, and development-related learning objectives. There is a sufficiently strong evidence base to support widespread implementation of school-based interventions provided they incorporate certain characteristics; these efforts should be led by adults rather than be peer-based.

[14] Kirby D, Laris B, Rolleri L (2005), *Impact of sex and HIV education programs on sexual behaviors in developed and developing countries.* Family Health International, 2005

[15] Ibid

It would be helpful to strengthen the evidence base for this recommendation for the Asian region, since Kirby's evidence stems mostly from non-Asian settings; anecdotal evidence from Asian countries suggests that many teachers have culturally inspired inhibitions regarding talking about sex with their students; students have also reported discomfort with this situation [16].

Mass media responses have also been found to help young people become aware of HIV. The above-mentioned WHO report included a review of mass media interventions (through radio, radio with supporting media, or radio and television with supporting media). The review included 15 programmes, of which one was in Asia (China). Only studies that compared 'intervention groups' and 'control groups' were included.

The data support the effectiveness of mass media interventions in: increasing knowledge of HIV transmission (including the Chinese study on a radio programme for adolescents); improving self-efficacy in condom use (this was also found in the Chinese study); influencing social norms; increasing interpersonal communication; increasing condom use; and boosting awareness of health providers. Fewer significant effects were found for improving self-efficacy in terms of abstinence, delaying the age of sexual debut or decreasing the number of sexual partners. It was found that programmes including television broadcasting had to be implemented with the most care, but also yielded the best results if following certain basic principles.[17]

An interesting finding of four of the reviewed studies was a so-called 'dose-response relationship', indicating that more exposure leads to more of the positive outcome, and less exposure leads to less of the positive outcome.

Mass media responses may be able to reach low or no risk young people, especially in rural areas, with basic information about HIV transmission and prevention. The authors conclude that the mass media has the potential to reach millions of people with life-saving messages that can increase knowledge and awareness about HIV and can also, when conducted with care, help change behaviour. Large-scale campaigns should be closely linked and coordinated with other intervention types (such as school- or clinic-based) to maximise their effect.[18]

2.1.5 Concluding discussion and recommendations

Available literature and research clearly identifies the behaviours which are resulting in high rates of HIV transmission in the Asian region, and can be seen as the 'drivers' of HIV epidemics, contributing to a huge proportion (over 90% in concentrated epidemics) of HIV cases: commercial sex, drug injecting, male-to-male sex and combinations of these behaviours. Three common elements must be present to ensure HIV prevention success: addressing specific behaviours and providing services to reduce these behaviours; providing access to information and services on a scale large enough to make an impact; and ensuring that the social, political and security environment supports the provision of appropriate HIV prevention services to those most at risk, allowing adoption of safer behaviour.

[16] UNESCO, personal communication

[17] Bertrand *et al*., in WHO/UNICEF/UNFPA/UNAIDS/LSHTM (2006), *Preventing HIV/AIDS in Young People: the first systematic review of what works to prevent HIV infection among young people in developing countries.* WHO Technical Report Series No. 938. WHO, Geneva, 2006

[18] WHO/UNICEF/UNFPA/UNAIDS/LSHTM (2006), *Preventing HIV/AIDS in Young People: the first systematic review of what works to prevent HIV infection among young people in developing countries.* WHO Technical Report Series No. 938. WHO, Geneva, 2006

Higher coverage of quality services to reduce HIV risks associated with injecting drugs, commercial sex and male-to-male sex would reverse the epidemic in Asia[19]. UNAIDS conducted a study on minimum coverage needs for different types of programmes and populations, divided by epidemic type[20] The key message here is the need to reach 80% coverage for injecting drug users, sex workers and men who have sex with men in all epidemic types.

However, in 2005, it was estimated that only 3% of injecting drug users in South and Southeast Asia[21] and 8% in China had access to comprehensive prevention and care services. Only 20% of sex workers were covered in South and Southeast Asia, and 38% in China. The poorest coverage data were found for men who have sex with men: 2% in South and Southeast Asia, and 8% in China. Compared to 2003, coverage of injecting drug users and sex workers had dramatically improved (starting from a very low base), whereas the coverage of men who have sex with men had remained stable.

In terms of vulnerable groups, coverage of prisoners with comprehensive prevention and care programmes was 31% for South and Southeast Asia – the number for China was not known. For young people living on the street, coverage was 10% for China, and 26% for South and Southeast Asia.[22]

The major recommendation of this paper is, therefore, to strongly increase resources available for age- and gender-appropriate HIV prevention and support services for young people engaging in high-risk behaviours. The coverage of comprehensive interventions that specifically reach these young people should be scaled up to reach 80% by 2010.[23]

Despite the huge difference in physical and cognitive development levels within the 10–24 age group (defined as adolescents and young people) the current HIV-prevention services for people engaging in high-risk behaviours are not age-specific. For this age group, operations research is needed to study whether the effectiveness of existing programmes can be further increased by making them more appropriate. For those under 18, it is proposed that, in principle, interventions should aim at providing alternatives to the behaviours in question and preventing exploitation. For those who have no alternative or are unable change their behaviour, a rights-based approach aimed at reducing harm is encouraged: under 18s should not be withheld their right to access prevention services because of their age.

This review has argued that 'young people' or 'youth' as a defining 'target group label' for prevention, care and support is unhelpful, because it masks enormous differences in HIV risk and vulnerability, which correspond to different needs. It is proposed that young people should instead be conceptually divided into three types and prioritisation for HIV prevention programming given accordingly.

Since the predominant vectors of HIV transmission in most Asian countries are one of three main risk behaviours (injecting drug use, sex work and male-to-male sex), it is proposed that adolescents

[19] MAP report (2001); MAP report (2004), *AIDS in Asia: Face the facts*; MAP report on MSM, (2005)

[20] The 'successful' countries in Asia, i.e. Type 4 in the MAP reports, are not included as a separate type in this division.

[21] The following countries were included: Bangladesh, Bhutan, Cambodia, India, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, The Philippines, Sri Lanka, Thailand and Vietnam.

[22] Stover J and M Fahnestock, *Coverage of selected services for HIV/AIDS prevention, care and treatment in low- and middle income countries in 2005.* Washington DC: Constella Futures, POLICY Project..

[23] UNAIDS, as quoted in Stover J and M Fahnestock, *Coverage of selected services for HIV/AIDS prevention, care and treatment in low- and middle income countries in 2005.* Washington DC: Constella Futures, POLICY Project.

and young people engaging in high-risk behaviours should be the main focus; followed by adolescents and young people who are more likely to start engaging in high-risk behaviours.

For this second priority group, young people who are vulnerable to start engaging in high-risk behaviours (including young migrants, young people living on the street and out-of-school young people), a wider, less HIV-specific approach is needed, focused on improving the safety of their direct environment. This can be done, for example, by providing safe spaces to stay and education or vocational training opportunities. Here, HIV/AIDS-related messages may be mainstreamed and integrated into wider social support programmes.

Lastly, there is a large majority of people in the age group up to 24-years-old who are at low risk and low levels of vulnerability to HIV infection. Many of these are in the younger age groups. It is proposed that HIV prevention information and skills for them should be considered only after the priority groups have been sufficiently covered, or if prevention information and skills can be integrated at low or no cost – for example, as part of broader adolescent reproductive health programmes. To this large majority of adolescents and young people, who do not engage in risk practices, may live environments where there is little or no HIV, have relatively stable families, work or go to school, HIV-related awareness messages can be integrated into the school curriculum at low or no cost; community-integrated responses (e.g. youth union activities, scouts and youth clubs) or responses via the mass media could be considered as part of a wider package of adolescent health and development.

In order to effectively reach out to the most-at-risk adolescents and young people, and reduce stigma and discrimination (which are barriers to their accessing of health and other services), it is proposed that reform – or at least a temporary 'freeze' on the implementation of laws prohibiting or criminalising the above-mentioned behaviours is called for, in order to enable health services and NGOs/CBOs to expand their reach and coverage of these groups.

2.1.5.1 Overall recommendation

Increase the resources available for age- and gender-specific HIV prevention based on a hierarchy of risk and vulnerability to HIV. Governments need to prioritise programmes that provide comprehensive HIV prevention for young people engaging in high-risk behaviours: injecting drug users, young women and men involved in sex work, and young men who have sex with men. Coverage of interventions (currently between 2 and 38% for different groups in different countries) should be scaled up to reach 80% by 2010 as recommended by UNAIDS..

2.1.5.2 Supporting recommendations

Develop age-appropriate HIV prevention strategies and interventions. Despite the huge difference in physical and cognitive development levels within the 10 to 24 age group, current HIV prevention services for people engaging in high-risk behaviours are not age-specific. For those under 18, interventions should, in principle, aim at providing alternatives to the behaviours in question, and at preventing abuse and exploitation. For those who have no alternative or are unable to change their behaviour, however, a rights-based approach aimed at reducing harm to the child is encouraged – that is, their right to access prevention services because of their young age should not be withheld. For the 18 to 24 age group, operations research is needed to study the extent to which the effectiveness of these services can be further increased by making them more appropriate for this age group.

Categorise adolescents and young people by their HIV risk and vulnerability. Not all adolescents and young people are at the same level of risk and vulnerability to HIV infection: for effective

HIV prevention among young people, better definition of sub-populations within the 10 to 24 year old age group, based on their HIV risk and vulnerability is necessary. Using a definition of 'young people' or 'youth' as a 'target group label' for HIV prevention is ineffective, since it masks enormous differences in HIV risk and vulnerability among young people, which correspond to different needs. Young people should instead be conceptually divided into three types:

1. Most-at-risk adolescents and young people: defined as those already engaging in high-risk behaviours.
2. Especially vulnerable adolescents and young people: defined as those who are more likely to start engaging in high-risk behaviours.
3. Low-risk adolescents and young people: the majority of adolescents and young people in South Asia whose behaviours and situation place them at little or no risk of HIV infection.

Prioritise HIV-specific resources and attention for those most at risk. It is recommended that since the greatest proportion of HIV infection in most Asian countries is caused by three main risk behaviours (injecting drug use, sex work and male-to-male sex), the 'most-at-risk adolescents and young people' group should be the main priority for resource allocation.

For the second level of priority, the especially vulnerable adolescents and young people (those who are vulnerable to start engaging in high-risk behaviours), a wider, less HIV-specific approach is needed, focused on improving their direct environment, especially by providing safe spaces to stay, educational and vocational training opportunities. Here, HIV/AIDS-related information, vulnerability-reduction skills and access to basic services could generally be integrated into wider social support programmes. For example, rather than HIV-specific interventions for adolescents and young people living on the street, appropriate prevention information and skills would be integrated into the broader outreach, protection and care services for adolescents and young people).

For the third type of adolescents and young people – the large majority of whom are living in environments where specific risk behaviours are very minimal and where HIV prevalence is very low or negligible – it is recommended that no significant HIV prevention resources should be allocated. Age and gender-specific HIV/AIDS-related information should be integrated into: the school curriculum at low or no cost; community-integrated responses (i.e. youth union activities, scouts, youth clubs) or via the mass media. These should be placed within a context of broader adolescent health and development, rather than be specific to HIV/AIDS, STIs or reproductive health.

In order to effectively reach adolescents and young people most at risk of HIV infection, and to reduce stigma and discrimination (which are barriers to accessing health services), reform – or at least a temporary 'freeze' of the implementation of laws prohibiting or criminalising the above-mentioned behaviours is called for, in order to enable service providers to expand their reach and coverage of these groups.

It is recommended that each country develops specific policies for adolescents, young people and HIV, following the example set by Pakistan, and taking the principles and recommendations of this paper into consideration. Such a policy should include country-specific epidemiological evidence showing the role adolescents and young people play in the epidemic, and be jointly developed by all stakeholders, including at the very least the ministries of health, education, social welfare, youth, and interior and justice.

2.2 ADDRESSING HIV RISK AND VULNERABILITY AMONG MARRIED WOMEN IN ASIA[24] *International Center for Research on Women*

While the prevalence among men is still higher than among women in most parts of Asia, this is beginning to change. For example, in India, HIV prevalence has been increasing among STI clinic and antenatal clinic attendees in some states.[25] In Thailand, approximately one-third of new infections in 2005 were among married women[26] and in China, the prevalence of HIV among women has grown from 25% in 2002, to 39% in 2004, and exceeds 1% among pregnant women.

As the epidemic progresses, women start to share a greater percentage of the burden, relative to men of similar age. For example, in Thailand, around 70% of the young people now living with HIV are girls and women between the ages of 15 and 24.[27] Women are also increasingly becoming infected in China, comprising 39% of all HIV cases in 2004, up from 15.3% in 1998.[28] Some figures from India reported that 40% of people living with HIV are women.[29]

This data indicates that married, monogamous women are at increasing risk of HIV.[30] Thus, while sex workers remain among the most-at-risk women, and should be a key focus for HIV prevention interventions, male clients of sex workers can act as bridges of HIV transmission to women and children[31]. Commercial sex work and multiple, concurrent sexual relationships among men thus constitute increasingly important mechanisms for HIV transmission in Asia.

This awareness requires a response, which directly engages men and boys as participants and agents of change. As new programmes engaging men and boys have been implemented, a body of effective evidence-based programming has emerged. These programmes have confirmed that men and boys are willing to participate in discussions related to gender equality, and rethinking masculinity, and that targeted, well-designed interventions can be effective in changing traditional and rigid attitudes and behaviours that perpetuate gender inequalities

Covering only the Asian region, these summary recommendations focus on a subset of gender-related interventions in three domains:

1. Those that directly seek to reduce the vulnerability of married women whose husbands are clients of sex workers;
2. Those that seek to reduce the vulnerability of married women overall; and
3. Those that seek to mitigate the impact of HIV on women living with and/or affected by HIV/AIDS.

[24] Based on the paper with the same title prepared by International Center for Research on Women (ICRW), Washington DC. The paper was supported by UNDP in collaboration with UNICEF EAPRO and UNAIDS RST.

[25] http://www.nacoonline.org/facts_hivestimates04.htm

[26] UNAIDS (2007), 2006 AIDS Epidemic Update. UNAIDS Geneva, 2007

[27] UNAIDS (2006), AIDS Epidemic Update, Geneva

[28] State Council AIDS Working Committee Office and UN Theme Group on HIV/AIDS in China, (2004).

[29] HIV estimates 2005, National AIDS Control Organisation, Ministry of Health and Family Welfare, Government of India (2006), New Delhi: Available at http://www.nacoonline.org/facts_hivestimates04.htm.

[30] Gangakhedkar RR, Bentley ME, Divekar AD *et al*., (December 17, 1997), Spread of HIV infection in married monogamous women in India. *JAMA* Vol.278 No.23.

[31] Mayer K, Newmann S, Solomon S *et al*. (2000). Marriage, monogamy and HIV: a profile of HIV-infected women in south India. *International Journal of STD & AIDS*, Vol.11, No.4, 1 April 2000, 250–3(4).

In order for this set of recommendations to be realised more immediately the focus is on presenting *existing* policy and programme solutions, rather than innovative approaches or new ideas that have not yet been tried in the region. This presents some limitations, for while it is increasingly clear what *needs* to be done to reduce gender-based HIV vulnerabilities, there remain very few examples of programmes that have taken effective, broad-based sustainable action. It is likely that over the longer-term, policymakers and HIV programmers will need to be innovative and test new ground in this area.

The issues involving gender and HIV/AIDS are complex and far-reaching. Meaningful progress in addressing gender will lead to lasting progress in stemming the epidemic, but making this progress will entail, in many cases, developing policies and interventions that are also complex and multi-faceted. This will often involve *compound* interventions – addressing more than one facet of the problem at a time. For example, in order to empower women economically it will be necessary to provide them with credit and savings opportunities. At the same time it may be necessary to change gender norms, which inhibit women's mobility or condone violence against women who step outside the circumscribed bounds of 'proper womanhood'.

An example of a programme which integrates several intervention points to reach a single goal – in this case improving reproductive health outcomes for young women in India – is the DISHA project.[32] This project combines improved access to information and services with livelihood skills and fostering change in family, and community norms and attitudes.

An example of a compound project from outside the region is the IMAGE project, which combines an HIV prevention education and microfinance programme for women with a violence-reduction programme in the community, which had a proven effect on reducing gender-based violence.[33] It will be up to policymakers to create the enabling environment for this type of programming to be taken to scale, so that communities can empower women and men, and girls and boys to protect themselves and each other from infection, and to partake equally in available testing, treatment and support services.

2.2.1 The way forward

2.2.1.1 Risk reduction

Among the most at-risk married women in Asia are women whose husbands are clients of sex workers. Surveillance data on the percentage of men or boys in the general population that buy sex, whether from females or males, brothel- or street-based sex workers, have become available in recent years. Based on a review of 900 surveillance reports and behavioural surveys, UNAIDS and the East-West Center, Hawaii, ascertained that in countries such as Thailand and Cambodia, up to 20% of the male population purchase sex; whereas in China and India, the figures vary from 2% to 10%. In Lao PDR, less than 5% of men frequent sex workers. Data from Viet Nam suggest that 40% of all married men have ever had extra-marital affairs, but there is some speculation within Viet Nam that this figure may be too low. Data also exists to suggest that condom use with sex workers is likely to be low, as it is within marriage. Married women's dependence on the social status and economic security provided by their husbands in most countries in the region prompts them to keep silent and remain married rather than seek divorce.

[32] International Center for Research on Women (2004). Development Initiative on Supporting Healthy Adolescents (DISHA). *Information Bulletin.* International Center for Research on Women, Washington DC.

[33] Pronyk P, Hargreaves J, Kim J *et al*. (2006). Effect of a structural intervention for the prevention of intimate-partner violence and HIV in rural South Africa: a cluster randomised trial. *The Lancet*, Vol.368, Issue 9551, 1973–83.

There are several approaches that can be taken to reduce the risk for these women. One would be to make sex workers less likely to acquire or transmit HIV, for example, through 100% condom use programmes, or programmes which seek to empower sex workers in a variety of ways to ensure that their clients use condoms and do not use violence against them, such as the well-known Sonagachi programme in India. A second approach would focus on promotion of marital fidelity (the 'B' of the ABC approach), and programmes which actively engage men and boys in redefining gender norms that place them and their partners at risk.

A third set of approaches would focus on health service availability and quality, particularly in tracking prevalence of STIs, scaling up STI diagnostic and treatment services, and making counselling and testing more widely available and accessible. These interventions, in turn, will need to be implemented alongside efforts to create an enabling environment in which these changes can be sustained long-term, such as programmes to shift gender norms at the community level, and programmes to address HIV-related stigma and discrimination. Above all, it requires the highest political commitment, underpinned by policy, programme and domestic resources to sustain such prevention efforts.

Stronger intervention around clients of sex workers will call for a population-based approach since men and boys who buy sex exist everywhere. It should complement scale up of prevention services targetting the most-at-risk, that is, sex workers themselves, whether female or male, injecting drug users or men who have sex with men. The population-based approach includes:

1. Improved public education through multiple-channel communication.
2. HIV education in school and outside school hours through student clubs or youth clubs (especially where teachers are unwilling to talk about condoms, sexuality and drug use issues).
3. Improved coordination within the health system with better operational linkages and referral for STI/HIV counselling and testing, better tracking of partners' risk status when men or women present themselves in STI or ANC settings, improved counselling practices (and the human resources needed to implement this) including partner notification, positive prevention and family planning, education on dual protection, as well as better referral and support for treatment and care.
4. Stronger linkages between these mostly vertically organised health services should be better supported by community mobilisation that engages young people to increase knowledge of STI/HIV prevention, risk of HIV during pregnancy, the prevention of teen pregnancy, and improved access to counselling and testing and prevention commodities. Greater male involvement will be necessary to improve knowledge of HIV risk, demand for testing and counselling services, prevention commodities, positive prevention, and treatment and care.
5. Youth-friendly health services combined with recreation, lifeskills education and livelihood-skills building activities.
6. Advocacy at all levels of government for improved coordination within the health sector, and between the health sector, schools and communities.

Programmes that have proved effective in Asia include the 100% Condom-Use Programme (CUP), a public health programme strategy that was first developed and pioneered in Thailand, and has been implemented throughout Asia in Cambodia, China, Lao PDR, Viet Nam, Myanmar and Mongolia. It has proven to be a very effective strategy to dramatically reduce the HIV transmissions that are

associated with the high-risk sexual activity. Establishing the 100% CUP over a large geographic area reduces the economic disincentive that sex workers and entertainment establishments may face if insisting on condom use. Clients do not have the choice to go elsewhere in the area, and the overall success of this strategy in reducing STI/HIV transmission is directly related to the size of the geographic area that has adopted the 100% CUP strategy; more area means more success. In India, the Sonagachi project reports current condom use at 89% and HIV infection rates among sex workers have stabilised at around 5%.[34]

2.2.1.2 Promoting change

There is currently little evidence of programmes on the ground in Asia that are working to promote fidelity and discourage patronage of sex workers by married men. The 100% CUPs have had some success in shifting norms around patronage of brothel-based sex workers, making this behaviour less socially acceptable among men in some populations. In Uganda, a recent study reports that efforts to address marital fidelity are not likely to prove effective long-term unless they target both husbands and wives, and also address the structural determinants that facilitate men's extramarital sexual behaviour.[35]

Programmes that have succeeded in promoting an enabling environment for changing damaging gender norms include AIDS prevention education programmes that use community-based, participatory processes; these allow for critical analysis and reflection among community members in order to trigger transformations in gender roles and norms, and include the following:

1. Systematic, wide-scale programming using proven techniques such as *Stepping Stones*, which has been implemented in various communities in Cambodia and India, to engage communities in meaningful, resolution-oriented debate on the issues.

2. Programmes working specifically with men of various ages to shift expectations and norms around gender and the treatment of women. Two excellent examples of this type of intervention are *Program H*, first developed in Brazil and now adapted for use in India[36] and Vietnam; and *Men as Partners*, developed and tested in South Africa to combat the dual and synergistic epidemics of gender-based violence and HIV/AIDS.[37] These programmes have effectively fostered constructive roles for men in sexual and reproductive health. The challenge now is to take the principles behind these successes and replicate them on a large scale, through, for example, communications campaigns, for the same impact.

3. Programmes working with young men and boys will be critical to ensuring the next generation of married men is empowered to make different choices. In India, the *Better Life Options Programme for Boys*[38] was implemented by the US-based Center for Development and Population Activities (CEDPA) through local NGOs. The programme has worked with 60,000 boys, aged 10 to 19, seeking to increase male involvement in reproductive health and improve gender sensitivities, among other goalsobjectives. It has been used in schools, vocational

[34] http://www.durbar.org/

[35] Parikh SA (2007). The Political Economy of Marriage and HIV: the ABC approach, 'safe' infidelity, and managing moral risk in Uganda. Available at: http://www.ajph.org/cgi/doi/10.2105/AJPH.2006.088682

[36] Pulerwitz J, Barker G, Segundo M, Nascimento M. (2006). Promoting more gender-equitable norms and behaviors among young men as an HIV/AIDS prevention strategy. Horizons Final Report. Washington, DC: Population Council.

[37] White V, Greene M, Murphy E (2003), *Men and Reproductive Health Programs: Influencing Gender Norms.* Washington, DC: Synergy Project.

[38] Schueller J, Finger W, Barker G. (2005). Boys and Changing Gender Roles: Emerging program approaches hold promise in changing gender norms and behaviors among boys and young men. Youth Lens #16. Family Health International, Arlington, VA.

training classes, tutoring classes, gyms, clubs and camps, implemented for varying lengths of time and intensity. An evaluation involving 2379 alumni showed dramatic changes in their lives, including increased gender awareness, communication abilities and decision-making skills. For example, boys' understanding of what constitutes sexual harassment and of non-violent resolutions to conflict increased by 29% and 12% respectively.

2.2.1.3 Vulnerability reduction

Analysis of the HIV epidemic in Asia suggests that almost all women are *vulnerable* to HIV, as a result of cultural and gender norms that make it very difficult for a married woman to ask her husband to use a condom, that condone or turn a blind eye towards domestic violence against women, and which undermine the right of women to own, control and inherit property. The silence and taboo surrounding women's sexuality and sexual pleasure also contribute to this vulnerability, by making it difficult for married women to ask key questions and seek and obtain services that may help protect them from HIV; and finally, norms which condone or turn a blind eye towards men having extramarital sex, and which make it impossible for women to admit to doing so, also contribute to this vulnerability.

In order to address these vulnerabilities, it is necessary to take a multi-faceted approach, including programmes which directly seek to engage communities, legal structures and couples themselves in facing these issues head-on: empowering couples to discuss fidelity and condom use, to adopt zero-tolerance to gender-based violence, to redress gender inequalities in property and inheritance rights, and to provide sexual and reproductive health services, which meet women's needs in their cultural context.

These recommendations will focus on reducing domestic violence, securing women's access to property and other assets. These latter two are also important mitigation interventions, to be touched upon in section three below. While efforts targeted directly towards the reduction of violence, and asset generation and protection can be effective, it is likely that sustained impact will only be obtained if these interventions are located within a broader-based, multi-pronged approach, which addresses root causes of violence and community norms that allow for its perpetuation.

Violence contributes directly and indirectly to women's vulnerability to HIV.[39] [40] Individuals who have been sexually abused are at immediate risk of HIV infection, but they are also more likely to engage in unprotected sex, have multiple partners, and trade sex for money or drugs.[41] A Cambodian study found that among 1000 female and transgendered sex workers, over 50% had experienced violence at the hands of law.[42] In addition to the violation of basic human rights, these rapes generally occur without the use of a condom, therefore sustaining some level of HIV transmission. In Cambodia, victims, often due to the fear that the perpetrator might retaliate, report few rapes.[43] While there is increased recognition that there is a relationship between HIV/AIDS and gender-based violence in Cambodia, there needs to be more emphasis placed on the relationship between gender-based

[39] Maman S, Campbell J, Sweat MD, Gielen AC (2000). The intersections of HIV and violence: directions for future research and interventions. *Social Science and Medicine,* 50(4), 459–78.

[40] World Health Organization (2005). Multi-country study on women's health and domestic violence against women: Summary report of initial results on prevalence, health outcomes and women's responses. Geneva: World Health Organization.

[41] Heise L, Ellsberg M, Gottemoeller M. (1999). Ending Violence against women. *Population Reports*, 27(4), 1–20, 25–38. Baltimore, MD: Johns Hopkins University School of Public Health, Population Information Program.

[42] Jenkins C, Cambodian Prostitutes Union, Women's Network for Unity, and Salisbury C. (2005). Violence and exposure to HIV among sex workers in Phnom Penh, Cambodia. Phnom Penh: The Policy Project.

[43] LICADHO (Cambodian League for the Promotion and Defense of Human Rights) (2006). Violence against women in Cambodia. Phnom Penh.

violence and HIV/AIDS within the context of marriage.[44] A small Bangladeshi study that examined vulnerability to HIV infection found that among half of the eight non-sex worker injecting drug users that reported being raped, the perpetrator were their husbands.[45]

2.2.1.4 Suggested solutions

A. Invest in gender and sexuality training for staff

The Inner Spaces Outer Faces initiative was piloted initially by CARE and the International Center for Research on Women in Vietnam and India. This programme enabled staff to more effectively integrate gender and sexuality into CARE sexual and reproductive health programmes. The *ISOFI Innovation System*[46] begins by fostering personal change among staff, evolves to organiaational change and practice, extending ultimately to changing the way the organisation conducts its work with communities. By facilitating this initial, inward-looking process, the system enables development staff working on difficult and taboo-laden issues to foster a new, more open perspective and facilitate a similar reflexive process among the communities with whom they work.

B. Invest in gender-transformative interventions

Communities need to be actively engaged in the process of changing perceived 'norms', and enabled to act upon this change. Programmes that have successfully been employed in the region include the *Stepping Stones* programme[47] and the *DISHA* project,[48] both of which work directly with youth and communities to transform gender norms and empower young women and young men to live more productively and safely.

C. Eliminate gender-based violence

No single intervention or type of intervention will suffice to eliminate this complex, socially inscribed, issue. A range of measures, including creation of a protective legal and public policy framework; work with men in communities of importance to them, e.g. religious institutions and the workplace; work with communities generally, and work directly with women to educate them about their rights and support them in the exercise of these rights. In order to abolish violence against women, it will be necessary to make it socially unacceptable, whether committed within marriage or not. Interventions will need to be tailored to specific national and local contexts.

Key elements of a comprehensive approach include:

- Ensuring protective measures in the legal context need are applicable to both married (legally or otherwise) and unmarried women.

[44] Duvvury, N, Knoess, J. (2006). Gender-based violence and AIDS in Cambodia: Links, opportunities and potential responses. Eschborn, Germany and Washington, DC: GTZ and International Center for Research on Women.

[45] Azim T, Chowdhury EI, Rez M *et al*. (2006). Vulnerability to HIV infection among sex worker and non-sex worker injecting drug users in Dhaka, Bangladesh: Evidence from the baseline survey of a cohort study. *Harm Reduction Journal 3:*33.

[46] Kambou SD, Magar V, Hora G, Mukerjee A. (2007). Power, pleasure, pain and shame: assimilating gender and sexuality into community-centered reproductive health and HIV prevention programs in India. *Global Public Health* 2(2):155–168.

[47] www.steppingstonefeedback.org; www.stratshope.org/images/t-steppingstones.pdf

[48] International Center for Research on Women (2004). Development Initiative on Supporting Health Adolescents (DISHA). *Information Bulletin.* International Center for Research on Women, Washington DC.

- Engaging the community in participatory approaches to enable men and women to examine the social norms that propel and accept violence and how these are exacerbated. One methodology for such work is the *Stepping Stones*[49] approach.
- Law enforcement and public officials need to be educated on the links between violence and HIV, appraised of current legislation against gender-based violence, and how to give appropriate support referrals when encountering victims of violence.
- Leaders at the highest levels to raise their voices against gender-based violence to change the threshold of acceptability of this behaviour.
- Leaders to participate in massive international public education and media campaigns that underscore the costs of violence to women's rights and to society as a whole.

D. Improve access to reproductive and sexual health services

Currently, stigma, social taboos and lack of physical, and economic mobility and independence all contribute to the difficulty women and adolescent girls face in obtaining access to reproductive and sexual health services, including testing and treatment for HIV and other STIs. The Asia Pacific Operational Framework for Linking HIV/STI Services with Reproductive, Adolescent, Maternal, Newborn and Child Health[50] provides specific guidance on creating a variety of linkages between services to maximise access and positive outcomes. This document also provides specific country examples where successful linkage has taken place in the region.

2.2.1.5 Impact of HIV on married women and widows

The challenges for married women in this epidemic do not stop at the risk of infection. In many ways more profound and intractable are the myriad impacts the epidemic has on women whose husbands and/or children are sick, dying or deceased from AIDS and AIDS-related causes. These women, many of whom will themselves be living with HIV, are faced with at least three types of stigma: the stigma of being female, the stigma of being a widow, and the stigma of living with or being closely associated with HIV.

These women also bear an inordinate burden of care and do so with ever-dwindling resources (social as well as economic). A recently concluded household level study, the *Gender Impact of HIV AIDS in India*,[51] for example, found that 70% of caregivers are women, among whom 21% were positive. Once a spouse has died, many women are dispossessed of property and children, and turned out on the street. The same study revealed that of the 2385 people living with HIV interviewed, of which 44% were women, more than 90% had stopped living in their marital home after the death of their husbands, and 79% of widows complained of being denied their share of the husbands' property.

Married women living with HIV also need to be able to prevent the transmission of the virus to their unborn children, and to avail themselves of antiretroviral treatment to ensure they are able to look after and provide for their children for as long as possible. This section focuses on a key subset of interventions that will support and empower women living with HIV and widows due to AIDS in the region, to ensure the protection of their rights and the protection of their ability to raise and care for themselves and their children safely and with dignity.

[49] see www.steppingstonesfeedback.org; www.stratshope.org/images/t-steppingstones.pdf
[50] UNICEF (2007); currently in draft form
[51] UNDP, NACO, NCAER (2006) Gender Impact of HIV AIDS in India, Basanta K, Sundar P.

2.2.1.6 Recommendations and solutions

A. Link female care givers to home-based care and treatment programmes

Most Asian countries continue to fall behind African settings in providing home based care for people living with HIV. In-depth analysis of the burden of care borne by women in AIDS-affected households indicates that these women require material, emotional and physical support to meet the obligation to care for a spouse, in-law or child living with HIV.[52]

Home-based care programmes within Asia tend to operate out of community-based organisations (CBOs) or faith-based organisations (FBOs) and are relatively small in scale. Some of the more effective programmes are those that run alongside HIV support groups. A notable example is the Ashar Alo Society in Dhaka, Bangladesh. Among a range of activities conducted to support those living with HIV and their families are efforts to scale up care and support programmes. A similar CBO in India is Cheyutha, based in Andhra Pradesh. This group is a health and development organisation which offers homebased care among other services, both clinical and psychosocial. The Salvation Army in India also has good coverage of home based care for HIV/AIDS.

An NGO in India, Vasavya Mahila Mandali, also in Andhra Pradesh, has been undertaking an innovative programme to empower grandmothers to care for their grandchildren orphaned by AIDS. There have been a number of successful homebased care programmes in Cambodia and Thailand, also. These include the SERVANTS programme, which focuses on educating volunteer caregivers in Phnom Penh, and a programme operating from the Faculty of Nursing at Chulalongkorn University in Thailand; this programme recruits people living with HIV to be case managers, and to provide homebased care and support to others in their community.[53]

The Buddhist Leadership Initiative, supported by UNICEF and being implemented in the East Asia Pacific region, is a programme designed to promote the role of religious leaders in the community response to HIV/AIDS. The project is based on the principle that Buddhist teachings position the temple at the heart of the community, as a place of learning and reflection, and encourage a compassionate response, and that lamas can play a role in encouraging community members to discuss the issues that confront them, and to develop strategies to deal with them effectively. Lamas and nuns in some areas, such as Mongolia, are trained to teach young people about HIV prevention, using lifeskills education and religious-based approaches.

Government and the private sector have a critical role to play in supporting these effective small-scale efforts through capacity building, and facilitating linkages between these community-based efforts and the services available within the formal health sector.

B. Eliminate barriers to antiretroviral treatment access for women

Barriers to antiretroviral treatment for married women and widows in Asia include lack of economic autonomy, lack of physical mobility, and lack of information and education about available services. Many women do not know they are positive until they are giving birth, or their husband dies of AIDS. Strategies to facilitate access to testing and treatment for married women in the region include the following:

- Create opportunities for and vigorously promote couple counselling and testing;

[52] Pradhan BK, Sundar R (2006). *Gender Impact of HIV and AIDS in India*. United Nations Development Programme, India.

[53] WHO (2002). Community Home-Based Care in Resource-Limited Settings: A Framework for Action. World Health Organization, Geneva.

- In Asia, some women may have compromised mobility due to gender norms. In these and other areas, promote access for women and girls by linking HIV counselling, testing and treatment services with other sexual and reproductive health services;[54]
- Engage in vigorous, widespread and ongoing stigma reduction to ensure that a positive test result and/or being on treatment regimes does not result in other negative outcomes for women or their families;
- Co-train all counselling and testing staff in recognising survivors of gender-based violence, providing appropriate support and referral to services.[55]

C. Guarantee prevention of mother-to-child transmission and ART for positive mothers

The Global Strategy for Accelerating the Scale up of Prevention of Mother-to-Child Transmission[56] promotes the integration of PMTCT and links with maternal, newborn and child health, antiretroviral therapy, family planning and STI services. The goal is to ensure the delivery of a package of essential services for quality care that includes:

- Routine antenatal care for all women, regardless of HIV status;
- Additional services for women living with HIV;
- Additional services for all women regardless of HIV status in specific settings; and
- Essential care for HIV-exposed infants and young children.

D. Promote and protect the property and inheritance rights of women affected by HIV/AIDS

Women who own property or otherwise control assets are better positioned to improve their lives and cope when crisis hits. Thus, property and asset ownership and control have an empowering effect on women living with and affected by HIV, enhancing their resiliency and ability to manage their lives effectively despite their desperate circumstances.

A recent study conducted by UNDP and ICRW in South Asia (India, Bangladesh and Sri Lanka)[57] highlighted the plight of women widowed due to AIDS, and reported that, while many widows living with HIV realise they can lead healthy lives and are seeking to increase their asset security, there is little support available to enable them to do so.

Organisations have limited understanding of how women's property rights could mitigate the impact of AIDS and the response tends to be fragmented due to competing priorities and limited capacity. This report found no organisations that have responded to women's property issues in a comprehensive way, but documented existing interventions that include support with formal legal mechanisms, which emphasise mediation within families and community-level dispute resolution forums:

[54] See Asia-Pacific Operational Framework for Linking HIV/STI Services with Reproductive, Adolescent, Maternal, Newborn and Child Health (2007), WHO (http://www.wpro.who.int/NR/rdonlyres/DB0EB0E3-3AB5-4667-ACD9-E8C5DAEA53FC/0/HSI_LinkingHIVServices_March2008_FINAL.pdf)

[55] WHO Guidelines on Integrating Gender into HIV/AIDS Programmes (2003), Department of Gender and Women's Health, Family and Community Health, WHO (http://www.who.int/gender/hiv_aids/en/Integrating%5B258KB%5D.pdf.)

[56] Inter-Agency Task Team on Prevention of HIV Infection in Pregnant Women, Mothers and their Children (2007). Global Strategy for accelerating the scale up of prevention of mother-to-child transmission of HIV: towards universal access and eliminating HIV/AIDS among women, infants and young children. DRAFT dated 26 June, 2007.

[57] Swaminathan H, Bhatla N, Chakraborty S. (2007). *Women's Property Rights as an AIDS Response: Emerging efforts in South Asia*. International Center for Research on Women, Washington DC.

- Ensure property ownership and inheritance rights of women for social protection and to mitigate the impact of HIV/AIDS, specifically – promote women's property rights and develop a stronger evidence base through strategic research, and invest in organisations' (positive women's networks and women's rights organisations) capacity to link with and address HIV/AIDS and property rights. A review of existing laws and their implications on women's equitable access to property is needed. (These recommendations arose from a regional consultation on women's inheritance and property rights, hosted jointly by UNDP, UNIFEM and ICRW in Colombo, February 2007.)

- Ensure legal support for women to access their inheritance and property. In the context of HIV/AIDS, this becomes even more urgent. A compilation of benchmark judgements, case studies and strategies that have been adopted to ensure that rights are enforced, accessed and exercised in the region needs to be conducted. A group of lawyers in India have successfully taken up these issues on behalf of HIV-infected and affected women and have a caseload of over 120 applications. Exchange of effective strategies across the region and dissemination of these strategies is clearly needed.

- Property ownership by women as a means of protection from domestic violence: women's property ownership is linked with a substantially lower risk of marital violence. One of the main findings of a study on domestic violence and women's property ownership in India was that it is linked with a substantially lower risk of marital violence. 49.1% of women who were without property, reported experiencing long-term physical violence, compared with 6.8% of women who owned property or land in some form.[58] In other words, women are less likely to be victims of physical violence by a factor of seven if they own property.[59]

- Therefore, programmes that specifically address reduction of domestic violence and its link with HIV/AIDS should be prioritised.

E. Invest in long-term, broad-based stigma reduction programming

Stigma is most often and most profoundly felt at home and in one's own community. Most communities want to support their members, and react positively to efforts to change stigmatising practices. Interventions can engage community-based organisations and faith-based groups to develop and implement a broad range of activities to educate on HIV, HIV-related stigma, and how it really is to live with HIV. Toolkits exist for implementing this type of programming.[60]

F. Facilitate economic independence and solidarity among women through creative micro-finance programming

- Programmes that address the economic empowerment of positive women such as the Women and Wealth Project (implemented in three countries in the region: China, India and Cambodia under the technical guidance of Population Development Association of Thailand and the UNDP regional programme on HIV) have had extremely encouraging results. Some of these results include: improved quality of life for positive women, improved ARV adherence, reduced self-stigma and increased school attendance of children of positive women.[61]

[58] Domestic Violence and Women's Property Ownership: Pradeep Panda; from Property Ownership & Inheritance Rights of Women for Social Protection – The South Asia Experience ICRW (2007)

[59] Panda P, Agarwal, B. (2005). *Marital Violence, Human Development and Women's Property Status in India*. .

[60] For example, see http://www.icrw.org/docs/2003-StigmaToolkit.pdf An English language version of this toolkit focused on work with communities in Asia will soon be available through www.icrw.org and www.isds.org.vn

[61] Women and Wealth Project, (2007), Quarterly Report.

- In building security for women, particularly those infected and affected by HIV, micro-insurance schemes have proved successful in countries such as India. A recent study by UNDP[62] shows that in the face of risks faced by the poor, asset provision and income generation alone are not enough. Risk management to secure assets and income schemes are an effective way to cushion the blow.
- The Positive Partnership Programme, a micro-credit, community education and support network in Bangkok, Thailand, organised by the Population and Community Development Association (PDA), is one of few programmes that have been successful in improving many different aspects of an individual's life when affected by an HIV-infection. The project plays two important roles in Thailand's villages: it provides a pathway to financial security for those who have been ostracised by HIV, and it teaches the community that those living with HIV can be productive and make valuable contributions over the long-term. This programme has not only significantly improved the lives of those infected with the disease but has also helped transform how those infected by the disease interact with their communities. A recent study found that, based on the universality of many of the characteristics that drive the programme's success, adapted versions of could have similarly powerful impacts in countries highly affected by HIV/AIDS.

[62] HDRU (2007), Building security for the poor: Potential and prospects for micro-insurance in India.

2.3 MITIGATION POLICIES FOR CHILDREN AFFECTED BY AIDS[63] *Waranya Teokul and Viroj Tancharoensathien*

As HIV incidence rises in Asia and more adults are succumbing to AIDS, the socio-economic consequences deserve increased policy attention. The brunt of the disease burden most often falls upon women and children, with household income and savings depleting due to health expenses as the disease progresses to full blown AIDS. There are increased reports of children dropping out of school, joining the workforce early and shouldering care responsibility in preparation for the certainty of orphanhood.

This paper reviews social policy options to ensure greater protection of orphans and vulnerable children, especially children affected by AIDS in Asia. It focuses mainly on mitigating the socio-economic impact of AIDS on the most vulnerable members of society.

The recommended policy measures to respond to the socio-economic consequences of HIV are intricately linked to other policy reviews for the Commission on AIDS in Asia, in particular, access to antiretrovirals for adults and children living with HIV. This helps prolong the survival of parents and deals with HIV-related livelihood issues, deflecting an impending AIDS orphans crisis and giving children access to parental care and attention. This also helps improve their chances of survival into adulthood. This paper concentrates on sustainable social and fiscal responses.

In this respect, an important distinction must be drawn between the scenarios in Sub-Saharan Africa and Asia. The crucial difference is in size estimates that determine the policy directions for Asia. While Africa, with its longer experience in tackling HIV, provides useful lessons for policymakers from other regions, the continent's 12 million children64 orphaned by AIDS also makes HIV a compelling focus of policy response.

In Asia, the much smaller number of children in this category – estimated to be 1.5 million – requires policy considerations that take into account the following:

- The concentrated nature of the epidemic.
- The severe stigma and discrimination where social exclusion and ostracism can result if and when one's identity is exposed.
- The multiple vulnerabilities of these children whose parental risk behaviours – as sex workers, clients of sex workers, injecting drug users and men with multiple sex partners (whether with other men and/or with women) – will have pre-determined the need for special protection.
- The larger poverty alleviation measures – through universal benefits, conditional or unconditional cash transfers – that are already in place in some countries to bridge widening socio-economic disparities amid rapid economic growths.

Policy considerations for children affected by AIDS in Asia therefore needs to factor in the drivers of HIV and the situations of the region, as well as current levels of social protection systems. Social protection responses will need to go beyond children affected by HIV not only to minimise bias or exclusion, but also in order to respond to the current situation appropriately. The exclusivity of assistance to children affected by HIV, as opposed to other orphans and vulnerable children, brings about the

[63] Based on the paper 'Revisiting mitigation policies for children affected by HIV and AIDS and other vulnerable children' prepared by the same authors. The paper was supported by UNICEF EAPRO in collaboration with UNDP.

[64] UNICEF (2006), *'Africa's Orphaned and Vulnerable Generations: Children Affected by AIDS'*

likelihood of further marginalisation. Such narrow focus would also incur substantial additional administrative costs to identify such children. It can also give rise to 'lucky orphan syndrome' where children orphaned by AIDS are given more attention than other vulnerable children, creating a second tier problem in equitable distribution.

In assessing policy options, the researchers are aware of cost implications. Social assistance to orphans and vulnerable children, against the vast population sizes of Asia entail monumental costs. While the long-term benefits of assisting orphans and vulnerable children in general is pointed out the authors also make out a case for prioritization by identifying the key stakeholders.

2.3.1 Key stakeholders for policy measures

The policy recommendations aim to mitigate the impact of HIV on orphans and vulnerable children. There are three groups of stakeholders involved:

- Children affected by HIV, who should be considered as part of the larger category of orphans and vulnerable children (OVC). This is in order to avoid adverse consequences, in particular, further stigmatisation and discrimination against HIV.[65] Thus, the largest target population for social assistance should include orphans – from AIDS and other causes – and other vulnerable children;
- The families and communities, and community organisations directly and indirectly caring and supporting orphans and vulnerable children, including children affected by HIV: and
- Government, NGOs, CBOs and civil society – the supporters and enablers, that can ensure sustainability of impact mitigation.

Currently, there is no common, regional definition of vulnerable children other than children affected by HIV and orphans, precluding the use of any common construct on which to operationalise responses to this amorphous group. Therefore, this paper delineates vulnerability based on relative economic status. In addition, the status of orphans are used for further filtering the priority children for short-term policy goals, since the burden of covering all vulnerable children cannot be achieved by most Asian countries at the current stage. The main policy recommendation also emphasises the use of cash transfers as the most appropriate scheme that can cater to, or is as responsive to, the needs of the beneficiaries as possible.

2.3.2 Listing of beneficiary groups

The impact mitigation policies for children affected by HIV, orphans and other vulnerable children delineated above may appear to give higher consideration to cost implications than equitable access in terms of their rights-based implications. The recommendations made are a combination of short-term and long-term measures, the latter taking into account financial feasibility given the large group of vulnerable children that require special attention.

It should be made clear that these policy options do not relinquish the rights-based goals of universal rights and entitlements in the long-term, and that targetting does not entail exclusion. The question of how such policies could, in the short- and medium-term, most effectively mitigate the various socio-economic and psychological impacts of HIV on orphans and vulnerable children.

[65] UNAIDS, UNICEF, USAID, (July, 2004), Children on the Brink 2004, A Joint Report of New Orphan Estimates and a Framework for Action.

Box 2.2: Beneficiary groups and recommended approaches

Beneficiary Groups	Category	Notes
Children affected by AIDS (CABAs) living in poverty	- HIV positive children - Children, at least of whose parents is are HIV positive - Orphans, at least one of whose parents died due to AIDS - Children living with an adult who is seriously ill due to HIV-related illness	It is not always possible to identify these children and it is difficult to reach out to this group, especially in low-prevalence countries. Exclusive targetting of this group with an explicit policy is not recommended, as experience shows that it induces active case finding or revelation of HIV status, both of the children and their families, which will likely cause negative impacts, such as loss of livelihood, further stigmatisation and ostracism*.
Orphans living in poverty	- Single orphans (one parent) - Double orphans - Children expected to become orphaned within a year	Orphans are also not recommended to be stand-alone policy targets in the long run. However, orphan status can be a proxy for children affected by HIV due to the fact that orphaning remains the most visible, extensive, and measurable impact of HIV on children.
Children made vulnerable due to other causes	- Vulnerable children (*no standard regional definitions*) including street children, sexually-exploited children, migrants, children living in poverty etc.	This represents the larger group of children requiring assistance (a long-term goal). Very poor vulnerable children are the target of these policy recommendations. Children who are living in special circumstances (street children, disabled children etc.) may require special care.
Families and communities caring for and supporting OVCs	- Biological parents and other caregivers - The communities where these children live	Support to be given to families taking care of these children and (non-economic) support to communities. Institutional care is not recommended)

Note: The categories of these groups of children are not mutually exclusive; they overlap.
* Provision of ART for children was not under the scope of this study

The current policy recommendation takes into account literature and debates concerning these issues in the African context, adapted to the distinct, low HIV-prevalence settings of Asia, supplemented by data and policy examples collected from Thailand, China and Vietnam. In contrast to the African experience, there has been relatively little regional debate on children affected by HIV and orphan and vulnerable children policies specifically in the Asian context, something which this paper seeks to address in order to provide the basis for evidence-based policymaking.

2.3.3 Policy strategies

The Framework for the Protection, Care and Support of Orphans and Vulnerable Children Living in a World with HIV and AIDS (2004) is seen, for purposes of the present policy exercise for Asia, as an important basis for analysing and identifying priority actions. Firstly, it is important to understand the developmental needs of children and therefore policy to create the environment suited to the survival and growth of orphans and vulnerable children. Secondly, the distinction between conditional and unconditional cash transfers. The key strategies addressed in the current policy framework are as follows:

- Strengthening the capacity of families to protect and care for orphans and vulnerable children by providing economic, and psychosocial, as well as other support to families. This entails measures to improve economic resources for parents or extended family to care for their children. It can take the form of conditional cash transfer, which stipulates conditions e.g. to sustain a child's basic education such that assistance will cease with dropout; or unconditional cash transfer, a preferred approach to give caregivers the right to decide how to use it, depending on the child's need. Often, these children may need food security, not schooling (at times taken care of by other forms of assistance), whereas a conditional cash transfer on education will not enable them to receive food aid to cover nutritional need. A policy to empower families to care for these children also entails a shift away from institutional arrangement that intensifies separation from a normal family environment, making it difficult for children to re-enter

society or look after themselves when they enter adulthood. Alternative care through fostering, kinship, non-residential care or adoption is preferred. In creating the environment re-integration into the community, there is a need to support community-based responses to provide both immediate and long-term assistance to vulnerable households.

- Ensuring access to and use of essential services for orphans and vulnerable children, including but not limited to legal citizenship requirements and rights, such as education, healthcare and birth registration. A policy that ensures equitable access enhances distributive justice. In the long run, improved policy and legislation, in particular channelling resources required for its implementation to communities, will provide complementary measures that make cash assistance more holistic and comprehensive in terms of meeting basic needs. It also reduces the tendency towards aid dependence, and higher appreciation of the value of social assistance. Community engagements through NGOs also enable the social welfare system to reduce administrative costs, especially in cash disbursement in the absence of a well-functioning banking system, and in welfare monitoring.
- Raising awareness at all levels of society through advocacy and social mobilisation to create a supportive environment, specifically for children affected by HIV.

2.3.4 Key policy recommendations

2.3.4.1 Core policy

Cash transfer to improve well being. Providing cash transfers, either conditional or unconditional, is recommended as a core policy measure to improve the wellbeing of vulnerable children including orphans in poverty and children affected by HIV. The scheme should engage trusted institutions, for example, CBOs, NGOs and local government, in identifying and delivering benefits to recipients, (children, families or their caregivers) while ensuring that they are aware of their entitlements and creating strong oversight mechanisms.

While providing cash transfers to orphans and vulnerable children or their families it is important that the countries also have policies of promoting universal coverage of essential social services for all children; for example, free health services, immunisations and education.

2.3.4.2 Supporting policies

To ensure the appropriate implementation of such a cash transfer policy through community mechanisms, it is useful to consider the following supporting policy measures:

- Engaging and institutionalising the capacity of community-based settings: CBOs, NGOs, and local government and authorities, to care for and be responsive to the needs of orphans and vulnerable children and destitute families, whereby they are treated as part of solutions, by:

  1. *Strengthening and building community mechanisms* to analyse the situation in the community and to prioritise target groups, their needs and necessary actions. These include arranging for substitute families to either adopt or provide foster care to children with clear identification and management of who will be the guardian or have custody, e.g. immediate kin, a distant relative or other families in the community, especially in the case of double orphans (who have lost both parents). (Note that marginal cash transfer or ensuring availability of basic services has a positive effect in finding substitute families for orphans, especially when communities are involved in identifying beneficiaries and delivering cash transfers. As mentioned in the core policy, this will generate a sense of ownership and induce contribution from community resources.)

2. *Establishing community referral systems* for coordinating assistance to orphans and vulnerable children through various local mechanisms, such as through monitoring school enrolment and attendance, and access to basic health and nutrition services in a continuum. The focal points in the community (e.g. a public health nurse, a community healthworker, a volunteer or a teacher) play a crucial role in ensuring support from various sources are distributed to all orphans and vulnerable children. As dealing with this group is a delicate issue, it requires long-term engagement and commitment by all partners, especially the community focal points. In addition, close monitoring and follow-up to ensure orphans and vulnerable children adequately access social services and cash assistance.

3. *Promoting networking and knowledge-sharing* among public agencies, NGOs, international organisations and CBOs, as well as the media, to scale up assistance to orphans and vulnerable children;

- Creating awareness at the national-level to enhance social responsibility for the care of orphans and vulnerable children by:

1. Devising a set of strategies regarding psychosocial support enabling orphans and vulnerable children to be successful in their passage to adulthood, such as through role modelling in place of the absence of parental inspirations, skill-building in art, music and sports and engaging such children in community activities.

2. Promulgating and enforcing legislation to ensure access to justice and judicial protection for orphans and vulnerable children and prohibiting discrimination against them;

3. Developing national plans of action for incorporating orphans and vulnerable children, and then all children into the existing social welfare and social protection systems, or reforming such systems.

2.3.4.3 Step-by-step targetting

This paper recognises the constraints, fiscal and capacity-wise, for governments to implement universal benefits in the short term. However, it also recognises that such constraints should not undermine the importance of attaining universal benefits for all orphans and vulnerable children – in the form of equitable access to essential services and minimally appropriate standards of care – as the long-term policy goal. It also draws attention to the inappropriateness of targetting only children affected by HIV as a priority group, primarily owing to the difficulty in identifying them in low HIV-prevalence settings. Exacerbating such difficulties is the strong likelihood that selective, targetted benefits can and will result in greater discrimination and negative consequences for children affected by HIV. Exceptionalism in this case may weaken social capital. A step-by-step prioritisation that takes into account both fiscal constraints and the larger social conditions is therefore required, and is a challenging policy balance to achieve.

When the needs of all vulnerable children cannot be addressed in the short term, the priority should go to orphans subsisting below the absolute poverty line. In countries without sufficient public financial resources, double orphans below the poverty line could be given the highest priority as part of the group of all vulnerable children, followed by single orphans living in poverty. For the purpose of targetting, this should include children those whose parent or parents will die within a year.

In some middle-income countries, where additional resources may be mobilised, additional subgroups of vulnerable children should be included using geographical targetting. Where the requisite political commitments and financial resources are available, cash transfers and access to essential services should support all vulnerable children.

2.3.4.4 Targetting social assistance to orphans and vulnerable children step-by-step

Criteria	Short-term policies	Long-term policies
Poverty status	Primary criterion: communities identify those in poverty, since means-testing may not be feasible for countries that do not have regular socio-economic surveys of households; social criteria regarding difficult circumstances, pertaining to community context could be applied.	Prime criterion: communities identify those living in poverty.
Relations with HIV	Secondary criterion: only used when the dedicated financial resources to be deployed are HIV specific.	—
Orphan status	Primary criterion: double orphans, as well those children who recently lost both parents, preferably less than two years ago (expand to age-based priority beyond these children).	Secondary criterion: double and single orphans.
Vulnerability of children	Not applicable.	Primary criterion: Communities identify vulnerability

2.3.4.5 Resource needs

Our study estimates that the implementation of the core policies require less than US$ 100 per child, per year in East Asia and the Pacific, as partial support for food and education. The Table 2.2 below shows one possible cash transfer model in which the total regional costs are based on a mix of 5 or 10 dollars per month, per child, based on level of the price index of the respective country (see cost Table 2.1B in Supplementary Note 2 B). This is approximately a quarter of the cost of adult antiretroviral treatment per year. Though financial resources are important, leadership and commitment are more crucial in enhancing the protection of vulnerable children at the national and sub-national levels. Local knowledge and mutual support in the community are intangible social assets, especially in the implementation of low-cost community-based response programmes. It is undeniable that donor resources are important, but long-term sustainability requires governments to generate national and subnational resources. Assessment of the cost effectiveness of programme intervention by community members and NGOs are useful for programme design.

Table 2.2: Estimated funds needed to support OVC in Asia (million US$ / year) [66]

Period of orphaning and age group	Double orphans	Single orphans	
		Paternal orphans	Maternal orphans
Recent orphans < 2 years'			
Young orphans 0-4 years	20.64	268.35	120.90
Orphans 5-9 years	26.25	285.91	145.83
Orphans 10-14 years	49.64	381.54	206.86
Sub-total	*96.53*	*935.81*	*473.59*
Non-recent orphans > 2 years'			
Young orphans 0-4 years	5.46	70.98	31.98
Orphans 5-9 years	47.36	499.97	260.85
Orphans 10-14 years	177.83	1,340.72	728.67
Sub-total	*230.65*	*1,911.67*	*1,021.50*
Total	**327.18**	**2847.48**	**1495.10**

Note: The total estimated amount for orphans (both double and single) in poverty Q1-Q3 is US$ 4.670 millions per year in the Asian region.

2.3.4.6 The way forward

Assessment of the situation of orphans and vulnerable children by key partners at country and subnational levels is needed to arrive at a consensus and decisions for national and regional policy goals and strategies, taking into account the respective fiscal capacities of a country. Prioritisation of programme activities and target populations is required in view of resource constraints.

[66] Based on assumption of paying 5 or 10 dollars per month depending on the place

SUPPLEMENTARY NOTES

NOTE 2 A: AN OVERVIEW OF POLICY-LEVEL RESPONSES

Specific policy documents related to HIV and young people are rare. Young people are usually discussed in policy documents and strategies that set out to enhance the wellbeing and development of young people in general (often developed by Ministries of Youth or Education), whereas HIV/AIDS (in general) is discussed in National Strategic Plans and policies usually developed by the Ministry of Health or a multisectoral HIV/AIDS body. This section reviews some of these documents (by country-level example) and looks at international policy commitments.

Pakistan

Pakistan is the only example found in this review of a country that has developed a specific HIV-prevention strategy for young people. It was developed by the National AIDS Control Programme (NACP) and the Ministry of Health, with assistance from UNICEF, Pakistan. With prevalence levels of 5% among people practicing high-risk behaviour(s), the strategy sensibly suggests a focus on young people with high-risk behaviour, rather than the current approach of raising awareness about HIV in the 'general' young person population through the mass media.

The Pakistan strategy includes a distinction of young people at 'high risk' – already engaging in one or more risk behaviours; 'vulnerable' due to their situation and therefore more likely to start engaging in one or more risk behaviours, e.g. street children or young migrants; and 'low or no risk' – the largest group of all. This last group are young people who are part of stable families, and though some may be sexually active, or experiment with alcohol or drugs, they are unlikely to be linked to the concentrated networks of HIV transmission in Pakistan.

In order to make prevention work possible with young sex workers (male and female), young drug users and men who have sex with men, the Pakistan strategy calls for different sectors to link in with prevention activities, notably the Ministry of Justice and Internal Affairs and the Ministry of Youth. Since many of the behaviours that carry a high risk of HIV transmission are illegal in Pakistan, working with the law enforcement sector to find pragmatic methodologies for outreach, care and support for these groups makes sense – decriminalisation would remove an important initial barrier to young people engaging in these behaviours in accessing healthcare and social support services. The strategy also identifies unemployment and poverty as important vulnerability-enhancing factors, and calls for better vocational training and other educational opportunities for young people.

The consultation process leading to the formulation of the young people prevention strategy, combined with the insight that not all young people are equally vulnerable and at risk, has led to an adaptation of the National Strategic Framework of Pakistan – Area 3 (focusing on young people).

India

In India, a National Youth Policy was developed in 2003. The policy defined 'youth' very broadly, as aged between 13 and 35. The policy sets nine objectives, one of which is related to access to health information and services, which includes those related to HIV/AIDS. It also mentions HIV/AIDS as one of the issues that should be mainstreamed in school curricula. In the Health chapter of the policy, there is a section on HIV/AIDS, which deals with the establishment of 'adolescent clinics in large hospitals'. Remarkably, rather than focusing on the main drivers of the epidemic, the policy prioritises rural and tribal youth for HIV/AIDS prevention, also out-of-school youth and adolescents, 'particularly females, youth with disabilities and youth in vulnerable situations such as those who are trafficked, orphaned and live on the streets'.[67]

[67] UNFPA (2006). Policy and programming for HIV/AIDS and reproductive health of young people in South Asia: an annotated inventory. United Nations Population Fund, CST for South and West Asia, Kathmandu, Nepal, October 2006

Nepal

The Nepal National HIV/AIDS Action Plan and Budget 2005–6 acknowledges the importance of addressing the needs of 'vulnerable groups who have not previously been acknowledged as priorities' and 'the value and strength of civil society organisations as implementing partners in reaching the most-at-risk and vulnerable populations.' Targeted interventions should be 'comprehensive' and include 'peer-led information, education and communication (IEC), STI services or referrals, VCT services or referrals, condom distribution and community sensitisation.'

The Action Plan identifies the following groups to be covered by the approach outlined above: 'Sex workers, men who have sex with men, injecting drug users, mobile populations and families, uniformed services and young people.' It should be noted that by including 'young people' in this list – about half of Nepal's population – the Action Plan distracts from the need to focus on the four groups listed previously, and risks diluting scarce prevention funds towards low-risk young people. Programmatic elements (focusing on young people) that the strategy proposes include: awareness-raising through IEC campaigns, lifeskills education (including integration of HIV/AIDS into formal education curricula and teacher training) and for out-of-school youth, peer education and IEC. Youth-friendly information and health services, including condom promotion, voluntary counselling and testing and STI services are also part of the Action Plan.[68] The strategy does not mention the fact that many (if not most) sex workers, injecting drug users, migrants and men who have sex with men are themselves young people, and whether and how strategies for young people and those outlined for the other groups should be related.

In 2006, a National Adolescent Strategy on Reproductive Health was developed in Nepal. The document outlines strategies including mainstreaming of reproductive health education (which includes HIV/AIDS) into school curricula, 'community-based dissemination' of adolescent reproductive health information, dissemination of STI-prevention messages in all available and appropriate channels, 'multisectoral advocacy for creation of a supportive environment for adolescents to practice safe behaviour' and 'mobilisation of adolescents and their gatekeepers against risk taking behaviours'.[69] Again, the focus on 'national adolescents' as a group should be considered non-strategic since it conceals differing levels of risk and vulnerability among Nepali youth.

Lao People's Democratic Republic

The Lao PDR National Strategic and Action Plan on HIV/AIDS/STIs 2006–2010 aims to maintain HIV prevalence in high-risk populations (defined in the usual way) below 1%. In order to do so, it aims to scale up coverage of behaviour change interventions, condom promotion, STI services, and VCT and awareness raising across different populations, including sex workers and their clients, to 90% in target provinces.

As well as sections on sex work and mobility, the strategy contains a section on young people. It notes that 54% of the population of Lao PDR is under 20 years old, and that socio-economic development has led to changes in the lifestyle and sexual behaviour of young people, including high alcohol use and rising recreational drug use. It sets a target of reaching 40% of all out-of-school youth in selected provinces with awareness raising and 4% with a broader package including IEC, VCT and STI services. The strategy sets a nationwide target of 30% 'reached with RH/HIV/AIDS/STI education and drug awareness' for Grade 5 and secondary school youth.

[68] Government of Nepal (2005), *National HIV/AIDS Action Plan and Budget 2005-6: A Public/Private partnership to scale up the HIV/AIDS response in Nepal.* MOH, Kathmandu, 2005.

[69] UNFPA (2006). Policy and programming for HIV/AIDS and reproductive health of young people in South Asia: an annotated inventory. United Nations Population Fund, CST for South and West Asia, Kathmandu, Nepal, October 2006

The strategy also includes ambitious and surprisingly frank sections on sex workers, men who have sex with men and drug users – many of whom are young people, something the strategy does not explicitly mention.[70] The strategy is sensible in making an implicit distinction (and prioritisation) of high-risk people, 'vulnerable youth' (defined as 'out-of-school youth') and other youth (presumably low risk and in schools) with coverage targets of 90%, 40% and 30% respectively.

China

The Chinese Action Plan (2006–2010) for Reducing and Preventing the Spread of HIV/AIDS set ambitious targets for reaching knowledge levels of 'HIV prevention and treatment and blood donation' of 85% of school students by 2007 and 95% by 2010; for out-of-school young people, targets were set at 65% in 2007 and 75% by 2008. Separately, the government set 'effective intervention measurement' targets for 'the floating population and people engaging in high-risk behaviours' of 70% in 2007 and 90% by 2010. The Action Plan includes increased needle exchange and condom use of 'people with high risk behaviour', which mentions injecting drug users but not sex workers or men who have sex with men explicitly.

It should be noted that unlike Lao PDR, coverage targets were not based on immediate epidemiological need, but on what was considered to be realistic; it is easier to reach adolescents and young people in school than those out-of-school or those who are engaging in high-risk behaviours. As such, the coverage targets in schools are higher than those for out-of-school. Despite being ambitious in terms of the targets it sets (hundreds of millions of people with information within three years), this strategy is inefficient from the epidemiological point of view; it will take a huge effort to educate people who are extremely unlikely to be exposed to HIV and while the strategy addresses injecting drug use, and unsafe blood donation and transfusion practices, it ignores two behaviours that are already significantly contributing to the spread of HIV in China: unsafe sex in the context of sex work and male-to-male sex.

Vietnam

The National Strategy on HIV/AIDS Prevention and Control until 2010 with a vision to 2020 of the Socialist Republic of Vietnam is even more ambitious than the Chinese plan; it sets a 100% coverage target for 'people's knowledge about prevention of HIV transmission' in urban areas by 2010, and 80% for people living in rural and mountainous areas. Furthermore, 100% of people with risk behaviours will be covered by comprehensive harm reduction intervention measures. For example IDUs will be provided disposable injections and condoms distributed to those 'having risky sex.'

Whereas the policy speaks of 'drugs and prostitution prevention' in one clause, in another it appears to acknowledge the need to work 'with high-risk behaviour groups' towards behaviour change, through education and communication activities. Integration of HIV prevention into school curricula is also mentioned as a main objective. In contrast to China, sex workers are explicitly mentioned in the strategy as a 'community' to be engaged – as are injecting drug users. However, as in China, and despite the recent finding of 9.4% HIV prevalence among this group in Hanoi, men who have sex with men are absent from the strategy.

[70] National Committee for the Control of AIDS (2005), *National Strategic and Action Plan on HIV/AIDS/STI 2006-2010*. Vientiane, Lao PDR, July 2005.

In Vietnam, the legal framework related to children affected by HIV/AIDS was reviewed in 2005. One of its recommendations was to increase the legal upper age of childhood from 16 to 18 years old, in line with international practice. It also calls on the government to stop mandatory counselling and testing, and to stop the practice of confinement of drug users under 18 and sex workers in adult rehabilitation centres.[71]

Cambodia

In Cambodia, UNAIDS supported the National AIDS Authority to conduct an assessment and audit of policies on HIV/AIDS. It was reported that as of January 2007, a total of ten ministries had developed a policy document on HIV/AIDS; eight sectoral strategies for HIV/AIDS and 26 policy documents were identified. No other country in the region has such a well-developed policy framework. The report says that 'the high level of policy development in relation to NSP II commitments and Universal Access indicators suggests that the major focus of work needs to be not so much on policy development but more on implementation.'

Table 2.1A: Cambodian non-health related policy documents on young people

Line Ministry	Policy document
Ministry of Social Affairs, Veterans and Youth Rehabilitation	– Policy on Alternate Care for Children (04/2006) – Minimum Standards for Substitute Care (draft) – National Orphans and Vulnerable Children Action Plan (being drafted)
Ministry of Education, Youth and Sports	– School Health policy (08/2006) – Life Skills Education policy (draft) – Youth Policy (draft)
Ministry of Labor and Vocational Training	– Law (*parkas*) on creating HIV/AIDS committees in enterprises and establishments and Managing HIV/AIDS in the work place (09/2006) – Missing: public work place policies for HIV/AIDS
Ministry of Public Works and Transport	– Policy on HIV/AIDS and Prevention in the Public Works and Transport Sectors (08/2006) – *Prakas* on education of HIV/AIDS, safe migration and labour rights for Cambodian workers abroad (08/2006)
National Center for Drug Control	– Whole range of guidelines for needle and syringe programs, substitution therapy and treatment are under development – Missing: law enforcement and drugs guidelines
Ministry of Women's Affairs	– Policy on women and girls and STI/HIV/AIDS – Role of MWA versus other ministries unclear
Ministry of National Defence	– Sectoral strategy exists – Implementation plan under development
Ministry of the Interior	– No policies in place

Source: National AIDS Authority, *Cambodia HIV/AIDS Policy Assessment and Audit*. Draft Report, January 2007

[71] Ministry of Labor, Invalids and Social Affairs and UNICEF (2005), Hanoi, *Children affected by HIV/AIDS in Viet Nam: A Legal Review.* Hanoi, April 2005

The Cambodian Law on the Prevention and Control of HIV/AIDS is an overarching legal framework that was found to be one of the key instruments for creating legislation for an enabling environment for HIV/AIDS programmes. It includes three types of provision: those dealing with public health policy, those dealing with social sector policy and those dealing with programme commitments.

Despite this range of policies – many developed long after programmes began to be implemented – some important gaps remain, especially the fact that there is no policy on harm reduction in relation to law enforcement (at a time when injecting drug use, previously unheard of in Cambodia, appears to be on the rise), and no specific government policy statement on men having sex with men and HIV/AIDS/STIs (at a time when HIV prevalence among Phnom Penh men who have sex with men exceeds 8%, according to a recent survey.[72] In the education sector, a school health policy was completed in August 2006 and a youth policy and lifeskills education policy exist in draft form.

International policy documents and declarations

Several international declarations have been adopted by most member states of the United Nations over the past decade. These include:

1. The UN Convention on the Rights of the Child (CRC):
    - CRC affirms 'the right of the child to the enjoyment of the highest attainable standard of health,' the right to education and to be free from all forms of exploitation.
    - CRC general comment no.3 compels governments who are signed up to it to give children and adolescents (between the ages of 10 and 17) access to 'adequate information related to HIV/AIDS prevention and care.'
2. The Millennium Development Goal on HIV/AIDS (MDG):[73]

    By 2015, halt and begin to reverse the spread of HIV/AIDS (using the prevalence of HIV among pregnant women aged between 15 and 24 as an indicator).
3. The UN General Assembly Special Session on Children:

    Develop and implement national health policies and programmes for adolescents, including goals and indicators, to promote their physical and mental health.
4. The UN General Assembly Special Session on HIV/AIDS:
    a. By 2005, ensure that at least 90% (and by 2010, 95%) of young people have access to the information they need to reduce their vulnerability to HIV;
    b. By 2005, ensure that at least 90% (and by 2010, 95%) of young people have access to the skills they need to reduce their vulnerability to HIV;
    c. By 2005, ensure that at least 90% (and by 2010, 95%) of young people have access to the services they need to reduce their vulnerability to HIV;
    d. By 2003, develop or strengthen strategies, policies and programmes that reduce the vulnerability of children and young people;
    e. By 2005, HIV prevalence among young people (aged between 15 and 24 years) is reduced by 25% in the most affected countries, and by 2010 reduce prevalence by 25% globally.

[72] NCHADS/FHI (2007), *Cambodia STI Prevalence Survey*. Phnom Penh

[73] http://www.un.org/millenniumgoals/

5. The Kathmandu High Level Regional HIV/AIDS Declaration (2003) affirmed existing commitments (MDG and UNGASS) and called to 'break the silence and denial,' urging more leadership in responses with 'the most vulnerable groups and young people.'

6. The SAARC HIV/AIDS Regional Strategy and Implementation Plan, 2006–2010. This strategy:

   a. Mentions 'a large youth and other vulnerable population' in the SAARC region as one of seven issues to be addressed;

   b. Encourages member countries to engage civil society, including youth and media leaders.

7. Operational Work Plan of the Third Asian Work Programme on HIV and AIDS 2006–2010 (AWP III) Objective 8: 'Reducing vulnerability to HIV transmission' – groups identified include 'young people out-of-school, young sex workers, young men who have sex with men, young drug users, and orphans and other vulnerable children.'

In conclusion, it can be seen that none of the above countries, with the exception of Pakistan, have policies to respond to the age- and gender-specific HIV prevention needs of young people, let alone make a distinction between different levels of vulnerability and risk. Policies that exist either address the HIV prevention needs of adults or the general population, or they address youth without giving specific guidance for fulfilling the HIV prevention, care and support needs for those engaging in high-risk behaviours, or for those who are especially vulnerable.

With the exception of Pakistan and Lao PDR, none of the other countries reviewed in this section have made an explicit division of young people into subgroups based on their HIV risk or vulnerability. Vietnam and China do make a division, but ignore male-to-male sex as a main epidemic driver and focus for programming. If coverage of prevention services for young people at high risk is to be increased and if quality is to be improved, countries should consider developing specific HIV-prevention policy documents for young people. Such documents should be jointly authored and adopted by stakeholders including the Ministries of Health, Education, Youth and Sports, Social Welfare and the Ministry of the Interior.

Many National Strategic Frameworks for HIV reviewed for this paper did mention most-at-risk populations and young people separately (including those of Nepal, Vietnam, China and Lao PDR) but they fail to recognise that significant numbers of people at high risk *are* young people.

This raises difficult questions for policymakers, who often struggle to formally accept the existence of (adult) sex work, injecting drug use and male-to-male sex in their country – and now have to deal with the fact that a proportion of young people (often defined by law as 'children') are engaged in these behaviours, and are endangering their health as a result.

NOTE 2 B

Table 2.1B: Estimated financial assistance needed to support orphans and vulnerable children in Asia (Million US$/year)

	No. of children (thousand)	Using Vietnam as benchmark (US$ 76.8/year)[1]	Using Thailand as benchmark (US$ 407/year)[2]	Grant 5 US$ /month	Grant 10 US$ /month	Grant 15 US$ /month	Grant 5 US$ /month
Children affected by HIV and AIDS	7,874	604.72	3205.70	472.44	944.88	1417.32	742.01
Children orphaned by AIDS	1,409	108.21	573.64	84.54	169.08	253.62	132.78
Orphans in poverty Q1-Q3	**49,554**	**3,805.76**	**20,174.72**	**2973.25**	**5,946.50**	**8,919.75**	**4669.75**
Double orphans	***3,472***	***266.64***	***1413.50***	***208.31***	***416.63***	***624.94***	***327.18***
Recent orphans < 2 years'	1,024	78.67	417.04	61.46	122.92	184.38	96.53
Young orphans 0–4 years	219	16.82	89.18	13.14	26.29	39.43	20.64
Orphans 5–9 years	279	21.39	113.39	16.71	33.42	50.13	26.25
Orphans 10–14 years	527	40.46	214.46	31.61	63.21	94.82	49.64
Non-recent orphans > 2 years'	2,448	187.97	996.46	146.85	293.71	440.56	230.65
Young orphans 0–4 years	58	4.45	23.59	3.48	6.95	10.43	5.46
Orphans 5–9 years	503	38.59	204.59	30.15	60.30	90.46	47.36
Orphans 10–14 years	1,887	144.93	768.28	113.23	226.45	339.68	177.83
Single orphans: paternal orphans	***30,217***	***2320.64***	***12301.95***	***1813.00***	***3626.00***	***5439.00***	***2847.48***
Recent orphans < 2 years'	9,931	762.66	4042.95	595.83	1191.66	1787.49	935.81
Young orphans 0–4 years	2,848	218.70	1159.35	170.86	341.72	512.58	268.35
Orphans 5–9 years	3,034	233.01	1235.23	182.04	364.09	546.13	285.91
Orphans 10–14 years	4,049	310.95	1648.37	242.93	485.86	728.79	381.54
Non-recent orphans > 2 years'	20,286	1557.98	8259.00	1217.17	2434.34	3651.51	1,911.67
Young orphans 0–4 years	753	57.85	306.67	45.19	90.39	135.58	70.98
Orphans 5–9 years	5,306	407.47	2160.04	318.34	636.67	955.01	499.97
Orphans 10–14 years	14,227	1092.66	5792.29	853.64	1707.28	2560.92	1,340.72
Single orphans: maternal orphans	***15,866***	***1218.48***	***6459.27***	***951.93***	***1903.87***	***2855.80***	***1495.10***
Recent orphans < 2 years'	5,026	385.97	2046.07	301.54	603.08	904.62	473.59
Young orphans 0–-4 years	1,283	98.53	522.34	76.98	153.96	230.94	120.90
Orphans 5–9 years	1,548	118.85	630.04	92.85	185.70	278.56	145.83
Orphans 10–14 years	2,195	168.58	893.68	131.71	263.41	395.12	206.86

Note: This table presents total regional costs based on the differing monthly payments to each of the target groups (CABAs, single and double orphans). In the last column the total regional costs are based on a mix of five or ten dollars per month, per child, based on the level of the price index of the respective country.

1. Viet Nam provides cash transfers to orphans without any rearing source and children with multiple disabilities, VN$ 100,000 per month (exchange rate VN$ 15,622: US$ 1).
2. For Thailand, the figure is based on data from a socio-economic survey of households in 2006: that a poor family with children below 14 years of age – which per capita family income is +/- 10% of the poverty line – has consumption expenditure per child at US$ 407 per year (exchange rate THB 33.35: US$ 1). This consumption expenditure consists of food and other items, for example: clothes, shelter, transportation, fuel, household goods, personal care, medical care, communication and education.
3. Some donors or international NGOs provide orphans in Africa with US$ 5–10 per month.

3
Economy

CHAPTER SUMMARY

The first section of Chapter Three seeks to address an important question: what are the poverty implications of the HIV epidemic in Asia? More specifically, will the epidemic undermine achievement of the Millennium Development Goals related to poverty?

Much of Asia has achieved remarkable and sustained economic growth which has, in turn contributed to significant reductions in income poverty. For example, the number of extreme poor in Asia, those living on less than one dollar a day, has fallen from 945 million in 1990 to 604 million in 2005, or from 34.6% to 18%. But many challenges remain, and it is clear from recent history that economic growth and poverty reduction can be interrupted from any number of quarters: the Asian financial crisis of 1997; the tsunami; oil price increases; and droughts and earthquakes

The incidence of catastrophic illness in general, and specifically those associated with AIDS morbidity and mortality is, however, a possible obstacle to the spectacular poverty reduction achievement within the region. Little is known about how much of a constraint HIV is against attaining poverty reduction targets, as much of the literature on the socioeconomic impacts of AIDS has focused on national or macroeconomic indicators.

Some studies have forecast that **6 million people per year across Asia will fall below poverty as a** result of AIDS. A study in Viet Nam found that AIDS-related poverty could result in around half a million people in the country falling into, or being driven deeper into poverty, by 2015.

At the same time recent Demographic and Health Surveys have shown that HIV incidence tends to be higher amongst wealthier sub-populations in key countries of the region and the numbers of people living with HIV have been reduced using the results of these population-based surveys. In light of this recent data, it is unclear whether AIDS poses a major hurdle for countries in attaining poverty reduction targets such as those enshrined in the Millennium Development Goals (MDGs).

The major objectives of this study are to quantify the poverty impacts of an escalating HIV crisis in Asia using secondary data and provide information about how much of a burden HIV will be to attaining poverty reduction targets in the region if the epidemic is not adequately controlled. Specific objectives include:

- Reviewing the poverty situation in Asia, and outlining a poverty measurement methodology in relation to HIV;
- Presenting income effects associated with AIDS, focusing on the reduction in income for people living with HIV spanning economic segments of the community;

- Assessing household impacts of the AIDS epidemic by simulating the impact of HIV-related income effects on households with PLWHA;
- Present national HIV infection and AIDS deaths forecasts for Asia using the Asian Epidemic Model assuming there is a lack of investment in AIDS care and prevention;
- Estimating the marginal and aggregate impact of AIDS on poverty between 2005 and 2015, using India, Indonesia, China, Thailand, Cambodia, and Viet Nam, as case studies;
- Analyse the impact of AIDS on poverty reduction efforts and specifically its effect on the achievement of Millennium Development Goal 1 (to reduce by half the number of people living in poverty between 2000 and 2015); and
- Recommending interventions in light of the poverty assessment and pointing out further research needs in this field of analysis.

The second section of Chapter One deals with the growing gap between availability of funds and the resources needed by countries to come up with a comprehensive response to the HIV epidemic.

Although there has been a major increase in external funding available to countries for responding to their HIV epidemics, domestic investment has not grown at a similar pace.

Medium- to long-term sustainability of programmes may be compromised if they are dependent on funding flows not controlled by national Governments.

Prior to the early 2000s, limited data was available as to where resource allocation would be most effective and the dividend from action, in terms of prevented HIV incidence, reduced household financial burden and overall economic considerations for a country, were also not clearly defined.

Facing this kind of scenario, development experts need to describe in greater detail the kind of impact AIDS will have on societies and the development of countries in the region. With this in mind, the burden of disease, financial and economic implications of AIDS in Asia are defined in this paper.

Key elements of the analysis include an exploration of the socio-economic composition of the infected and affected populations and the impact of the epidemic on them at the household, community, workplace and societal levels; and an assessment of the impact of the epidemic on governments with regard to allocation of limited resources to health budgets, strain on existing health systems, and diversion of resources from priority areas of social and economic development.

3.1 POVERTY IMPLICATIONS OF HIV IN ASIA[1]

Ross Mcleod, Robert Greener, Tim Brown, Nalyn Siripong and Swarup Sarkar

3.1.1 Introduction

3.1.1.1 Objective

The major objectives of this study are to quantify the poverty impacts of an escalating HIV crisis in Asia using secondary data and provide information about how much of a burden HIV will be to attaining poverty reduction targets in the region if the epidemic is not adequately controlled. Specific objectives include:

- Reviewing the poverty situation in Asia, and outlining a poverty measurement methodology in relation to HIV;
- Presenting income effects associated with AIDS, focusing on the reduction in income for people living with HIV spanning economic segments of the community;

[1] Based on the paper *'Poverty implications of HIV in Asia'* by the same authors. The paper was supported by the Asian Development Bank.

- Assessing household impacts of the AIDS epidemic by simulating the impact of HIV-related income effects on households with PLWHA;
- Present national HIV infection and AIDS deaths forecasts for Asia using the Asian Epidemic Model assuming there is a lack of investment in AIDS care and prevention;
- Estimating the marginal and aggregate impact of AIDS on poverty between 2005 and 2015, using India, Indonesia, China, Thailand, Cambodia, and Viet Nam, as case studies;
- Analyse the impact of AIDS on poverty reduction efforts and specifically its effect on the achievement of Millennium Development Goal 1 (to reduce by half the number of people living in poverty between 2000 and 2015); and
- Recommending interventions in light of the poverty assessment and pointing out further research needs in this field of analysis.

3.1.1.2 Approach and methodology

A three-step method has been employed to estimate the poverty ramifications of HIV incidence in the above-mentioned selected countries of the region. First, vulnerable households that could fall into poverty if the key income provider were to become infected and succumb to the affects of AIDS are defined. Households are divided into five equal population segments, or quintiles, based on income. Then, the affects of a reduction in income resulting from AIDS death and reduced household income are estimated. Surveys of AIDS-affected and -unaffected households have been conducted in northern Thailand[2], Cambodia[3], Viet Nam[4] and India[5] have been used to identify the impact of AIDS on households within various wealth quintiles.

Box 3.1: Estimating impact of HIV on poverty

Impact on households

The impact of AIDS on a typical household in each income quintile is estimated using survey data from across the region. In the adjoining example, it is evident that AIDS has a dramatic impact in the 2nd poorest quintile to push households below the income poverty line, of US$1 per day. In the case of the higher income quintiles, the reduction in income is not sufficient to push a household into poverty, whereas in the poorest quintiles households fall deeper into poverty.

Socio-economic distribution of HIV infection

HIV infection is forecast at a national level from 2001–2015 using estimates from the Asian Epidemic Model and then split into each of the five income quintiles based on currently observed patterns of infection in relation to wealth. It is apparent that HIV infection is proportionally larger in higher wealth quintiles, as wealthier men have a higher utilization of commercial sex work. Incidence is however, significant within the middle and other quintiles where vulnerable households will fall below poverty lines in the event of infection.

[2] Pitiyanon, S., S. Kongsin, and W.S. Janjaroen (1997). The Economic Impact of HIV/AIDS Mortality on Households in Thailand. In *The Economics of HIV and AIDS: the case of South and South East Asia*, edited by D. Bloom and P. Godwin. Dehli: Oxford University Press

[3] Alkenbrack, S., Chettra, T., and Forsythe, S (2004). The Social and Economic Impact of HIV/AIDS on Families with Adolescents and Children in Cambodia, Findings from a Research Study in Phnom Penh, Battambang and Takeo, USAID, Policy Project.

[4] UNDP and AusAid (2005) Impact of HIV/AIDS on Household Vulnerability and Poverty in Viet Nam, Report of Project VIE/98/006, Hanoi.

[5] Pradhan, B.K., Sundar, R. and Singh, S.K. (2006). Socio Economic of HIV/AIDS in India, UNDP, 2006.

National HIV poverty

The annual number of vulnerable households forecast to fall below poverty are estimated. By multiplying households affected by average household size, the total population backsliding into poverty is estimated. It is assumed that incomes in AIDS-affected households normalize after 5 years, and aggregate estimates are adjusted after this period to capture this lag. Country level estimates are aggregated to generate regional totals and compared against poverty reduction targets for Asia.

Using this information, the vulnerability of a household can be estimated and households likely to backslide into poverty as a result of AIDS-related illness identified. Secondly, the pattern of HIV incidence according to economic status has been forecast using national projections of HIV infection across India, China, Indonesia, Viet Nam, Cambodia and Thailand. Current levels of prevalence within each economic strata, or quintile, have been used to determine the share of future HIV incidence amongst the various economic strata. By estimating how infection will fall among different groups, the number of affected vulnerable households can be calculated.

Thirdly, the numbers of people within each vulnerable household affected by HIV and the duration of the affect are calculated to determine aggregate cumulative AIDS-related poverty within each of the case study countries. The numbers of people estimated to be subject to AIDS induced poverty are aggregated to determine regional estimates of AIDS-poverty in 2015. These estimates can be compared to the numbers of people that have to move above international poverty lines to achieve Millennium Development Goals. This comparison is used to determine how substantial AIDS is as an obstacle to achieving poverty reduction targets.

3.1.2 Poverty in Asia

3.1.2.1 Poverty trends

Global poverty, as measured by the number of people living below US$1 per day, decreased from 28 per cent in 1990 to 19 per cent in 2002. United Nations[6] suggests that if economic growth is sustained in developing countries, global poverty will fall to 10 per cent by 2015. However, more than 600 million people will still be living in poverty, primarily in sub-Saharan Africa and South Asia. Despite pockets of poverty within the region, overall regional poverty reduction in Asia has been significant. One study[7] noted that in the early 1970s more than half of Asia's population was poor. Between 1990 and 2002, this had decreased from 900 to 688 million people.

Box 3.2: International Poverty Line[8]

The international poverty line is based on a level of consumption representative of the poverty lines found in low-income countries. Since 2000, the international poverty line has been set at US$1.08 a day, or US$393 per person per year, measured in terms of 1993 purchasing power parity (PPP).

[6] United Nations Department of Economic and Social Affairs 2006, 2007. The Millennium Development Goals Report 2006 and 2007. UN.

[7] Chatterjee, S. (2005). Poverty Reduction Strategies–Lessons from the Asian and Pacific Region on Inclusive Development, Asian Development Review. Volume 22 No.1, ADB

[8] United Nations ESCAP, UNDP and ADB, 2006. Millennium Development Goals: Progress In Asia And The Pacific 2006, UN, Bangkok.

3.1.2.2 International poverty lines

The percentage of the population living on less than US$1 per day is referred to as the head count ratio. The proportion of the populations living below US$1 per for selected Asian countries are outlined in Table 3.1 using estimates provided by the World Bank PovCal Net database. Estimates are not available for each year. Wherever data are available they are included in the table.

Poverty head count ratios are falling for all selected countries in the study. In 1996, Cambodia, China, Indonesia and Thailand were estimated to have poverty head counts of 82, 17, 14 and 2 per cent respectively. The number of poor has fallen substantially to 66 per cent in the case of Cambodia, 10 per cent for China and nearly zero for Thailand. Sustained income growth has been a key driver of poverty reduction in the region although income inequality has increased in association with growth, dampening the poverty reducing impact[9]. Poverty reduction has not been as high in India, with average national head count decreasing from 44 per cent in 1997 to 34 per cent in 2004. Economic growth has, until recently, not been as spectacular in India when compared to East Asia.

Table 3.1: Poverty head count (US$1 PPP 1993 per day)

Head count	1996	1997	1998	1999	2000	2001	2002	2003	2004
Cambodia	82.0	—	—	—	—	—	—	—	66.0
China	17.2	16.3	16.3	17.8	—	—	13.8	—	9.9
Indonesia	14.1	—	25.3	7.6	7.2	—	7.8	—	3.9
India	—	44.3	—	35.7	—	—	—	—	34.3
Thailand	2.2	—	—	2.0	2.0	—	0.9	—	—
Viet Nam	—	—	3.8	—	—	—	1.8	—	0.6

Source: World Bank (June 2007), PovCalNet, research.worldbank.org/PovcalNet/jsp/index.jsp

The populations living below US$1 per day in Cambodia, China, Indonesia, India, Thailand and Viet Nam are outlined in the following table over the 1996–2004 period using the PovCal Database. Despite decreases in head count ratios, the largest poor populations are found in China and India which results from the large sizes of these countries. Only small pockets of income poverty are estimated for Viet Nam and Thailand.

Table 3.2: Population below US$ 1 expenditure per day (million people)

Head count	1996	1997	1998	1999	2000	2001	2002	2003	2004
Cambodia	8.5	—	—	—	—	—	—	—	9.1
China	209.7	199.9	202.1	222.9	—	—	176.6	—	128.4
Indonesia	27.6	—	52.9	15.4	14.8	—	16.5	—	8.4
India	—	427.7	—	357.5	—	—	—	—	370.7
Thailand	1.3	—	—	1.2	1.2	—	0.6	—	—
Viet Nam	—	—	2.9	—	—	—	1.4	—	0.48

Source: World Bank (June 2007), PovCalNet, research.worldbank.org/PovcalNet/jsp/index.jsp. A range of headcount ratios are reported for Cambodia. PovCal net indicate 66% of the population was below US$1 per day (PPP) in 2004, whilst World Development Indicators suggest 34% in 1994.

[9] Asian Development Bank. (2007). *Key Indicators 2006*, Manila.

3.1.2.3 Millenium Development Goals

The Millennium Development Goals are often used to measure development progress, with the first target being one of halving the proportion of people whose income is less than one dollar a day (between 1990 and 2015). Achieving the target appears to be on track in East Asia, but progress has been uneven. The proportion of the population living below the poverty line has fallen from 29.6 per cent in 1990 to 11.6 per cent in 2002. In contrast, South Asia is still home to 47 per cent of the world's poor living on less than US$1 a day[10]. Particularly within South Asia, economic growth and measures to improve poverty reduction need to be adopted for MDG poverty targets to be achieved. With the exception of one or two countries, the Asia-Pacific region is on track to achieve the large majority of MDG targets.[11]

3.1.3 Household impacts of AIDS

The first step of the simulation method involves the identification of which households in Asia would be vulnerable to backsliding into poverty should a household member succumb to AIDS morbidity and mortality. Poverty reduction in Asia has been dramatic, yet there are still households that would backslide into poverty in the event that a catastrophic event reduced household income in such as way to push household members below US$1 per day income consumption. A range of surveys have been undertaken to identify how the virus impacts upon the economics of an affected household. These surveys are described and a framework for estimating how AIDS differentially affects households amongst the various economic strata of the economy is presented.

3.1.3.1 Impact of AIDS-related death on household income

For the first 5 years following HIV infection, an affected household member might not know of his or her HIV status, and could continue working until AIDS develops and reduces productivity. Following this phase, the symptoms could result in this person being incapable of working. During this period of illness and following mortality, the loss of income and the cost of caring for a family member might impoverish a household.

Studies in Asia document reduced levels of household consumption following HIV infection and AIDS. For example, a household impact study[12] in northern Thailand found the loss of income from the deceased family member was the largest of the economic costs of an AIDS-related death. The negative impact of AIDS on household incomes has been documented in Cambodia, India and Viet Nam.

Clearly, AIDS has a dramatic impact in the 2nd poorest quintile to push households below the poverty line. In the case of higher income quintiles, the reduction in income is not sufficient to push a household into poverty, whereas in the poorest quintiles, households fall deeper into poverty.

[10] United Nations Department of Economic and Social Affairs 2006, 2007. The Millennium Development Goals Report 2006 and 2007. UN.

[11] United Nations ESCAP, UNDP and ADB (2006). Millennium Development Goals: Progress In Asia And The Pacific 2006, UN, Bangkok.

[12] Pitiyanon, S., Sukontha Kongsin, and Wattana S. Janjaroen (1997). "The Economic Impact of HIV/AIDS Mortality on Households in Thailand" in Bloom, D. and Godwin, P. (eds.) The Economics of HIV and AIDS: the case of South and South East Asia, Oxford University Press, Delhi

There are a range of estimates of economic impact from surveys across the region. In Cambodia a 42% reduction was observed,[13] whereas in India only a 9% reduction was observed.[14] In the case of India, most survey respondents only had early stage AIDS, but were showing no signs of AIDS-related illness. For Thailand, illness resulted in income decreasing by 83% for the major income earner[15] and 47.5% reduction in family income. An average per household income loss of 50% is assumed for an AIDS-affected household. Given the wide range in the order of this parameter, the sensitivity of simulation results to changes in key variable such as this is provided in Note 3A.

3.1.3.2 Household vulnerability to AIDS-poverty

The per person impacts of a decrease in household income for a typical household affected by AIDS in each of the five economic quintiles in Cambodia, China, India, Indonesia, Thailand and Viet Nam are calculated in the following sets of tables, beginning with Cambodia. The population distribution and income share per quintile are outlined in the top part of the table, along with the calculation of gross national income share from the lowest to highest wealth quintiles. These estimates are derived from World Bank HNP database population statistics and income share estimates from PovCalNet. From these estimates, per capita and per household income estimates can be calculated in the absence of AIDS.

Table 3.3: Cambodian households vulnerable to poverty due to AIDS death

	Quintile					**Total**
	Low	Second	Middle	Fourth	High	
Cambodia						
Population (million)	2.8	2.8	2.8	2.8	2.8	13.8
Share of GNI (%, 2004)	6.6	9.7	13.6	19.9	50.3	100.0
Gross national income (PPP US$ million)	397.1	580.6	818.2	1,196.6	3,025.6	6,016.0
Households per quintile (million)	0.5	0.5	0.5	0.5	0.5	2.7
Without AIDS						
Income per household (PPP USUS year)	748	1,094	1,542	2,255	5,700	2,268
People per household	5.2	5.2	5.2	5.2	5.2	5.2
Income per Capita (PPP US$ year)	144	210	296	434	1,096	436
With AIDS death						
Income Household (AIDS, PPP US$ year)	374	547	771	1,127	2,850	1,134
People per Household	4.2	4.2	4.2	4.2	4.2	4.2
Income per Capita (AIDS, PPP US$ year)	89	130	184	268	679	270

[13] Alkenbrack, S., Chettra, T. and Forsythe, S 2004. The Social and Economic Impact of HIV/AIDS on Families with Adolescents and Children in Cambodia, Findings from a Research Study in Phnom Penh, Battambang and Takeo, USAID, Policy Project.

[14] Pradhan, B.K., Sundar, R. and Singh, S.K. (2006) Socio Economic of HIV/AIDS in India, UNDP, 2006.

[15] Pitiyanon, S., Sukontha Kongsin, and Wattana S. Janjaroen (1997). "The Economic Impact of HIV/AIDS Mortality on Households in Thailand" in Bloom, D. and Godwin, P. (eds.) The Economics of HIV and AIDS: the case of South and South East Asia, Oxford University Press, Delhi

In the absence of AIDS, it is estimated that per capita and per household income in the lowest Cambodian quintile are US$144 and US$748 respectively. This increases to US$1 096 and US$5 700 per person and per household in the highest wealth quintile. In the event that a typical household in the lowest quintile suffered an AIDS death and consequent income loss, income per household would decrease from US$748 to US$374 per year. On a per capita basis, (allowing for the death of the AIDS-sufferer) income per person would decrease from US$144 to US$89 per person. This income impact would further plunge a household in the lowest wealth quintile further into poverty. In the case of a typical household in the fourth quintile, the household would fall from above the US$1 per day line (US$393 per person per year) to below the poverty line. This quintile is shaded to indicate that a 50% household income reduction would backslide a typical household into poverty.

Health expenditure implications are not considered in the poverty simulation. UNDP and AusAid[16] cite a number of studies which estimate health expenditure implications of HIV and AIDS. One global review[17] found the annual expenditure for health care by affected households was US$1 000, whereas in Asia the cost of medical care was US$837[18] and US$1,335[19] in Thailand. The cumulative healthcare expenditure for a household with a recent AIDS fatality was found to be $540 in Vietnam.[20] Such estimations of impact assume that antiretroviral treatment is not widely available. Many studies have shown that those people on ART are able to prolong life and improve quality of life so that people living with HIV can lead healthy and normal lives. Currently, drugs are quite expensive and coverage remains low.

When compared to income impacts, however, health expenditure escalation represents a smaller part of overall household costs. A study by Bloom and Mahal[21] estimated that lost lifetime earnings due to an AIDS death in Sri Lanka and in India, were estimated to be more than ten times the annual treatment costs of AIDS. Another study[22] calculated that 95% of total AIDS mortality cost was found to be associated with reduced income in surveyed northern Thai households.

A similar process is followed for each case study country. Households in the lowest (poorest) quintile of China, Viet Nam, Thailand and Indonesia with an AIDS death or loss are estimated to fall below the US$ 1 per day poverty line as a result of the income effects of AIDS. Households within the second and middle quintiles in India are estimated to fall below the poverty line in the event that a member becomes infected and succumbs to the affects of AIDS.

Indian households within the lowest and second quintile would fall into deeper poverty in the event that the household became affected. Few studies have tracked the income implications of AIDS on a household over an extended period. The decrease in income in affected households is probably most severe in the months before the death of a family member and the following year. During this period, the time devoted to care, as well as the lack of capacity for employment by the affected individual,

[16] UNDP and AusAid (2005) Impact of HIV/AIDS on Household Vulnerability and Poverty in Vietnam, Report of Project VIE/98/006, Hanoi.

[17] McGreevey, W., Bertozzi, S., Gutierrez, J., Opumi, M. and Izazola, J.: "Current and Future Resources for HIV/AIDS", State of the Art: AIDS and Economics. POLICY Project, The Futures Group International: Washington, D.C, 2002

[18] Viravaidya M. et al (1993) 'The economic impact of AIDS on Thailand' in 'Economic Implications of AIDS in Asia' edited by Bloom D.E. and Lyons J.V., p.9

[19] Bloom D. et al. 2002. Health, wealth, AIDS and poverty. Cambridge: Harvard School of Public Health www.adb.org/Documents/Reports/Health_Wealth/HWAP.pdf

[20] UNDP and AusAid (2005) Impact of HIV/AIDS on Household Vulnerability and Poverty in Vietnam, Report of Project VIE/98/006, Hanoi.

[21] Bloom D, and Mahal A. (1996) Economic implications of AIDS in Asia. Draft. New York, NY: Columbia University, Department of Economics

[22] Pitiyanon, S., S. Kongsin, and W.S. Janjaroen. 1997. The Economic Impact of HIV/AIDS Mortality on Households in Thailand. In The Economics of HIV and AIDS: the case of South and South East Asia, edited by D. Bloom and P. Godwin. Dehli: Oxford University Press.

is most acute. A key study[23] in southern Africa has investigated the temporal dimensions of AIDS on household economics. The study found that income had come to normalize within one year (at 6 months) in households that had an HIV-infected member at study commencement, when compared to income in an unaffected neighbouring household. The study noted that income affects in the study were marginally non-significant, although likely to take longer than a year to occur. It is unclear in which income quintiles the survey affected households belonged. It could be argued, for example, that houses that are near to poverty would take a much greater period of time to return to income security when compared to affected households in wealthier quintiles.

For the simulation analysis in this report, it is assumed that near-poverty line households affected by AIDS experience income loss for 5 years before income normalization. It should be noted that these estimate assume that only one household member is HIV-infected, a phenomenon typically observed in the early stages of a concentrated epidemic. Additionally, ARV drugs are not widely available in most settings. National HIV projections which are described in the next chapter are associated with limited prevention and care activities scenarios within each of the case study countries. In the event that drugs and prevention were to be comprehensive, a revised projection of national HIV incidence would be required. In this case, HIV rates of infection are far lower than those outlined in this report. National incomes are increasing across much of Asia and the average national incomes outlined for the current base year, along with shares of income by quintile will change by 2015. Given that most poverty vulnerable households are within the lowest quintile, this means that the potential number of households that will be vulnerable to AIDS poverty in 2015 will be reduced for countries where vulnerable households are only found in the lowest economic quintile. Projections of the percentage of households that are vulnerable households are averages for the projection period and recognize national incomes are increasing the economic growth and the probability of HIV infection falling upon vulnerable households is dynamic[24].

[23] Bachmann, M.O., and F.L.R. Booysen (2003). Health and Economic Impact of HIV/AIDS on South African Households: A Cohort Study. *BMC Public Health* 3 (2003):14–21.

[24] Economic growth in Cambodia and India will result in households that are currently below the poverty line becoming vulnerable to backsliding into poverty. The vulnerability of households under an increased by capita income scenario is provided in Note 3B for Cambodia to demonstrate which households within the quintile-stratified economy will be vulnerable to AIDS in 2015

Table 3.4: Chinese and Indonesian households vulnerable to poverty due to AIDS death

	Quintile					Total
	Low[25]	Second	Middle	Fourth	High	
China						
Population (million)	259	259	259	259	259	1,295
Share of GNI* (%, 2004)	7.3	11.4	15.6	21.6	44.0	100
GNI (PPP US$ million)	163,647	255,516	350,413	484,970	985,603	2,240,150
Households per quintile (million)	81	81	81	81	81	403
Without AIDS						
Income per household (PPP US$ year)	2,028	3,167	4,343	6,011	12,215	5,553
People per household [2]	3.2	3.2	3.2	3.2	3.2	3.2
Income per capita (PPP US$ year)	632	987	1,353	1,872	3,805	1,730
With AIDS death						
Income household (AIDS, PPP US$ year)	1,014	1,583	2,171	3,005	6,108	2,776
People per household	2.2	2.2	2.2	2.2	2.2	2.2
Income per capita (AIDS, PPP US$ year)	459	493	676	936	1,903	894
Indonesia						
Population (million)	44	44	44	44	44	218
Share of GNI (%, 2004)	7.9	11.7	15.8	21.7	43.0	100
GNI (PPP US$ million)	20,104	29,699	40,081	54,955	109,022	253,835
Households per quintile (million)	10	10	10	10	10	51
Without AIDS						
Income per household (PPP US$ year)	1,986	2,934	3,960	5,430	10,772	5,017
People per household	4.3	4.3	4.3	4.3	4.3	4.3
Income per capita (PPP US$ year)	462	682	921	1,263	2,505	1,167
With AIDS death						
Income household (AIDS, PPP US$ year)	993	1,467	1,980	2,715	5,386	2,508
People per household	3.3	3.3	3.3	3.3	3.3	3.3
Income per capita (AIDS, PPP US$ year)	301	445	600	823	1632	760

* GNI= Gross National Income

[25] In the case of China, only lower income households within the lowest income quintile would backslide into poverty as a result of an AIDS death. The chance of households within this sector falling into poverty will decrease with income growth over the 2005–2015 projection period of the simulation analysis.

[26] http://www.womenofchina.cn/research/statistics/16598.jsp

Table 3.5: Thai and Viet Namese households vulnerable to poverty due to AIDS death

	Quintile					Total
	Low	Second	Middle	Fourth	High	
Thailand						
Population (million)	13.0	13.0	13.0	13.0	13.0	64.8
Share of GNI (%, 2004)	6.2	9.8	14.3	21.1	48.6	100
GNI (PPP US$ million)	7,017	11,078	16,132	23,747	54,838	112,812
Households per quintile (million)	4	4	4	4	4	18
Without AIDS						
Income per household (PPP US$ year)	1,950	3,079	4,484	6,600	15,241	6,271
People per household	3.6	3.6	3.6	3.6	3.6	3.6
Income per capita (PPP US$ year)	542	855	1245	1833	4234	1,742
With AIDS death						
Income household (AIDS, PPP US$ year)	975	1,540	2,242	3,300	7,621	3,135
People per household	2.6	2.6	2.6	2.6	2.6	2.6
Income per capita (AIDS, PPP US$ year)	375	592	862	1269	2931	1,206
Viet Nam						
Population (million)	16.6	16.6	16.6	16.6	16.6	82.8
Share of GNI (%, 2004)	7.0	11.0	15.6	22.2	44.2	100
GNI (PPP US$ million)	9,654	15,186	21,618	30,760	61,160	138,378
Households per quintile (million)	4	4	4	4	4	19
Without AIDS						
Income per household (PPP US$ year)	2,565	4,035	5,744	8,173	16,250	7,353
People per household	4.4	4.4	4.4	4.4	4.4	4.4
Income per capita (PPP US$ year)	583	917	1,305	1,857	3,693	1,671
With AIDS death						
Income household (AIDS, PPP US$ year)	1283	2018	2872	4086	8125	3,677
People per household	3.4	3.4	3.4	3.4	3.4	3.4
Income per capita (AIDS, PPP US$ year)	377	459	653	929	1847	853

* GNI= Gross National Income

Table 3.6: Indian households vulnerable to poverty due to AIDS death

	Quintile					Total
	Low	Second	Middle	Fourth	High	
India						
Population (million)	206	206	206	206	206	1030
Share of GNI (%, 2004)	8.8	12.4	16.1	21.2	41.5	100
GNI (PPP US$ million)	57,436	81,533	105,183	138,815	272,067	655,034
Households per quintile (million)	43	43	43	43	43	215
Without AIDS						
Income per household (PPP US$ year)	1,339	1,900	2,452	3,235	6,341	3,053
People per household	4.8	4.8	4.8	4.8	4.8	4.8
Income per capita (PPP US$ year)	279	396	511	674	1321	636
With AIDS death						
Income household (AIDS, PPP US$ year)	669	950	1,226	1,618	3,171	1,527
People per household	3.8	3.8	3.8	3.8	3.8	3.8
Income per capita (AIDS, PPP US$ year)	176	250	323	426	834	402

3.1.4 Socio-economic distribution of HIV infection

The second step of the simulation method involves the determination of how many vulnerable households likely to be affected by the virus. Analysis of which households are most vulnerable to backsliding into poverty as a result of illness (outlined in the previous section of the report) showed that households in the poorer quintiles of most Asian countries are most at risk. However, the incidence of HIV infection by economic status has generally not been defined in forecasting studies. In order to make this forecast, it is important to understand the fundamental characteristics of the Asian epidemic to determine which sections of the community are most at risk from infection and also project future national infection by economic segments of the community.

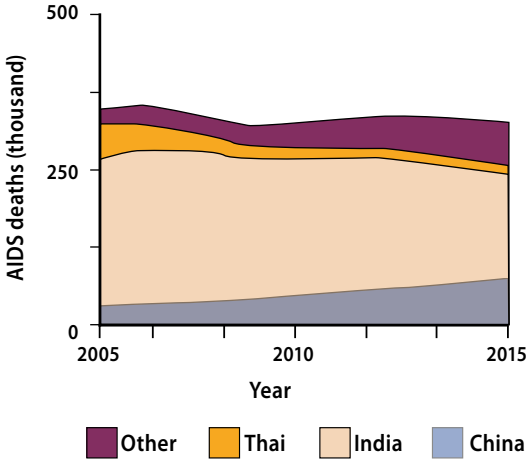


Figure 3.1: AIDS Deaths in Case Study Countries (thousands)

Source: AEM Projection

3.1.4.1 Phases of the Asian Epidemic

One study[27] notes that the HIV epidemic in Asia progresses as a series of waves. Firstly, among injecting drug users and/or men who have sex with men, then sex workers and followed by the very large wave associated with clients of sex workers. This wave is followed by infection among the partners of the clients and their children. This pattern was initially observed in Thailand, and then across much of Asia, with the exception of Cambodia and India (where the sex work epidemics

[27] Brown et al (2007). Confidential Paper for AIDS Commission. East West Center, June

expanded quite quickly, even before epidemics among injecting drug users were observed. The above-mentioned populations therefore play a key role in HIV epidemics across Asia and determine which members of the population and their consequent households are at risk from HIV infection and AIDS poverty. Some of the countries experiencing injecting drug user and commercial sex epidemics include China, Bangladesh, Viet Nam, Indonesia, Malaysia and parts of India. Within these countries it could be expected that the average income of a person living with HIV is less than in countries where the epidemic is becoming more prevalent amongst sex worker client and their partners. Countries such as Cambodia and Thailand are possibly the key examples of countries within this phase of the epidemic. HIV infection is likely to be proportionally higher in richer quintiles of these countries, as wealthier men pay for sex, and the epidemic is likely to concentrate in wealthier segments of the population.

3.1.4.2 National HIV projections

An estimated 8.6 million people were living with HIV in Asia in 2006, with around 630 000 dying from AIDS-related illnesses[28]. Since this reporting, Cambodian and Indian prevalence estimates have been revised downwards in line with the results of recently conducted population-based demographic and household surveys. Indian prevalence was reduced by around one-half, and Cambodian by about 25%. In light of these revised estimates, somewhere in the order of 5 million people are estimated to be living with HIV in the Asian region.

Despite these revisions, most PLHAs in Asia are found in India, as the epidemic is maturing and moving from sex work to clients and their partners. UNAIDS has noted that highest prevalence rates in India are found in Maharashtra, Andra Pradesh and Tamil Nadu. In 2006, most HIV cases in China were reported in Henan, Yunnan, Guangxi, Xinjiang and Guangdong provinces. Unlike China and India, where the epidemic is continuing to increase and bridge from most at risk populations, the epidemic appears to be stabilizing in Cambodia and Thailand. There is strong evidence that behaviour change efforts introduced by the state and nongovernmental organizations have been effective, particularly in the sex industry[29].

The Asian Epidemic Model[30] disease infection forecasting model was used to estimate how the HIV epidemic will develop across Asia. AEM projections are based on technical data relating to baseline HIV/STI prevalence, national data on the population size and distribution, sexual behaviour (e.g., condom use and number of partners), and the coverage of prevention and care programs. The projections of AEM generated deaths in the case study countries are presented in Figure 3.1. It is apparent that annual deaths stabilize at around 300–350 thousand per year from 2005 to 2015 -- although rising to over 400 000 by 2020.

3.1.4.3 HIV prevalence and wealth

Clients of sex workers account for a large share of HIV cases in Asia. In countries where surveys have been conducted, it is evident that men from wealthy quintiles are the major purchasers of sex.[31][32] For example in Viet Nam, nine times as many men paid for sex in the wealthiest quintile when compared

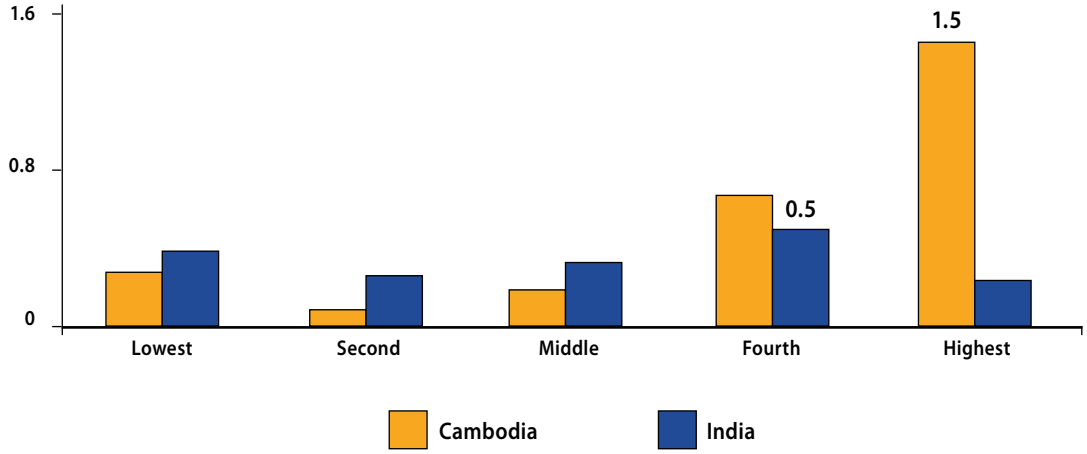
[28] UNAIDS (2006), *Report on the Global HIV/AIDS Epidemic*. Geneva.

[29] UNAIDS (2006), *Report on the Global HIV/AIDS Epidemic*. Geneva.

[30] Software developed by Tim Brown, East-West Centre.

[31] Ministry of Health and Population (MOHP) [Nepal], New ERA, and Macro International Inc. 2007. Nepal Demographic and Health Survey 2006. Kathmandu, Nepal: Ministry of Health and Population, New ERA, and Macro International Inc.

[32] National Institute of Public Health, National Institute of Statistics [Cambodia] and ORC Macro. 2006. Cambodia Demographic and Health Survey 2005. Phnom Penh, Cambodia and Calverton, Maryland, USA: National Institute of Public Health, National Institute of Statistics and ORC Macro.



Source: Most recent Demographic & Health Survey from respective countries

Figure 3.2: Male HIV prevalence (%) by wealth quintile

to the lowest wealth quintile in the last 12 months.[33] A similar pattern is evident in Cambodia, where the most recent DHS found that 1.3% of men in the lowest wealth quintile paid for sex, while 12.7% of men in the richest quintile paid for sex in the year preceding the 2005 survey.[34] DHS surveys undertaken in India and Cambodia support a positive correlation between wealth and HIV prevalence. In the case of Cambodia, a very pronounced increase in HIV prevalence is evident, as prevalence was found to be five time higher in the highest wealth quintile compared with the lowest. A positive, yet less significant, correlation was found in India. HIV prevalence trends upwards till the fourth or second highest wealth quintile, where 0.5% adult prevalence in men was observed. This observation is entirely consistent with African results, albeit at much lower prevalence rates.[35]

For the purposes of this simulation study, it is assumed that similar rates of HIV infection in Asia occurs in the wealthiest quintiles. Given that the economic segment most at risk from infection moves from low economic quintiles to wealthier quintiles of the community as the epidemic matures it is difficult to predict changes in prevalence by quintile through time. Consequently, assumptions relating to vulnerability are subject to sensitivity analysis in Note 3A to examine how robust results are to this variable.

3.1.4.4 Gender and HIV vulnerability

Until now, the majority of people living with HIV and dying of AIDS in Asia have been men, most all of whom had acquired HIV when buying sex, having sex with other men, or when sharing contaminated injecting equipment. More than 70% of HIV cases in Asia are male[36] and this male-dominated share of the burden of disease is evident in both East and South East Asia. It follows, therefore, that the majority of surviving spouses to date are women who were unaware of their

33 General Statistical Office (GSO), National Institute of Hygiene and Epidemiology (NIHE) [Vietnam] and ORC Macro. 2006. Vietnam Population and AIDS Indicator Survey 2005. Calverton, Maryland, USA: GSO, NIHE, and ORC Macro.

34 National Institute of Public Health, National Institute of Statistics [Cambodia] and ORC Macro. 2006. Cambodia Demographic and Health Survey 2005. Phnom Penh, Cambodia and Calverton, Maryland, USA: National Institute of Public Health, National Institute of Statistics and ORC Macro.

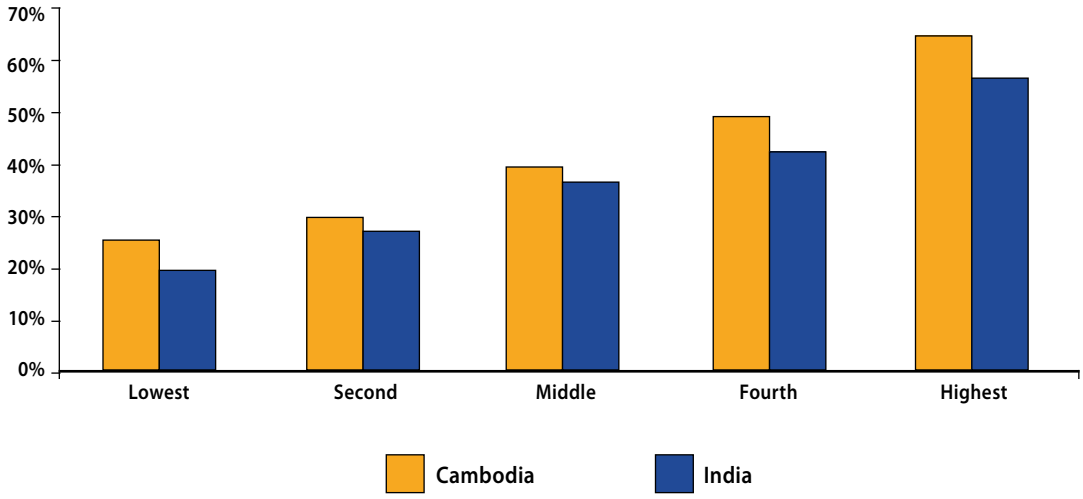
35 Mishra V, Bignami-Van Assche S, Greener R, Vaessen M, Hong R, et al. (2007). HIV infection does not disproportionately affect the poorer in sub-Saharan Africa. AIDS (supplement).

36 UNAIDS (2006), *Report on the Global HIV/AIDS Epidemic*. Geneva.

husbands' HIV status or how their husbands became infected. For these women, their only 'risk' was to have had unprotected sex with their husbands. And yet, they suffer from discrimination and stigmatization within their community and even their families.

For example, according to a United Nations Development Programme study[37] in India, an estimated 40 per cent of widows leave their in-laws' homes after their husbands' deaths due to AIDS and 80 per cent of those women are deprived of their property and inheritance rights. There must be a Government effort to better provide and protect these women, to help them earn livelihoods and support their families, even after their husbands' illness or death. UNDP notes, however, that women are becoming inflicted with a relatively higher burden of disease as the epidemic becomes more wide-spread.

Recent Demographic & Health Survey data surveying adult women in Cambodia and Viet Nam, emphasizes the extent to which Asia's poor are in some ways at greater risk of HIV infection than better off sections of society. For example, women's comprehensive knowledge of HIV is far greater in the wealthier quintiles of the community. For both Cambodia and Viet Nam, the percentage of women with comprehensive knowledge was double within the wealthier quintiles compared to poorer parts of society. This lack of knowledge may in part reflect gender inequities in access to education.



Source: Most recent DHS from respective countries

Figure 3.3: Women's Comprehensive HIV Knowledge by Wealth Quintile

One study highlights that, in the case of South Asia, boys primary school completion rates were 95% compared to 81% for girls[38]. The gender gap is even greater for secondary education in South Asia. Girls who attend secondary school are far more likely to understand the costs of risky behaviour and have a better understanding of measures to protect themselves in difficult sexual situations.[39]

Access to information and lack of education may be much less of a risk factor in the context of the Asian epidemic, when compared to having a wealthy sexual partner and being part of a high wealth

37 UNDP, NCAER, NACO (2006), *`Gender: Impact of HIV and AIDS in India'*

38 UNESCO (2004). EFA Global monitoring report, 2003/4. Paris: UNESCO.

39 Hargreaves, J. and Boler, T. (2006). Girl Power: The impact of girls' education on HIV and sexual behaviour. ActionAid International.

quintile. Survey information from Cambodia shows that wealthier women are far more likely to have the disease when compared to women from poorer parts of the community. For example, the 2005 DHS found that women from the highest income quintile have nearly twice the average HIV prevalence (0.9%) when compared to lowest income quintile (0.5%)[40].

Regardless of their income and educational status, women whose husbands are living with HIV, are at-risk of becoming infected. Because they are, for the most part, indistinguishable from the 'general' population, there is significant difficulty in targeting interventions for this proportion of the population. Very little knowledge is available about effective interventions for changing behaviours of such couples, demonstrating the need for further operational research to design more effective prevention interventions to address them.

3.1.5 National HIV poverty

The third, and final stage of the methodology, involves combining AIDS deaths forecasts, estimating the proportion of these deaths that result in a household falling into poverty and determining the period which the household remains in poverty. Each of these elements is outlined in Table 3.7.

3.1.5.1 Integrating elements of the simulation analysis

The first section of the table details HIV prevalence, HIV cases and forecast deaths that were estimated using the epidemiological model AEM. Not all AIDS deaths occur in households that would backslide into poverty in the event of catastrophic illness. For example, in most countries, households in the highest quintile have sufficient income so that a reduction in income resulting from illness is not enough to push the household income below US$1 per day poverty line. At the other end of the spectrum, many households are already below the US$1 per day poverty line, and income loss drives the household further into poverty.

The percentage of households vulnerable to falling into poverty as the result of an AIDS death was estimated in the household vulnerability section of the report. For India, a reduction in income of 50% was significant enough to push representative households from two quintiles below the poverty line, whereas for other countries, an income reduction of this order only pushed households within one quintile below the US$1 per day poverty line. Correspondingly, it was calculated that households within one quintile, or 20% of all households, were vulnerable in Cambodia, Indonesia, China, Thailand and Viet Nam.

HIV infection is not evenly distributed across each economic quintile of the population. Recent Cambodian and Indian DHS survey data suggests that HIV infection is greater within wealthier sections of the population. The distribution of infection across wealth quintiles with time is, however, dynamic as the virus moves from injecting drug user, sex worker and client populations. Given this uncertainty, the simplifying assumption of equal distribution of infection across all wealth quintiles is utilized in this study.

[40] The income definition proxies the divide between rural -– lower income groups -– and urban, higher income segments of the community.

Table 3.7: Poverty simulation analysis [41] [42] [43] [44]

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Cambodia											
AIDS deaths (people)	9,637	8,065	5,756	3,055	2,892	6,339	4,803	4,959	5,775	4,725	4,456
% of AIDS deaths in Households vulnerable to AIDS-poverty	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Annual incidence of AIDS-poverty (HH)	1,927	1,613	1,151	611	578	1,268	961	992	1,155	945	891
Annual incidence of AIDS-poverty (people)	8,095	6,774	4,835	2,567	2,429	5,325	4,034	4,165	4,851	3,969	3,743
Cumulative (5-year) AIDS-poverty (people)	35,463	38,503	38,563	35,883	30,580	24,700	21,930	19,190	18,520	20,805	22,345
China[30]											
AIDS deaths (people)	30,338	34,119	36,720	39,259	42,773	47,099	51,850	56,701	61,640	66,790	72,336
% of AIDS deaths in Households vulnerable to AIDS-poverty	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Annual incidence of AIDS-poverty (HH)	6,068	6,824	7,344	7,852	8,555	9,420	10,370	11,340	12,328	13,358	14,467
Annual incidence of AIDS-poverty (people)	13,409	15,080	16,230	17,352	18,906	20,818	22,918	25,062	27,245	29,521	31,972
Cumulative (5-year) AIDS-poverty (people)	36,609	46,283	56,085	65,200	73,395	80,978	88,386	96,224	105,055	114,948	125,563
Indonesia											
AIDS deaths (people)	3,932	4,262	6,592	8,618	12,109	14,925	17,145	22,951	26,171	29,464	34,579
% of AIDS deaths in Households vulnerable to AIDS-poverty	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Annual incidence of AIDS-poverty (HH)	786	852	1,318	1,724	2,422	2,985	3,429	4,590	5,234	5,893	6,916
Annual incidence of AIDS-poverty (people)	2,595	2,813	4,350	5,688	7,992	9,850	11,316	15,148	17,273	19,446	22,822
Cumulative (5-year) AIDS-poverty (people)	4,236	6,666	9,095	12,735	17,276	23,439	30,694	39,197	49,994	61,579	73,033

[41] Projection of AIDS deaths are based on Asian Epidemic Model country-estimates, provided by Tim Brown, East-West Center.

[42] The percentage of total AIDS deaths assumed to occur within households vulnerable to AIDS-poverty is an average for the projection period. The parameter accounts for the percentage of households estimated to be vulnerable to back sliding in the event of an AIDS death based on their quintile and the proportion of HIV infection within that quintile.

[43] The numbers of surviving household members are multiplied by the annual incidence of AIDS-poverty in households to estimate the annual incidence of AIDS poverty

[44] The annual number of people falling into poverty is summed over a 5-year period to determine the cumulative poverty. Annual incidence from 2001 is brought forward into the 2005 starting cumulative total. That is, the cumulative AIDS-poverty for 2005 is the sum of annual incidence of AIDS poverty from 2001 to 2005.

[45] For the purposes of the analysis, AIDS deaths in the lowest wealth Chinese quintile are assumed to affect the lowest income households – causing AIDS-related poverty for 5 years

Table 3.7: Poverty simulation analysis (cont)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
India											
AIDS deaths (people)	241,591	249,055	244,286	235,749	229,409	224,331	219,774	210,449	198,400	184,580	169,761
% of AIDS deaths in Households vulnerable to AIDS-poverty	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Annual incidence of AIDS-poverty (HH)	96,637	99,622	97,714	94,300	91,763	89,732	87,910	84,180	79,360	73,832	67,905
Annual incidence of AIDS-poverty (people)	367,219	378,564	371,315	358,338	348,701	340,982	334,057	319,883	301,567	280,562	258,037
Cumulative (5-year) AIDS-poverty (people)	1,443,536	1,575,985	1,703,251	1,786,564	1,823,749	1,824,136	1,797,900	1,753,393	1,701,961	1,645,191	1,577,052
Thailand											
AIDS deaths (people)	56,062	46,805	35,924	26,157	20,245	18,794	19,532	20,426	20,699	20,380	19,737
% of AIDS deaths in Households vulnerable to AIDS-poverty	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Annual incidence of AIDS-poverty (HH)	11,212	9,361	7,185	5,231	4,049	3,759	3,906	4,085	4,140	4,076	3,947
Annual incidence of AIDS-poverty (people)	29,152	24,339	18,680	13,602	10,527	9,773	10,157	10,622	10,763	10,597	10,263
Cumulative (5-year) AIDS-poverty (people)	159,103	158,708	151,210	136,922	117,619	96,301	76,921	62,739	54,680	51,842	51,912
Viet Nam											
AIDS deaths (people)	10,463	12,505	14,343	16,262	18,495	20,891	23,170	25,112	26,638	27,827	28,821
% of AIDS deaths in Households vulnerable to AIDS-poverty	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Annual incidence of AIDS-poverty (HH)	2,093	2,501	2,869	3,252	3,699	4,178	4,634	5,022	5,328	5,565	5,764
Annual incidence of AIDS-poverty (people)	7,115	8,503	9,754	11,058	12,577	14,206	15,756	17,076	18,114	18,922	19,598
Cumulative (5-year) AIDS-poverty (people)	18,511	23,602	29,393	35,622	42,159	49,006	56,098	63,350	70,672	77,728	84,074
Total											
AIDS deaths (people)	352,023	354,811	343,621	329,100	325,923	332,379	336,275	340,599	339,322	333,766	329,691
Annual incidence of AIDS-poverty (HH)	118,330	120,347	116,922	112,108	109,855	109,849	109,495	107,914	104,927	100,723	96,432
Annual incidence of AIDS-poverty (people)	426,288	434,667	422,989	405,761	397,136	396,029	392,580	384,382	371,177	353,295	335,025
Cumulative (5-year) AIDS-poverty (people)	1,695,339	1,846,413	1,983,050	2,066,559	2,096,140	2,086,841	2,056,582	2,014,495	1,975,887	1,941,303	1,897,463

The annual household incidence of AIDS poverty is estimated by the multiplication of annual national AIDS deaths, by the proportion of deaths falling upon vulnerable households. This calculation assumes that only one household member per household is infected and succumbs to AIDS. In the early stages of the epidemic, there is little clustering, or multiple infections, within a single household. However, as clients of sex workers pass the virus onto their partners (as the epidemic matures), clustering begins to become more widespread. The simplifying assumption of one infection per household may lead to an over-estimation of poverty impact. The robustness of simulation results to a reduction in numbers of people per AIDS death is explored in the sensitivity analysis outlined in Note 3A.

Annual numbers of people falling below poverty with each household calculated to backslide into poverty are estimated by multiplying the remaining number of household members by the annual number of households falling into poverty. Average household size estimates for each of the case study countries were outlined in the household vulnerability section. Average household size varies from 3.2 people per household in China, up to 5.2 people per household in Cambodia. The cumulative five-year poverty estimate is generated by adding five years of annual AIDS-poverty incidence.

3.1.5.2 Country analysis

Each of the facets of the methodology can be summarized for each country as follows:

- **Cambodia**. The number of AIDS deaths decreases from 9 637 to 4 456 people in 2015. Of these deaths, 20% are assumed to occur in households that are vulnerable to backsliding into poverty in the event of AIDS morbidity and mortality. Corresponding with the projection in deaths and percentage in vulnerable households, the annual incidence of households falling into poverty decreases from 1 927 in 2005 to 891 in 2015. The associated number of household members decreases from 8 095 to 3 743 given the average number of people in the household after the loss one member is 4.2 people. Cumulative five-year poverty decreases from 35 000 to 22 000.
- **China**. The AEM projection indicates that AIDS deaths will increase, with 30 000 deaths estimated for 2005, increasing to 72 000 in 2015. Only a small proportion of these deaths are estimated to occur in vulnerable households. The vulnerable-household calculation indicated that only households in the lowest wealth quintile would fall below poverty in the event of an AIDS death. Only 20% of total AIDS deaths are estimated to results in a household falling below US$1 per day poverty. Corresponding with this incidence of household poverty, the annual number of people estimated to fall below poverty is 13 000 in 2005 and increases to 31 000 by 2015. Cumulative five-year aggregation of annual incidence results increases to a maximum of 126 000 in 2015.
- **Indonesia, Thailand and Viet Nam**. Average Indonesian HIV adult prevalence is estimated to increase. Corresponding with this projection the number of households calculated to fall into poverty increases from nearly 3 000 to about 23 000 per year. Cumulative five-year poverty exceeds 73 000 people by the end of the projection period. For Thailand, forecast HIV prevalence is estimated to decrease over the projection period. AIDS deaths are calculated to decrease from 56 000 to 20 000 people over the 2005–-2015 period. Cumulative five-year poverty decreases from 159 000 people in 2005 to 52 000 in 2015. Viet Namese prevalence is assumed to increase over the 2005–-2015 period. The numbers of households, annual incidence of household poverty and corresponding cumulative poverty are evident in the table.

- **India**. A large proportion of Asian HIV cases are found in India. Households in the middle and second quintile are vulnerable to falling into poverty in the case of an AIDS death. Correspondingly, it is assumed that 40% of total infections result in a household falling into poverty. For India, a reduction in income of 50% was significant enough to push representative households from two quintiles below the poverty line (i.e. 40% of the population), whereas for other countries, an income reduction of this order only pushed households within one quintile below the US$1 per day poverty line. Annual and cumulative AIDS-poverty in 2015 are estimated to be 258 000 and 1.6 million people respectively.

3.1.6 Conclusions

3.1.6.1 Summary

The simulation found that an estimated 2 million people in Asia would be suffering income poverty in 2015 due to HIV. Over the 15-year projection, some 6 million people were calculated to be inflicted with AIDS-related income poverty, but forecast to recover after 5 years. The simulation results show that AIDS has significant impacts on the financial situation of an affected household, but the overall regional level impact is minimal.

There is a great deal of uncertainty surrounding a number of parameters used in the analysis. Sensitivity analysis is conducted and presented in Note 3A to assess how robust the above findings are to changes in three key estimates. Firstly, the change in AIDS-poverty relative to the number of years an affected household is subject to reduced income is analysed. Secondly, the impact on results stemming from halving and doubling the percentage of households vulnerable to an AIDS-related income shock are estimated. The final sensitivity analysis examines the impact of increasing and decreasing average household sizes used to calculate the number of people falling into poverty with each affected household.

An increase in the number of years a household is assumed to suffer from income poverty from 5 to 15 years, along with doubling the percentage of vulnerable households is not sufficient to generate cumulative AIDS-related poverty of above 7 million people in 2015. Doubling the number of people per affected household, similarly, does not results in more than 5 million people being calculated to fall into AIDS-poverty by 2015.

3.1.6.2 Implications for Millennium Development Goals (MDGs)

In 1990, more than 1.2 billion people — 28 per cent of the developing world's population — lived in extreme poverty. By 2002, the proportion decreased to 19 per cent. During that period, rates of extreme poverty fell rapidly in much of Asia, where the number of people living on less than US$1 a day dropped from 900 to 688 million people[46]. Simulation analysis in this report suggests that AIDS-related poverty will not exceed 7 million (with sensitivity analysis). Therefore, given that hundreds of millions of people need to fall below poverty to attain MDGs, HIV does not pose a major threat to attainment of poverty related goals. Aggregate data, does hide important micro and sub-regional indicators of need. The impact of AIDS is severe for affected households and it is imperative that poverty planning efforts of governments — whether through social security or insurance, adequately target households in need. Moreover, many of the people infected within vulnerable populations are marginalized. The plight of such people should be included in national poverty reduction plans and strategies of the donor community.

[46] Chatterjee, S. (2005). Poverty Reduction Strategies–Lessons from the Asian and Pacific Region on Inclusive Development, Asian Development Review. Volume 22 No.1, ADB.

3.1.6.3 Recommendations

1) **Protecting the vulnerable and improving services**. Although the cumulative impact of AIDS on poverty is quite low in the region and has almost negligible effect on achievement of Millennium Development Goal 1, it is the member of poor and near-poverty households who suffer the brunt of the impact. It is there that the burden of illness, and of income and livelihood losses, is borne by affected individuals and families—and especially by their female members. The impact is most harsh in poor households, which lack the income and assets that can help cushion the consequences of AIDS-related illness and death.

   A great deal of the damage done by AIDS therefore is concentrated in and around the homes and lives of the poor who, in the absence of formal social protection systems, somehow have to fend for themselves. Such a situation is at variance with the rapid pace of economic growth in Asian countries and the commitments of Asian Governments to ensure a better standard of life for all its citizens. Impact mitigation programs are needed to protect the livelihoods of HIV-infected and -affected households and families who bear the heaviest burden of illness and death, largely because most countries of Asia lack social security systems that can protect them. These programs should be integrated into social welfare systems and must be developed to minimize the need for households to sell productive assets, and reduce the number of households having to survive below subsistence levels.

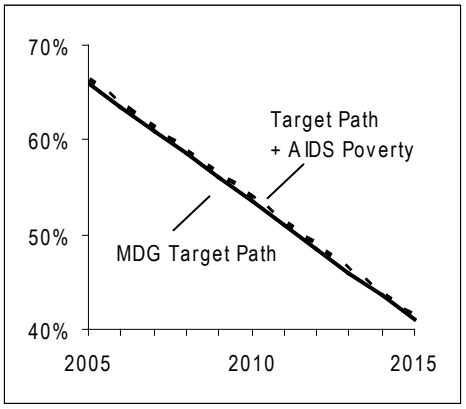
   Such government assistance programs could to target HIV-affected households through microfinance programs to support livelihood sustainability and cash transfers to support households caring for affected or infected children. Without such protections, higher health care expenses and lower household incomes can cause families to withdraw their children from school to help with work and enter the job market to augment household income.[47] To the maximum extent possible, impact mitigation should be integrated into existing national social security programs, while being funded out of the AIDS budgets. In countries where the social security programs are weak or non-existent, AIDS impact mitigation programs should be organized independently and can serve as a launch pad to develop and strengthen existing social welfare and protection programs in place at the national level.

   Efforts to combat a particular public health threat typically also yield other wider benefits. For example, the drive to combat cholera helped to improve sanitation systems in Europe, while the response to tuberculosis has helped improve hygiene practices and strengthen community health facilities, and response to avian influenza has promoted improvements in disease surveillance. Effectively addressing HIV brings a range of wider public health benefits, and serves as a platform for strengthening social development in Asia. Scaling-up national HIV programs can help to improve health care delivery systems for marginal and poor populations, especially in countries with weak health systems. Furthermore, the HIV epidemic provides countries with a valuable opportunity to strengthen their social protection programs for catastrophic health and other expenditures.

[47] Kongsin, S. (1997). *Economic Impact of HIV/AIDS Mortality on Households in Rural Thailand*. Faculty of Public Health, Mahidol University.

2) Next steps: AIDS and projecting national poverty. AIDS-related poverty is estimated to be relatively small compared to the total number of people required to move above the US$1 per day poverty line in order to achieve Millennium Development Goals. The adjoining chart demonstrates the trajectory of poverty reduction required in Cambodia to achieve MDGs, with the additional numbers of people calculated to suffer AIDS-related poverty superimposed on the poverty reduction trend line. Simply adding AIDS poverty to poverty reduction targets, however, does not provide a realistic estimate of aggregate national poverty resulting from HIV and AIDS.

Figure 3.4: Headcount (%) Poverty Reduction to Achieve MDG Targets and Additional AIDS-Poverty Burden (2005-2015) in Cambodia



Source: Study projection using US$1 per day poverty data from PovCalNet research.worldbank.org/PovcalNet/jsp/index.jsp

In many developing countries there is considerable labour surplus. The death and consequent back sliding of one household into poverty may be mitigated by a member of another household, previously below the poverty line, taking the deceased income earners job and moving above the poverty line. In this case, the aggregate income poverty impact of an AIDS death will be negligible.

Thus, to better understand aggregate poverty implications of the epidemic, further studies could consider linking macroeconomic models to models of income distribution and the equity affects of the epidemic calculated. These approaches have been developed by the World Bank[48][49] to principally analyze equity affects of trade liberalization, but could be applied to a health-related problem affecting labour markets such as HIV. For Asia, where the aggregate poverty implications of HIV are relatively minor, it is probably not necessary to further research poverty implications as any adjustments are likely to be minor.

Box: 3.3: Health officials lower estimate of India's HIV cases by half

"Previous estimates had been based on blood samples taken from women visiting prenatal clinics, patients at sexually transmitted disease clinics and small samplings in high-risk groups like prostitutes, truckers, intravenous drug users and gay men. But the mathematical models inflated nationwide prevalence rates because there were few samples from men, rural dwellers, the middle class and people outside industrialized southern India and the Myanmar border, where the disease is concentrated"

Source: New York Times, 1 August 2007

[48] Essama-Nssah, B. (2002). Assessing the Distributional Impact of Public Policy. Policy Research Working Paper No. 2883. Washington, D.C.: The World Bank.

[49] Chen, S. and M. Ravallion (2004). "Welfare Impacts of Morocco's Accession to the WTO," World Bank Economic Review.

3) **Gender, inequality and HIV (non-income dimensions)**. UNDP notes that addressing gender contextual issues that lie at the root of gender inequalities and vulnerability need to be addressed. These include freeing women and men from exploitive and destructive gender and sexual norms. In conjunction with this objective, it is imperative that the wealth and client-driven nature of the epidemic be highlighted so women can succeed in negotiating condoms or fidelity with a non-monogamous partner. Furthermore, the gender nature of the epidemic needs recognition. Failure to understand the male clients' role in giving the Asian epidemic reach has led to errors in estimating prevalence levels but also hinders successful prevention activities. There is clearly a need for further study and operational research to devise and implement male client interventions and intervention for their partners in order for the epidemic to be effectively halted.

4) **Limitations of the study**. The key objective of the study was to ascertain whether AIDS-related poverty was a major obstacle to attaining poverty related MDG targets in Asia in light of newly available survey data. The simulation analysis suggests that AIDS poverty will not be a major hurdle, as only 2 million were forecast to succumb to AIDS poverty by 2015. In comparison, hundreds of millions of people have to move out of poverty to attain MDG income poverty targets. Sensitivity analysis presented in Note 3A indicates that this result is robust. A large number of assumptions were used to generate this result, which are subject to uncertainty, and require further analysis. Most significantly, the length of time a household is subject to AIDS-poverty and further analysis of the income effects of AIDS across economic strata requires further investigation. Although not significant upon regional MDGs, 2 million people falling into poverty is still a large number of people that need care (e.g. Equivalent to 1/7 of the population of Cambodia, or higher than the population of a high prevalence African state such as Botswana). Data is needed to design optimal social security or insurance measures to support this large number of people.

   The AEM projection of future prevalence was based on a scenario where investment in prevention and care in the region was not comprehensive and the epidemic was allowed to gain pace in key countries of the region. As prevention and care investment was not assumed to be widespread, the household expenditure implications of adopting expensive ARV therapy were not considered[50]. Household expenditure for ARVs is likely to be considerable and could force households into poverty, as health expenditures displace expenditure available for subsistence items such as food.[51] Out-of-pocket expenditure for health care is a significant issue in Asia, as insurance and other forms of pre-payment schemes are not developed to protect households from health shocks. One study[52] estimates that some 78.25 million people, or 2.7% of the population, across eleven low/middle-income Asian countries are forced below US$1 per day poverty due to health spending shocks. In the case of AIDS, health expenditure implications for various economic quintiles need to be analyzed to determine the nature of any subsidization that may be required.

50 In the event that prevention and care where to be considered, then new national prevalence forecast would need to be generated and the assumed numbers of HIV cases and associated deaths would be much less. For example, the regional number of HIV cases outlined in ADB/UNAIDS (2004) for a comprehensive response were forecast by the GOALS model to be around half of those under the baseline limited response scenario in 2010.

51 Ke Xu, David B Evans, Kei Kawabata, Riadh Zeramdini, Jan Klavus, Christopher J L Murray (2003). Household catastrophic health expenditure: a multicountry analysis. *THE LANCET* • Vol 362 • July 12, 2003

52 van Doorslaer, E. et al (2005). EQUITAP Project: Working Paper # 2, Paying out-of-pocket for health care in Asia: Catastrophic and poverty impact, Department of Health Policy and Management, Erasmus University, Rotterdam, the Netherlands.

3.2 THE ECONOMIC COSTS OF INACTION: CURBING THE ASIAN HIV EPIDEMIC[53]

Ross Mcleod, Robert Greener, Tim Brown, Nalyn Siripong, Swarup Sarkar

3.2.1 Introduction

3.2.1.1 Methodology

This report has the primary objective of updating demographic, health sector and economic impact estimates, produced for the 2004 Bangkok AIDS conference[54] that were derived using 2001 HIV prevalence and expenditure data. In line with this objective, and the objectives of the Commission on AIDS in Asia, demographic, burden of death, economic impact and health sector expenditure data were updated using 2005 baseline data and projections of HIV prevalence for 2015. In line with these objectives, elements of the methodology include Demographic impacts (based on the UNAIDS 2006 Global Report); Burden of disease (based on data from WHO); Health Expenditure and Financing (based on data from the World Bank, WHO and databases for overseas development assistance institutions); Resource Tracking (as reported in the Global Fund to Fight AIDS, TB and Malaria proposals); Household Financial Impact (based on expenditure patterns and data); and Economic Impact (based on macroeconomic modelling).

3.2.1.2 Organization of the background report

The report firstly provides the demographic and burden of disease dimensions of the pandemic and the worldwide challenge this represents. Secondly, the report outlines the increasing resource demand on health and other sectors.

Current finances devoted to fighting the epidemic are estimated and resources required to halt incidence calculated. Finally, the household financial and economic consequences of inaction are outlined and the number of lives that could be saved and economic implications from acting today rather than later are outlined.

3.2.2 Burden of the HIV epidemic in Asia

3.2.2.1 Health and demography

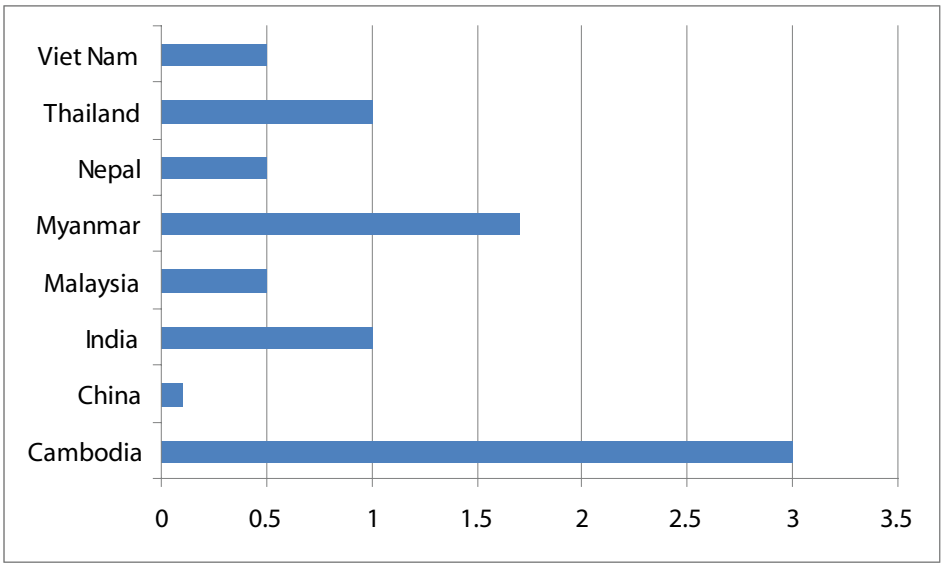
HIV epidemics have manifested themselves very differently in different countries and it is difficult to forecast the longer-term health implications for the differing epidemics in Asia. Because a great deal of infection is concentrated amongst vulnerable groups, national demographic statistics tend to mask the significant adverse impact the virus is having upon the health status of people within hard to reach and not easily identifiable pockets of the community. National life expectancy and crude death rates for 2005 and 2015 are discussed in the next two sub-sections.

Life expectancy at birth is a measure indicating the average number of years that a newborn child would live if mortality remained constant throughout his or her lifetime. Of all Asian countries, life expectancy without AIDS is estimated to be the greatest in Sri Lanka, where a person could expect to live to 74 years of age. However, the prevalence of AIDS has decreased life expectancy in many countries. Countries with higher national prevalence correspond with those where AIDS is estimated to decrease life expectancy by the highest magnitude. In countries like Bangladesh, Indonesia and

[53] Based on the paper 'The economic costs of inaction: curbing the Asian HIV epidemic' by the same authors. The paper was supported by the Asian Development Bank.

[54] ADB and UNAIDS (2004). "The Cost of Inaction" ADB/UNAIDS Study Series, UNAIDS, Geneva.

Figure 3.5: Decrease in Life Expectancy, (Years, 2005)*



Projection using Spectrum[55]

Pakistan, for example, AIDS shows no appreciable impact on life expectancy in 2005, but over the same period, life expectancy is expected to be reduced by 3 years in Cambodia, 1.7 years in Myanmar and 1 year in Thailand and India.

Crude death rates have been decreasing in most developing countries with improvements in infrastructure, water, health services and nutrition. The onset of AIDS has reversed this trend in some countries in Africa. In Cambodia, crude death rates in 2005 are expected to be 1.2 per 1000 higher than would have been in the case without HIV while crude death rates will remain virtually unaffected—in most countries of Asia including China, Indonesia and the Philippines, Previous studies[56] have indicated higher CDR in provinces or districts within a country (e.g. Chiang Mai in Thailand) with high HIV prevalence without necessary changes in national figures.

3.2.2.2 Disability Adjusted Life Years

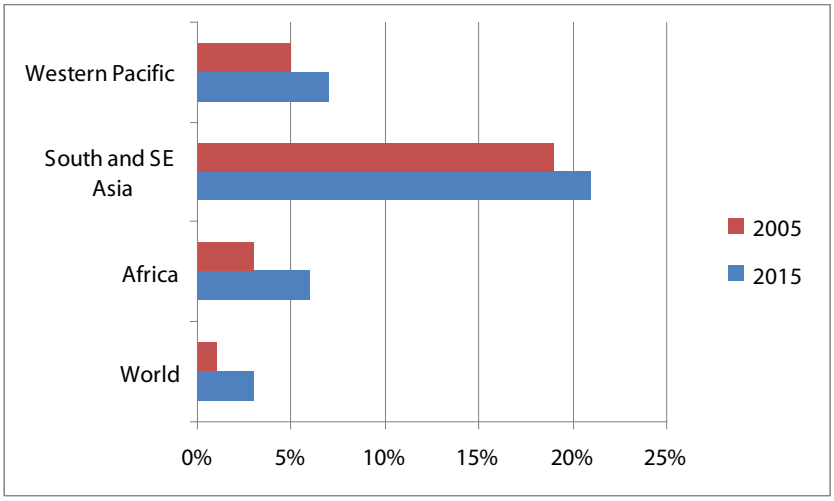
The number of deaths attributable to AIDS and corresponding disability adjusted life years (DALY) associated with AIDS has been estimated by WHO[57]. Country-level estimates are provided for 2002 and regional estimates for 2005 and 2015. In the case of country level estimates, it is evident that AIDS accounted for a high percentage of deaths in Thailand and Cambodia during 2002.

In each of these countries, AIDS accounted for 13.5% and 9.8% respectively of all death. Correspondingly, the relative burden of disease attributed to AIDS, as measured by disability adjusted life years, was also greatest for these two countries.

[55] STI Online (2004), 'Projecting the demographic consequences of adult HIV prevalence trends: the Spectrum Projection Package', J Stover, Futures Group, http://sti.bmj.com/cgi/content/abstract/80/suppl_1/i14

[56] ADB and UNAIDS (2004). "The Cost of Inaction" ADB/UNAIDS Study Series, UNAIDS, Geneva.

[57] World Health Organization (2006). World Health Report 2005. Geneva



Source: World Health Organization (2006). World Health Report 2005. Geneva

Figure 3.6: AIDS deaths as percentage of total deaths, 2005 and 2015

At a regional level, HIV-associated deaths accounted for 3% and 1% of all deaths in South and SE Asia and the Western Pacific in 2005. Compared to Africa, where AIDS represented 19% of all deaths in 2005, the relative burden of disease associated with AIDS is lower. The contribution of AIDS to overall death rates, is however, forecast to double for both these regions in 2015. In this year, AIDS is estimated to account for 6% and 3% of all deaths in South and SE Asia and the Western Pacific. In contrast, the percentage of HIV deaths in Africa is only estimated to increase by 2% over this period.

Table 3.8: WHO HIV/AIDS regional deaths and DALYs ('000), 2005 and 2015[58]

Country	2005			2015		
	HIV	All Causes	% HIV	HIV	All Causes	% HIV
Death						
World	2,830	58,028	5%	4,320	63,459	7%
Africa	2,085	10,881	19%	2,542	12,130	21%
South and SE Asia	437	14,589	3%	867	15,130	6%
Western Pacific	79	12,300	1%	383	14,094	3%
DALYs						
World	82,656	1,470,732	6%	28,852	1,492,824	9%
Africa	59,176	362,252	16%	73,140	397,019	18%
South and SE Asia	12,630	412,171	3%	27,041	397,050	7%
Western Pacific	2,936	259,129	1%	12,226	259,679	5%

[58] http://www.who.int/healthinfo/statistics/bodprojections2030/en/index.html. Projections of mortality and burden of disease to 2030. Revised global and regional projections of mortality and burden of disease by cause for 2005, 2015 and 2030 are available. The revisions are documented in a working paper, together with references to published papers on data sources and methods.

In the early 2000s, AIDS has already become the leading cause of death in two Asian countries. When the current prevalence in Cambodia and Thailand are considered, it appears that AIDS becomes the leading cause of disease when prevalence is around 2% (adult population). Leading causes of death is reported in Table 3.9.

It can be seen that HIV accounts for the largest cause of all deaths, when the epidemic reaches a level of 1%-2% of HIV among adult populations. In 2002, both Cambodia and Thailand fell in this category.

Table 3.9a, b & c: Leading causes of death in 2002[59]

Thailand		**Cambodia**	
Cause	**Rate**	**Cause**	**Rate**
HIV/AIDS	91.2	HIV/AIDS	114.0
Ischaemic heart disease	45.7	Tuberculosis	89.5
Cerebrovascular disease	39.9	Diarrhoeal diseases	85.7
Diabetes mellitus	30.7	Respiratory infections	60.4
Road traffic accidents	30.1	Ischaemic heart disease	55.3
Pulmonary disease	28.3	Meningitis	44.0
Liver cancer	22.5	Cerebrovascular disease	43.2
Respiratory infections	19.4	Low birth weight	30.8
Nephritis and nephrosis	18.3	Birth trauma	28.6
Lung cancers	15.4	Heart disease	25.6

Rate = deaths per 100,000 people

Countries with prevalence around 0.5% or above could feature HIV as an important cause of death, but not the leading cause, compared to all causes among all age groups.

Table 3.9b

Myanmar	
Cause	**Rate**
Ischaemic heart disease	119.7
Respiratory infections	117.4
Cerebrovascular disease	68.4
Diarrhoeal diseases	51.0
Low birth weight	46.2
HIV/AIDS	38.8
Pulmonary disease	33.6
Heart disease	25.3
Measles	23.6
Tuberculosis	23.3

Rate = deaths per 100,000 people

Whereas countries with low prevalence of < 0.1% (as in Bangladesh or Laos) do not feature HIV as a significant cause.

[59] http://www.who.int/healthinfo/statistics/bodprojections2030/en/index.html. Projections of mortality and burden of disease to 2030. Revised global and regional projections of mortality and burden of disease by cause for 2005, 2015 and 2030 are available. The revisions are documented in a working paper, together with references to published papers on data sources and methods.

Table 3.9c

Bangladesh		Lao PDR	
Cause	**Rate**	**Cause**	**Rate**
Ischaemic heart disease	90.4	Respiratory infections	115.8
Respiratory infections	86.3	Low birth weight	107.9
Tuberculosis	51.6	Ischaemic heart disease	100.2
Diarrhoeal diseases	47.4	Diarrhoeal diseases	98.5
Cerebrovascular disease	44.9	Cerebrovascular disease	65.5
Low birth weight	42.6	Pulmonary disease	46.5
Pulmonary disease	27.5	Birth trauma	33.3
Other injuries	15.5	Tuberculosis	28.6
Measles	14.7	Malaria	22.2
Road traffic accidents	13.4	Road traffic accidents	22.2

Rate = deaths per 100,000 people

However, targeting a very specific age group of 15-44 years, we see a different picture, as summarized from the WHO projections.[60] When TB deaths decline sharply AIDS can emerge as the largest cause of mortality, with ischemic heart disease and cardiovascular diseases yet to peak after 45 yrs of age. The HIV figures provided in this projection, however, were based on HIV estimates from 2006, prior to the significant revisions made in Cambodia and India. To account for these differences, then, estimates of AIDS deaths were based on the Commission's projections using AEM.

Table 3.10: Leading causes of death in Asia (15-44 years)

Year	TB	IHD	Diabetes*	Cancer	AIDS (WHO)	AIDS Commission
2005	292.1	164.1	25.9	318.6	366.4	383.9
2010	197.9	160.3	29.2	318.1	516.6	346.4
2015	140.9	155.6	30.9	307.2	882.8	319.2
2020	90.3	152.8	30.1	301.2	1207.4	369.2

* Diabetes does not feature within top three causes of death but was included as an emerging new disease

It can be seen that deaths due to Tuberculosis, once the leading cause of death, have sharply come down since 2002, while injuries (not shown in the figure) could still be higher than HIV. It is important to note that this estimate shows an increasing trend of HIV associated death in the next decade, due to low coverage of prevention and treatment in countries like China, Indonesia, Malaysia, Viet Nam, etc.

3.2.3 Cost of Inaction

3.2.3.1 Increasing demand for resources

Without effective strategies for HIV prevention in place there is an increasing demand for financial resources to deal with the growing epidemic. This in turn is widening the gap between available and required financial resources.

Exact figures of HIV resources available in the region is unknown, but at least US$ 585 million have been recorded in Global Fund Grants applications submitted by various countries in the region in

[60] Mathers, C., and D. Loncar (2006), Global Mortality and Burden of Disease Projections 2002–2030, *PLoS Medicine*, 3 (11), pp. 2011–30. available at: http://medicine.plosjournals.org/perlserv/?request=get-document&doi=10.1371%2Fjournal.pmed.0030442. Country- and age-specific figures, courtesy Mathers and Loncar (2006).

the year 2004, and a figure of US$1.2 Billion investment has been projected for 2007[61] [62]. Most of this funding is clearly coming from external resources. Excepting Thailand, China, Malaysia, and more recently India, most national HIV budgets are reliant on donor funding. An analysis of 12 Asian countries in the region on the whole based on their Global Fund grant applications, show that external funds account for some 60% of overall available HIV resources (Table 3.11).

In 2004, UNAIDS estimated that a comprehensive HIV response in Asia would have required an annual investment of US$ 5.1 billion in 2007[63]. The Commission on AIDS in Asia has adapted those estimates on the basis of local costs, but also included the cost of involvement of community-based organizations, creation of an enabling environment in delivery of services of prevention, treatment, and impact mitigation. A total resource need of US$6.6 billion in 2004 was estimated using the Commission's revised resource needs estimation methodology[64].

Increases in the resources for HIV prevention and care have been substantial, yet not sufficient to meet resource needs required to curb spread of the epidemic. Taking into account that the estimated available resources in the region range from US$585 million to US$1.2 billion, only 10-20% of the required to mount a comprehensive response. UNAIDS noted that measuring the gap between what may be available and what will be required is not so simple.[65] Issues such as absorptive capacity need to be addressed along with ensuring that the politically difficult interventions such as targeting high-risk groups within Asia (IDU and sex workers) have attained critical coverage.

Table 3.11: Asian HIV resource availability and need, 2004

Country	Available HIV expenditure (US$ millions)	Resource availability as % of need	% external resource
Bangladesh	8.7	4%	99.7%
Cambodia	19.7	22%	98.8%
China	153.5	6%	36.2%
India	174.0	8%	86.8%
Indonesia	39.0	8%	74.8%
Lao PDR	5.0	54%	99.4%
Myanmar	11.0	10%	90.9%
Nepal	5.1	9%	98.0%
Pakistan	11.2	5%	86.3%
Philippines	2.8	2%	79.1%
Sri Lanka	3.0	10%	28.1%
Thailand	123.0	68%	25.0%
Viet Nam	28.7	17%	80.8%
Total	**584.8**	**9%**	**59.9%**

Source: Asia Commission resource need estimates for Asia.

Even the resource need of a prioritised package consisting of 80% coverage of most-at-risk populations

[61] UNAIDS Global Resource Tracking Consortium (2004), 'Financing the expanded response to AIDS,' UNAIDS, Prepublication Draft

[62] UNAIDS (2005). A Scaled-up Response to AIDS in Asia and the Pacific. UNAIDS, Bangkok/Geneva.

[63] ADB and UNAIDS (2004), *Funding Required to Confront the HIV/AIDS Epidemic in the Asia and the Pacific Region* (ADB/UNAIDS Study Series Paper 1), Manila/Geneva.

[64] See Chapter 4, section 4.3 of Technical Annex to the Report of the Commission on AIDS in Asia

[65] UNAIDS Global Resource Tracking Consortium (2004), 'Financing the expanded response to AIDS,' UNAIDS, Prepublication Draft

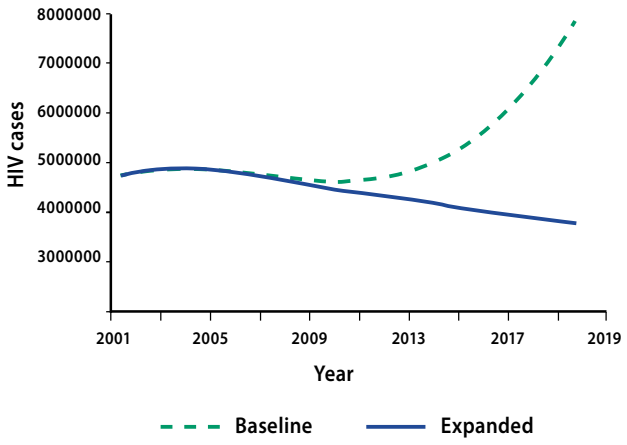
for preventing HIV, 80% coverage for antiretroviral treatment and provision of livelihood support for 80% of affected and poor households was estimated by the Secretariat of the Commission on AIDS in Asia[66] to be US$3.1 billion in 2007.

The data also shows that most of the resource gaps are currently met by external funding and sustainability of funding remain questionable.

Although more precise data is required on the availability of resources in the country and country level validation of the projected resource needs is yet to be done, the fact is that increasing demands are being made on public funding available for HIV in the region.

3.2.3.2 Defining the problem

The Asian Epidemic Model was used to formulate HIV prevalence and corresponding burden of disease based on the current types of prevention and care interventions observed in the region, referred to as the baseline scenario, along with modelling the epidemic consequences from expanding coverage of a focused prevention package with the objectives of raising condom use among sex workers and clients to over 80 per cent; halving sexual infections among sex workers and clients; halving needle sharing among injecting drug users (IDUs) and raising condom use among men who have sex with men to 80 per cent or more. The package is expected to achieve a reduction in cumulative infections by five million and a reduction in the number of people living with HIV in 2020 by about 3 million.

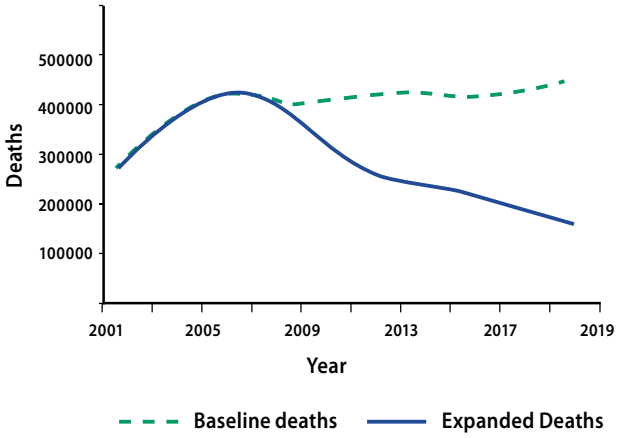


Source: AEM projections[67]

Figure 3.7: Projected HIV Cases (2001-2020)

[66] Commission on AIDS in Asia (2008), *Redefining AIDS in Asia*, Oxford University Press

[67] The Asian Epidemic Model was developed at the East-West Center. The model incorporates the key populations affected by HIV epidemics in Asia: clients and sex workers, injecting drug users, men who have sex with men and the wives of these most-at-risk men. Using country-specific data on the sizes and behaviors of these groups, the model simulates the transmission. The model projects future HIV trends based on the population sizes and risk behaviors that are provided as inputs. The baseline results presented here assume current prevention and ART coverage continue at 2006-levels. The expanded response results build on achievement of 80% coverage of major prevention by 2012 and of antiretroviral treatment by 2020.



Source: AEM projections

Figure 3.8: Projected AIDS Mortality (2001–2020)

By investigating these various costs and benefits at sectoral and macroeconomic levels, the rationale and focus of prevention and mitigations efforts can be defined. Such analysis invariably requires broad assumptions and considerable information gaps are evident when formulating key assumptions. To help overcome this problem, scenarios which incorporate high and low estimates of outcome are presented to define the range of possible impacts and highlight which data are most critically required to better define the financial and economic dimensions of AIDS in Asia.

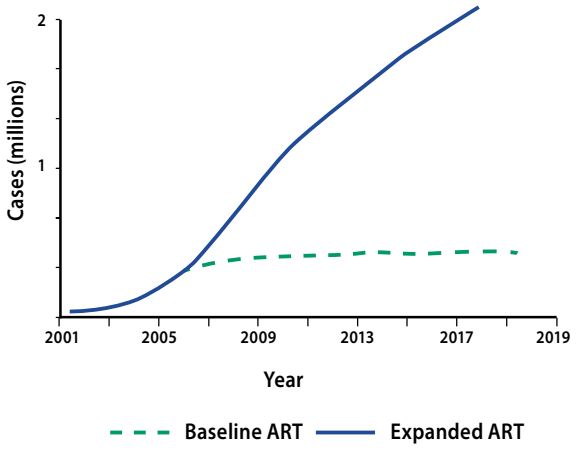


Figure 3.9: Projected ART Coverage (2001–2020)

This same expanded response will also show a significant impact on mortality in the region. The slow initial decrease in mortality results from the number of years between HIV infection and consequent AIDS-related mortality. The difference in cumulative mortality up to 2020 is more than 2.3 million people.

3.2.3.1 Health Sector Implications

In order to maintain the reduced mortality, however, the health sector cost would increase significantly.

The expenditure associated with ART is forecast to increase from less than US$200 million per year to over US$1 billion per year in the case of the expanded response. ART coverage increases from 0.3 million people in 2006 to over 2 million people in 2020 under the expanded coverage scenario.

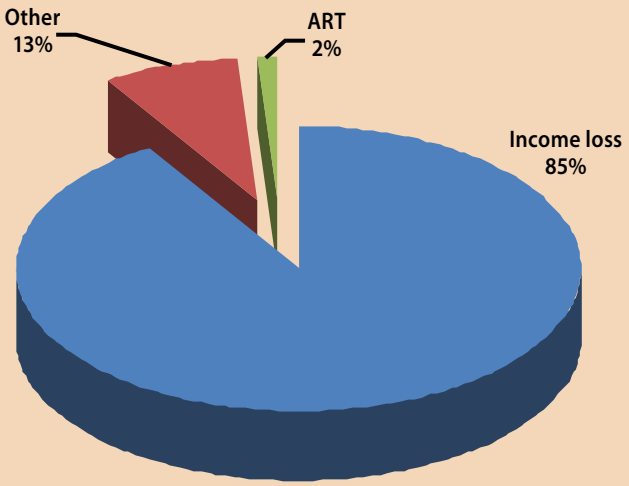
3.2.3.2 Financial costs for affected households

Households are at the front line of AIDS impact, as morbidity and mortality implications are first felt at this level. When a household member suffers from illness, participation in the workforce may be effected, resulting in reduced income if a key income earner is suffering, while other family members may need to dedicate time to care, therefore reducing overall income generation. In tandem with income losses, household medical expenditures will increase as expensive drugs often need to be purchased, along with costs associated with availing medical services. Where income is not sufficient to meet these costs, households may be required to borrow funds, substitute non-medical consumption or sell assets to generate sufficient funds to meet elevated expenditures. The various impacts of AIDS on income and medical expenditure are categorized as direct costs (such as medical expenses, transport, and funeral costs) and indirect costs (foregone income, grief, and changes in consumption and investment). These elements of household impact are subsequently described and quantified in this section.

For all scenarios employed in this analysis, income loss represents the largest component of household financial cost.

The adjoining chart illustrates the contribution of income loss, ART and other expenses to an average financial cost per AIDS mortality across all countries included in the analysis. It is evident that income losses account for 85 per cent of overall cost. This finding is similar to available surveys of household impact in the region. One study[68] notes that lost lifetime earnings due to an AIDS death in Sri Lanka and in India, were estimated to be more than ten times the annual treatment costs of AIDS. Another study[69] revealed the negative impact of AIDS deaths on the household labour supply, as the majority of the AIDS deaths were males of prime working age (15–44 years old). Around 95% of total AIDS mortality cost was found to be associated with reduced income in surveyed northern Thai households.

Figure 3.10: Per cent Composition of Household Financial Costs per AIDS Mortality (20% income loss for 5 years)



Source: Regional Average, Estimate for Report

[68] Mahal A. and Bhargavi, R. (2005). HIV/AIDS epidemic in India: An economic perspective Indian Journal of Medical Research 121, pp 582-600, April.

[69] Pitiyanon, S., Sukontha Kongsin, and Wattana S. Janjaroen (1997). "The Economic Impact of HIV/AIDS Mortality on Households in Thailand" in Bloom, D. and Godwin, P. (eds.) The Economics of HIV and AIDS: the case of South and South East Asia, Oxford University Press, Delhi

3.2.3.3 Projected regional household financial burden

Per death income loss and expenditure estimates are combined with the numbers of AIDS-related mortality estimates associated with baseline AEM modelling projections in each country to estimate financial burden at the household level. These are aggregated at the regional level by adding country estimates together. Aggregate estimates are presented in the following table. It is evident that variations in average income loss per household and the number of years that income losses are prolonged have a significant impact on overall regional financial burden.

Table 3.12: Regional household financial cost in 2020: Baseline AEM estimate

Years of Income Loss	Total household financial loss in 2020 (US$ millions, 2006)		Average household financial loss per AIDS mortality (US$, 2006)	
	20% Reduction in income	50% Reduction in income	20% Reduction in income	50% Reduction in income
1 Year	1,387	2,625	2,653	4,592
5 Years	4,440	10,259	8,430	19,036

Average regional household financial burden varies from US$1 billion, when a 20 per cent income reduction is assumed to effect houses for 1 year, up to US$10 billion when a 50 per cent reduction and five year impact is estimated. In the case of financial cost of mortality per household, estimates vary from US$3-19 thousand per death depending on the magnitude of income reduction and length of impact. Even a moderate, 20% reduction in income results in a financial loss due to death between US$ 3000 to 8000 which is substantial given income levels in many Asian counties. Detailed methodology and simulation results are provided in Note 3 C

3.2.3.4 National economic impact

Household estimates of financial impact cannot be translated into national economic impacts. The loss of a job in one household through AIDS morbidity or mortality may be a gain for another household, where household members were previously unemployed. Economic models that account for these substitutions and also linkages between sectors in an economy are required to measure aggregate impact. The impact of HIV on development is complex and has widespread repercussions. Shocks and responses in one sector reverberate through other sectors. For example, the growing number of people infected with HIV has a direct impact on health sector expenditure, labour supply, household savings and the extent and intensity of poverty. A number of studies[70] that have been used to estimate the economic impact of AIDS and improving health within low-middle income countries in Asia. Key studies are outlined in Box 3.4.

[70] Reviewed in McLeod, R., Rossi, V and de Wit, V. (2008). The Economics of HIV/AIDS in Asia: Methodological Review and Potential Impacts, Mekong Journal of Development Studies (upcoming)

Box 3.4 Estimating the costs of AIDS in Asia

A. Commission on Macroeconomics and Health 2001

The Commission on Macroeconomics and Health evaluated the links between health and poverty. Analysis undertaken as part of the commission estimated by averting 8 million deaths around US$ 180 billion in economic benefits would be generated per year (US$22 500 per death) in direct economic savings by 2015. The estimate assumed that each DALY is valued at one year of average per capita income. The actual economic returns were expected to be much higher than this if the benefits of improved health help to spur economic growth. For example, improvements in life expectancy and reduced disease burden would tend to stimulate growth through: lower fertility rates, higher investments in human capital, increased household savings, increased foreign investment, and greater social and macroeconomic stability[71]. Macroeconomic analyses suggested that another US$ 180 billion per year by 2020 could be generated as a consequence of indirect economic benefits. Even the direct economic benefits using the Commission on Macroeconomics and Health estimates of 1 DALY is equal to one year of average per capita income generates economic costs per death that are higher than the Oxford, Tandon[72] and UNAIDS/ADB[73] estimates. A comparison of the valuation of premature death associated with AIDS are provided in a table that concludes this section

B. Oxford Economic Forecasting Macro Model

The Oxford Economic Model was used to estimate the potential economic impact of elevated death rates, as a result of AIDS, on economic growth. The Oxford Global Macroeconomic Model specifies GDP and its demand components, external trade and balances, labour market and prices, financial variables, government accounts and key country inter-linkages. The country models have a broadly neoclassical foundation and are benchmarked using complete historic data series[74]. Two scenarios are modelled, firstly 'with AIDS' and the second 'without AIDS'. Scenario results focus on the impact of "no AIDS", that is assuming the base forecast captures the current losses in effective labour and population due to the virus, and secondly, the impact of reversing these losses from 1995-2010 is estimated for the no AIDS scenario. The loss in economic product (GDP) per AIDS death generated by the OEF model is provided below.

Table 3.13: GDP Loss per AIDS Death in Selected Asian Countries

Country	5-year Average (US$ 1995)		
	1996–2000	2001–2005	2006–2010
China	29,735.3	20,679.6	15,702.8
Thailand	17,858.5	35,072.2	29,194.8
India	2,517.1	2,561.4	3,483.5

Source: OEF Modelling

[71] World Health Organization (2000). Macroeconomics and Health: Investing in Health for Economic Development. Geneva.

[72] Tandon, A. (2005). Macroeconomic Impact of HIV/AIDS in the Asia and Pacific Region, Asian Development Bank ERD Working Paper No. 75, November 2005, Manila.

[73] ADB and UNAIDS (2004). "The Cost of Inaction" ADB/UNAIDS Study Series, UNAIDS, Geneva.

[74] Oxford Economic Forecasting (2006). Macro Model Background Mimeo, Unpublished Report, Oxford Economic Forecasting, April 2006.

C. Human capital approach

ADB/UNAIDS (2004) combined direct health sector costs and indirect economic costs of AIDS. The indirect cost estimation draws on the human capital approach, which has been widely used to assess the productivity losses from illness or injury as measured by income forgone due to morbidity, disability and mortality. Labour force participation rates and earnings of affected individuals are used to calculate the value of productivity losses due to morbidity and premature mortality

D. Aggregate production function

Tandon (2005) employed an aggregate production function approach to model the economic impacts of AIDS across a selection of Asian and a Pacific country. The approach involves use of a Solow model of economic growth. Results indicate a negative effect of AIDS on economic growth but were insignificant using the sample of Asian economies.

3.2.3.5 Summary of economic losses due to AIDS mortality

The economic cost in economic terms per death is largest in the open and high GNI per capita economy of Thailand and least for India. The magnitude of modelled cost per death is driven by the respective GDP of each country and, in the case of the macroeconomic modelling study, losses begin to accumulate with increased HIV prevalence through time

Table 3.14: Economic Costs per AIDS Death in Asia, (2006 $)

	Commission macro health (US$/death)	Human capital approach (US$/death)	Aggregate production function (US$/death)	Oxford macro model (US$/death)	Estimate used in analysis (US$/death)
Cambodia	14,700	—	8,304	—	8,304
China	60,000	—	38,968	29,355	34,161
India	24,600	14,296	1,536	4,800	6,780
Thailand	91,500	32,023	42,407	37,913	37,448

Note: * = Prevalence used by Tandon (2005). CMH = Commission Macroeconomics and Heath. 1 DALY = GNI per capita

In the case of India, the Oxford and aggregate production function approaches yield similar economic costs per death of less than US$5 thousand per person, a great deal lower than the discounted future earnings and CMH approaches. The excess supply in the labour market of this country and discounting of future lost earnings into a present value may result in discounted future earnings approach overstating the aggregate economic impact of death on national economic output. In general, the economic impact of AIDS in each country follows the overall GNI per capita of that country. For estimating economic impacts in this report, mid-point economic costs from Asian-specific studies[75] per death are used. For example, US$7 000 per death is assumed for India, US$38 000 for Thailand, US$8 000 for Cambodia and US$34 000 for China. The average cost per death represented fourteen times the average gross national income for countries where specific modelling studies have been conducted.

[75] Tandon, A. (2005). Macroeconomic Impact of HIV/AIDS in the Asia and Pacific Region, Asian Development Bank ERD Working Paper No. 75, November 2005, Manila.

This factor was applied to gross national incomes of other countries in the region to estimate the cost per death where specific modelling has not been conducted. No allowance was included for real wage growth, as macro modelling generated much lower costs than the discounted future earnings approach

3.2.3.6 Weighing the costs

Currently, the estimated economic cost of AIDS in Asia is around US$5 billion or less than 0.1% of regional gross national income.[76] Without an investment in an expanded response to AIDS in Asia, the direct and indirect economic cost of the epidemic could dramatically increase from US$5 billion to nearly US$9 billion by 2020. The indirect cost of the epidemic outnumbers direct medical costs. By 2020, modelling and forecast economic impacts suggest that launching a expanded response today would save US$1.9 billion in this year alone. This net economic cost difference accounts for the higher resource need cost of the expanded response and it's reduced productivity loss cost, when compared to the baseline scenario.

A range of national and household socio-economic surveys and studies have been conducted in the region. National macroeconomic studies suggest the impact of HIV on national economic growth is likely to be marginal, although even marginal impact in many of the large Asian economies will generate a substantial economic burden in the absence of appropriate intervention. The costs, cost-effectiveness, impact, equity, human resource requirements, and sustainability of various AIDS prevention, treatment, and mitigation strategies have, however, received limited attention and such analysis may provide some impetus for governments to mobilize domestic resources to fight the epidemic.

3.2.4 Conclusions

3.2.4.1 Relative Burden of AIDS

Asia has lower HIV prevalence when compared to Africa and this region accounts for about 5 million cases. Although prevalence levels are relatively low, the absolute number of cases is very high due to the population sizes of some countries. In South and SE Asia, AIDS was thought to be responsible for 3% of all deaths in 2005, although by 2015 this is expected to double to 6%. In comparison, around 19% of deaths in Africa were attributed to the virus, however, this proportion is only forecast to marginally increase to about 21% of all deaths in 2015. There is marked country-to-country variability in the relative burden of AIDS. In Cambodia, for example, 9.8% of all deaths in 2002 were associated with AIDS, whilst 13.5% in Thailand were attributed to the virus. Notably, the relative burden of disease is expected to decrease in Thailand by 2015, with 10.8% of all deaths calculated to be AIDS-related in this year.

3.2.4.2 Demographic

The WHO[77] study on the burden of disease for Asia shows that between 2015 and 2030, AIDS will be the single-largest disease-related cause of death among adults aged 15–44 years. Adjusting for the recent AEM projections of HIV prevalence for Asia, around 0.4 million people in Asia are likely to die of AIDS-related illnesses in 2020 alone. AIDS has already reduced life expectancy in several

[76] ADB (2008), Key Statistics, June 2008. www.adb.org

[77] Mathers, C., and D. Loncar (2006), Global Mortality and Burden of Disease Projections 2002–2030, *PLoS Medicine*, 3 (11), pp. 2011–30. available at: http://medicine.plosjournals.org/perlserv/?request=get-document&doi=10.1371%2Fjournal.pmed.0030442. Country- and age-specific figures, courtesy Mathers and Loncar (2006).

Asian countries, albeit by relatively small margins. It is estimated that life expectancy in Cambodia in 2005 was three years lower than it would have been in the absence of an AIDS epidemic, while it was 1.7 years lower in Myanmar and 1 year lower in India and Thailand. Crude death rates have also significantly increased in the higher prevalence countries. National estimates, tend to mask substantial declines in hot spots where prevalence is well above the national average.

3.2.4.3 AIDS Expenditure

Overall public health expenditure (as a % of GDP) in Asia is lower than any other region in the world. Despite low government commitment to the heath sector, substantial resources have been mobilized through domestic and external channels to fight the HIV epidemic. It is estimated that somewhere between US$585 million and US$1.2 billion would have been available for HIV prevention and care in 2007. This estimate was derived from Global Fund proposals and primarily reflects government and external assistance. Out-of-pocket and other forms of private health expenditure represent additional sources of health expenditure in many Asian countries; therefore the absence of this expenditure estimate is likely to underestimate actual total HIV expenditure.

3.2.4.4 Resource Needs

A comprehensive response to AIDS in Asia would cost about US$ 6.4 billion per year. However, an annual investment of US$ 3.1 billion (in 2007) would be able to halt and reverse the epidemic in the region. Most countries should be spending US$ 0.50 to US$ 1.00 per capita. This resource need includes the cost of involvement of community based organizations and of the creation of an enabling environment in delivery of services of prevention, treatment, and impact mitigation. Given average HIV expenditure in 2004 was US$0.2 per capita, significant increases in resources are required.

3.2.4.5 Resource shortfall

Although funding has increased from US$182 million in the late 1990s[78] to about US$585 million in 2004, and possibly to US$1.2 billion in 2007, less than 20% of the estimated total comprehensive resources needed to fight the epidemic is being met. It should be noted that financial gap analysis alone does not provide the overall picture of need. Issues such as the structure of the financial gap, and which prevention and care interventions demand priority attention need to be considered, along with capacity of public and private institutions to absorb funds require examination.

3.2.4.6 Investing in the future

Launching a comprehensive response today will lead to reduced infection rates and lower mortality and economic costs. In 2020, it is forecast that the epidemic will result in medical costs, and productive loss costs, in the order of US$9 billon in this year. More than 240 000 lives would be saved in 2020 alone, and economic costs of US$1.9 billion would be avoided if a comprehensive response were immediately launched.

[78] Futures Group International (2003). Funding Required to Confront HIV/AIDS Epidemic in the Asia and Pacific Region, Unpublished Report for the Asian Development Bank and UNAIDS, September 2003.

- **National economic impact**. Although AIDS is the single-largest cause of death from disease among people in their productive prime, the epidemic's impact at the macro-level appears to be negligible. Estimates in this report suggest the macroeconomic impact of AIDS will be less than 0.1% of regional GNI. Because national adult HIV prevalence is comparatively low in Asia, AIDS is unlikely to shorten average life expectancy significantly at the national level. Against a backdrop of strong economic growth, the epidemic is unlikely to affect national economic output noticeably or to affect labour productivity in key sectors. Even where HIV prevalence is concentrated in certain localities, local economic output probably will not be dramatically affected
- **Household financial burden**. The most significant impact is being experienced at the household level. It is there that the burden of illness, and of income and livelihood losses, is carried by affected individuals and families, especially by women. The epidemic's impact will register at many levels, most dramatically within affected households and communities. Given a wide-range, financial losses, due to reduced income (9% – 87%), a mid-point of 50% loss and a very quick period of recovery of 1 year, in 2020 an annual loss of 2 billion USD would be experienced by the households, with a range varying from US$1 and US$10 billion, and an average cost of US$5 billion for the four financial loss scenarios.
- **The cost of mortality**. In the case of financial cost of mortality per household, estimates vary–depending on the magnitude of income reduction and length of impact. Even a moderate, 20% reduction in income, generates a financial cost of death of US$3-8 thousand - depending on years of sustained income loss - which is substantial given income levels in many Asian counties. A scenario of 50% loss recovered in the short period of 1 year, like that described above, would result in a financial cost of almost US$5 thousand per death per household.

3.2.5 Recommendations

3.2.5.1 Resource need

Less than US$ 1 per capita is needed for effective responses. In most countries in Asia, an average annual investment ranging from US$ 0.50 to less than US$ 1 per capita, depending upon the level of HIV prevalence, if focused on effective prevention can halt and eventually reverse the epidemics. Asia's growing economies can finance stronger HIV programmes. Curbing HIV spread and transforming AIDS into a manageable, chronic disease is entirely feasible in a region that includes some of the most dynamic economies in the world. Given Asia's comparatively low prevalence and its rapidly growing economies, the programmes required to contain the epidemic and provide care for those affected are well within the means of most Asian countries. Financial sustainability of care and treatment programmes needs more attention. In countries where the provision of free or subsidized antiretroviral treatment relies heavily on external funding, the financial sustainability of those services is a concern. More research is needed to determine the best combinations of Government subsidies, insurance coverage, work-based health care, and private sector resources for ensuring sustainable access to antiretroviral treatment and care services.

3.2.5.2 Priority setting

HIV epidemics in Asia are highly unlikely to sustain themselves in the 'general population' independently of commercial sex, drug injecting, and sex between men. The most effective way to protect women who, ostensibly, should be at low risk of HIV infection is by preventing their husbands and boyfriends from getting infected. Most importantly, prevention efforts that drastically reduce HIV transmission among and between these most-at-risk groups of people will bring the epidemics under

control. Addressing AIDS brings to the fore controversial issues which mainstream society prefers to avoid, like sex work, drug use and homosexuality. Social taboos go hand-in-hand with the stigma and discrimination which people infected with HIV experience and which sabotage HIV responses. In a few places, courageous leadership from political and social leaders has challenged these taboos, defused stigma and mobilized the public into supporting successful HIV programmes.

3.2.5.2 Household focus

Impact mitigation in Asia is needed primarily at the household level. The impact of Asia's HIV epidemics is most evident at the household level, where women, as caregivers, workers and surviving spouses, generally bear the brunt of the consequences. Women-centred impact mitigation needs to be at the core of a country's HIV response. Yet mitigation programmes for HIV and other catastrophic health conditions do not exist in most Asian countries. Ultimately, treatment is the most effective way to reduce the epidemic's impact. Treatment can keep families together, stop women from being widowed, prevent children from being orphaned by AIDS, and enable families to continue supporting themselves.

SUPPLEMENTARY NOTES

NOTE 3 A: SENSITIVITY ANALYSIS

The cumulative number of people estimated to have fallen into poverty as a result of AIDS is estimated to be around 2 million in 2015. This calculation is based on a number of assumptions for which there is currently imperfect or a paucity of data. Of most importance, the time period which a household falls below poverty as a result of AIDS death, the distribution of HIV incidence upon vulnerable households and the number of people in an AIDS-affected household are not known with certainty. Sensitivity analysis is presented in this section to investigate how robust simulation results are to these assumptions.

A. Sensitivity of simulation results for years prior to income normalization

The Bachmann and Booysen[79] study in southern Africa investigated how long AIDS decreased household income. The study found that income normalized after one year following death. It is unclear how long a household is affected in Asia as there have not been serial follow-up of households affected by AIDS over a multiple year period. The length of time households are affected has an impact on the number of people calculated to suffer AIDS-affected poverty. The sensitivities of results are outlined in the following table.

Table3.1 A: Cumulative AIDS poverty in relation to period of estimated income loss

Cumulative AIDS-poverty (people) in 2015	1 year	5 year	15 years
Cambodia	3,743	22,345	86,251
China	31,972	125,563	275,122
Indonesia	22,822	73,033	123,531
India	258,037	1,577,052	5,102,761
Thailand	10,263	51,912	317,579
Viet Nam	19,598	84,074	171,189
Total	346,437	1,933,979	6,076,433

It is evident that fewer than 1 million people would fall into AIDS poverty if income loss was limited to one year, whereas if income loss was cumulative over the 2000–2015 period approximately 6 million people would fall into poverty. Despite cumulative poverty doubling if the period of income normalization were extended over a 15 year period, the total number of affected people are still estimated to be below 7 million. Given the numbers of people that have to move above US$1 per day poverty in order to attain MDGs, the increase in the aggregate number of AIDS-affected people does not pose a major obstacle to attaining poverty reduction targets.

[79] Bachmann, M.O., and F.L.R. Booysen (2003). Health and Economic Impact of HIV/AIDS on South African Households: A Cohort Study. *BMC Public Health* 3 (2003):14–21.

B. Sensitivity of cumulative AIDS-poverty to percentage of households vulnerable to AIDS income shock

Recent DHS survey data suggests that HIV incidence is positively correlated with income. Correspondingly, the relative incidence of HIV in lower wealth quintiles where households would fall into poverty as a result of catastrophic illness is less than is wealthier quintiles. To capture this distribution, assumptions relating to HIV incidence upon vulnerable households were estimated for each of the Asian case study countries. There is considerable uncertainty as to the nature of these estimates as only a selected number of surveys have been conducted across Asia. The sensitivity of simulation results to changes in these assumptions are provided in the following table. The base scenario presents the results associated with assumptions outlined in the body of the report. The 50% scenario corresponds with HIV incidence being such that the disease only falls upon half of the households in the base scenario. For example, under this scenario, the previous base estimate for India where 40% of households where vulnerable to poverty in the event that were affected by AIDS is halved to 20%. Conversely, in the 200% scenario, AIDS is estimated to affect double the amount of houses when compared to the base scenario.

Table 3.2A: Cumulative AIDS poverty in relation to percentage of households vulnerable to AIDS income shock

Cumulative AIDS-poverty (people) in 2015	50%	Base	200%
Cambodia	11,173	22,345	44,690
China	62,782	125,563	251,127
Indonesia	36,517	73,033	146,067
India	788,526	1,577,052	3,154,104
Thailand	25,956	51,912	103,824
Viet Nam	42,037	84,074	168,148
Total	966,990	1,933,979	3,867,959

It is evident that the number of people estimated to fall into AIDS-poverty would be reduced to 1 million people in 2015 if the percentage of vulnerable households were halved and increased to 4 million if the percentage of vulnerable households were doubled. Similarly to the last sensitivity analysis, 4 million is not a major obstacle to attaining poverty-related MDGs, but still a large number of people that need to be captured by social security or insurance.

C. Sensitivity of cumulative AIDS-poverty to percentage change in household size

Average national household sizes were used to calculate the number of people that would fall into poverty as a result of an AIDS death. Household sizes vary according to economic status and simulation results are likely to vary in relation to the order of this assumption. The following table demonstrates how robust simulation results are to variations in the nature of this estimate. It is evident that if household size was doubled for AIDS-affected households then the number of people calculated to suffer AIDS-related poverty in 2015 would increase from 2 to 4 million people.

Table 3.3A: Cumulative AIDS poverty in relation to household size

Cumulative AIDS-poverty (people) in 2015	50%	Base	200%
Cambodia	11,173	22,345	44,690
China	62,782	125,563	251,127
Indonesia	36,517	73,033	146,067
India	788,526	1,577,052	3,154,104
Thailand	25,956	51,912	103,824
Viet Nam	42,037	84,074	168,148
Total	966,990	1,933,979	3,867,959

NOTE 3 B: VULNERABLE QUINTILE IN 2005 AND 2015 CAMBODIA CASE STUDY

The population in each quintile of Cambodia and share of gross national income in 2004 is outlined in the following table using Cambodian national population statistics from the World Bank HNP database and income share data from PovCalNet. Based on these data it is evident that less than US$400 million is associated with the lowest wealth quintile, while more than US$3 billion is associated with the wealthiest. Furthermore, income per capita in the absence of AIDS is calculated to be US$144 per person in the lowest quintile and US$1 096 per person in the richest. A decrease in income by 50% for an AIDS affected household decreases per capita income from US$434 per person in the fourth quintile to US$268 per person per year. This fall corresponds with a household moving from above the per person US$1 per day poverty line (US$393 per year in 1993 PPP). Based on this calculation, it is estimated that around 20% of households (in the fourth quintile) are vulnerable to backsliding into poverty in the event of an AIDS death.

Table 3.1B: Households vulnerable to poverty due to AIDS death in 2005

	Quintile					Total
	Low	Second	Middle	Fourth	High	
Cambodia						
Population (million)	2.8	2.8	2.8	2.8	2.8	13.8
Share of GNI (%, 2004)	6.6	9.7	13.6	19.9	50.3	100.0
Gross national income (PPP U$ million)	397.1	580.6	818.2	1,196.6	3,025.6	6,016
Households per Quintile (million)	0.5	0.5	0.5	0.5	0.5	2.7
Without AIDS						
Income per household (PPP US$ year)	748	1,094	1,542	2,255	5,700	2,268
People per household	5.2	5.2	5.2	5.2	5.2	5.2
Income per capita (PPP US$ year)	144	210	296	434	1,096	436
With AIDS death						
Income household (AIDS, US$ PPP year)	374	547	771	1,127	2,850	1,134
People per household	4.2	4.2	4.2	4.2	4.2	4.2
Income per capita (AIDS, US$ PPP year)	89	130	184	268	679	270

National incomes are increasing across Asia with high rates of economic growth so it likely that per capita income and consequent household vulnerability to an AIDS-income shock will change with time. National income is projected to 2015 based on current rates of economic growth and the consequences for household vulnerability estimated. It is evident that along with income growth, population growth has been included using the Spectrum Project package to forecast national population in this year.

The same decrease in household income of 50% is also assumed to occur across all quintiles and the consequent decrease in per capita income is evident across all economic strata. In the case of the middle quintile, the decrease in per capita income is such that per person income decreases from above to below the US$1 per day poverty line (US$393 per year 1993 PPP). Based on these calculations it is evident that in any one year about 20% of households in Cambodia are vulnerable to poverty in the event of an AIDS death. Growth in national income results in the vulnerable quintile shifting downwards in at a rate in proportion to economic growth.

Table 3.2B: Households vulnerable to poverty due to AIDS death in 2015

	Quintile					Total
	Low	Second	Middle	Fourth	High	
Cambodia						
Population (million)	3.2	3.2	3.2	3.2	3.2	16.0
Share of GNI (%, 2004)	6.6	9.7	13.6	19.9	50.3	100.0
Gross national income (PPP U$ million)	764.6	1,117.9	1,575.5	2,304.2	5,826.0	11,585
Households per Quintile (million)	0.6	0.6	0.6	0.6	0.6	3.1
Without AIDS						
Income per household (PPP US$ year)	1,242	1,816	2,559	3,743	9,463	3,764
People per household	5.2	5.2	5.2	5.2	5.2	5.2
Income per capita (PPP US$ year)	239	349	492	720	1,820	724
With AIDS death						
Income household (AIDS, US$ PPP year)	621	908	1,279	1,871	4,731	1,882
People per household	4.2	4.2	4.2	4.2	4.2	4.2
Income per capita (AIDS, US$ PPP year)	148	216	305	446	1,126	448

F = forecast

Income growth will reduce the probability of households falling into poverty in countries where only households in the lowest wealth income are currently vulnerable to AIDS-poverty. The constant per cent vulnerability assumption used in this analysis could overstate the numbers of households falling into poverty within countries such as China, Indonesia, Viet Nam and Thailand.

NOTE 3C: REVIEW OF HIV INCIDENCE AND PREVALENCE IN RELATION TO WEALTH SURVEYS

A range of surveys have been conducted in the region to better understand issues such as HIV knowledge, ascertain infection risk factors and estimate national HIV prevalence using a population based approach. Recently conducted major surveys are presented in this Note to support assumptions outlined in the main text of the report.

A. Cambodia

The Demographic and Health Survey (2005) found that comprehensive knowledge about HIV is higher in women when compared to men, but increases with wealth. Only half the women in the lowest wealth quintile had comprehensive knowledge about HIV when compared to the wealthiest quintile. The percentage of both men and women in the highest quintile that had comprehensive knowledge exceeded 60%

Men had a much higher frequency of higher risk sex when compared to women. Higher risk sex, defined as sexual intercourse with a non-marital, non-cohabiting partner in the last 12 months, increased from 5.4% of surveyed men in the lowest wealth quintile to 29% in the highest wealth quintile. In contrast, no women in the lowest wealth quintile reported high risk sex, while 0.6% in the highest quintile had high risk sex.

Table 3.1 C: Cambodia AIDS knowledge, HIV prevalence and risks by quintile

	Lowest	Second	Middle	Fourth	Highest
% of women with a comprehensive knowledge about AIDS	23.7	31.1	38.8	52.1	66.6
% of men with a comprehensive knowledge about AIDS	23.8	26.5	36.8	48.4	62.2
% of women who had higher-risk intercourse in the past 12 months[80]	0.0	0.0	0.0	0.0	0.6
% of men who had higher-risk intercourse in the past 12 months	5.4	8.2	7.6	13.2	29.0
% of men who reported using a condom at last higher-risk intercourse	39.7	75.2	72.3	85.4	90.8
% of men who paid for sexual intercourse in last 12 months	1.3	3.0	2.9	6.4	12.7
% of women who received results from last HIV test taken in the past 12 months	1.0	1.2	1.7	3.1	7.6
% of men who received results from last HIV test taken in the past 12 months	1.9	1.9	2.4	5.8	11.1
% of women HIV positive	0.5	0.4	0.4	0.8	0.9
% of men HIV positive	0.3	0.1	0.2	0.7	1.5

The DHS reported that seven per cent of married men and 71 per cent of divorced, separated or widowed men indicated they had higher-risk sex in the previous year. Of the men reporting higher-risk sex, 83 per cent noted that a condom was used the last time they had higher-risk sex. There is a positive correlation between use of condoms at last risky sex and wealth. Only 40% of men in the lowest wealth quintile used condoms, while 91% of men in the wealthiest quintile used a condom at last risky sex.

Six per cent of men paid for sex in the 12 months before the survey. DHS note that marital status is closely related to HIV prevalence. Women and men who are widowed and those who are divorced or separated have significantly higher rates than those who are married or living together. Both women and men in the highest wealth quintile have higher rates of HIV infection than those in other wealth quintiles. Finally, among men, those who said that they paid for sex in the 12 months preceding the survey have HIV prevalence twice that of those who reported not paying for sex.

[80] Sexual intercourse with a non-marital, non-cohabiting partner

- **Alkenbrack et al (2004)[81]**

  A case-comparison design[82] was used to study HIV case and control groups of 500 households. The case households were composed of at least one adult with HIV. Adults were questioned about their monthly household income, changes in income, and losses in income due to illness or death. Current monthly household income (per capita) was 42 percent lower among HIV-affected households than among comparison households. Case household earnings were US$7.69 per person per month, relative to comparison household earnings of US$13.25 per person per month. Case households had less income, lower non-health expenditures, higher health expenditures, and fewer household assets. HIV-positive guardians are more likely to reduce non-health expenditures, borrow money, and sell assets to pay for their health-related expenditures.

B. India

The Demographic and Health Survey in 1999 included questions on knowledge of AIDS and AIDS prevention. Women aged 15–49 were first asked if they had ever heard of an illness called AIDS. Sixty per cent of women in India had never heard of AIDS in 1999. Knowledge of AIDS varied little by women's age, but was higher among women age 25–34. Urban residence, education, and the standard of living had a positive association with AIDS knowledge. Seventy per cent of urban women in India had heard about AIDS compared with only 30 per cent of rural women. Knowledge of AIDS increases from only 18 per cent among illiterate women to 92 per cent among women who have at least completed high school.

Table 3.2C: India AIDS knowledge and risks by education status

	Illiterate	Literate — middle school incomplete	Middle school complete	High school complete and above
% of women who have heard of AIDS	18.4	53.8	74.0	91.7
% of women who believe AIDS can be avoided by abstaining from sex[57]				
% of women who believe AIDS can be avoided by using condoms	5.6	12.8	20.8	36.6
% of women who believe AIDS can be avoided by avoiding commercial sex	18.7	24.0	26.4	31.4
% of women who believe AIDS can be avoided by having one sexual partner	31.4	35.3	43.5	49.5
% of women who believe AIDS can be avoided by having one sexual partner by avoiding injections/using clean needles	15.9	25.2	31.8	43.8

Source: DHS (1999)

[81] Alkenbrack, S., Chettra, T., and Forsythe, S (2004). The Social and Economic Impact of HIV/AIDS on Families with Adolescents and Children in Cambodia, Findings from a Research Study in Phnom Penh, Battambang and Takeo, USAID, Policy Project.

[82] Respondents in the HIV-affected households were pre-selected through networks that support PLHAs (PLHA networks). Using the list of people served by the group, 500 names were randomly selected and contacted by representatives from the PLHA network (by telephone or through meetings or home-care visits). Fifteen per cent of the PLHAs could not be reached, and 20 per cent were not eligible for the study because they did not have at least one child aged 6–12. An additional 2 per cent of PLHAs who were eligible for the study had no interest in participating. The representative from the PLHA group continued to randomly select people from their roster to request their participation in the study until 500 were identified. The PLHAs gave verbal consent to take part in the study prior to the interviews. In households where more than one adult was HIV-infected, only the individual selected by the NGO was interviewed.

[83] Of those who have heard about AIDS

Table 3.3C: India HIV Prevalence by wealth index[84] quintiles

	Women		Men		Mean	Total
Wealth index	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Lowest	0.17	9,182	0.40	7,617	0.28	16,799
Second	0.21	10,206	0.27	8,698	0.24	18,904
Middle	0.23	10,917	0.34	9,585	0.28	20,502
Fourth	0.35	11,176	0.52	10,165	0.43	21,341
Highest	0.12	11,851	0.24	10,441	0.18	22,292
All India total	0.22	53,332	0.36	46,506	0.28	99,838

Source: Provisional data from India DHS, 2005–2006

Provisional data from the 2006 DHS shows that HIV prevalence peaks in the fourth wealth quintile then drops sharply amongst the highest wealth quintile. The reasons for this observation are not apparent as the survey is yet to be released. Utilization of paid sex may be the key driver underpinning this observation.

- **Pradhan et al (2006)[85]**

  This study surveyed HIV and control (non-HIV) households. Average annual household income was Rs.47,260 for the sample HIV households compared to Rs.48,900 for the non-HIV households. In terms of education, 27.8 per cent of heads of the HIV households were illiterate as compared to 19.9 per cent of the heads of the non-HIV households. HIV and AIDS also have an impact on the income levels of the household. The total loss in income was found to be 9.24 per cent of the total household income of all HIV households in the sample.

C. Viet Nam

Demographic and Household Survey

DHS survey results suggest that sexual behaviour in Vietnam is generally confined to within marital relationships. The DHS noted that whether such findings are factual or reporting bias is a question for debate. Reporting of multiple partners was not frequent and no women reported having more than one sexual partner in the 12 months preceding the survey. Among those women past sexual debut, all report having had only one sexual partner over their lifetime. Men report a mean of 1.4 sexual partners over their lifetime. DHS conclude that the only sub-population to have more partners than 2 are the never-married, the formerly married, and men living in HCMC. Men in HCMC have the highest mean number of partners (2.4) of the four targeted provinces. Of all the male respondents, only 0.5 percent reported that they had sex with a prostitute in the 12 months preceding the survey.

[84] The wealth index is constructed using data on household assets, including ownership of a number of consumer items ranging from a car or a television to a fan or a bicycle, as well as dwelling characteristics, such as the source of drinking water, sanitation facilities, and the type of material used for roofing and flooring. Each asset is assigned a weight (factor score) generated through principal component analysis, and the resulting asset scores are standardized in relation to a normal distribution with a mean of zero and standard deviation of one. Each household is then assigned a score for each asset, and the scores are summed for each household. Individual household members are assigned the score of the household in which they reside. All individuals in the surveyed households are then ranked according to their household score and divided into quintiles from one (lower) to five (highest). At the national level, approximately 20 per cent of the household population is in each wealth quintile. The resulting wealth index is a recently developed measure that has been widely tested in a number of countries in relation to inequities in household income, use of health services, and health outcomes.

[85] Pradhan, B.K., Sundar, R. and Singh, S.K. (2006). Socio Economic of HIV/AIDS in India, UNDP, 2006.

Table 3.4C: Viet Nam AIDS knowledge and risks by quintile

	Lowest	Second	Middle	Fourth	Highest
% of women with a comprehensive knowledge about AIDS	18.8	29.9	37.9	46.6	56.2
% of men with a comprehensive knowledge about AIDS	24.6	42.5	54.3	60.4	69.4
% of women who had higher-risk intercourse in the past 12 months[60]	0.4	0.1	0.4	0.3	0.7
% of men who had higher-risk intercourse in the past 12 months	1.2	2.3	3.5	3.9	7.5
% of men who paid for sexual intercourse in last 12 months	0.1	0.4	0.5	0.6	0.9
% of women who received results from last HIV test taken in the past 12 months	0.8	0.9	1.1	2.4	4.6
% of men who received results from last HIV test taken in the past 12 months	0.6	1.3	2.0	2.4	6.2

Source, DHS (2006)

- **Demographic and household survey**

  DHS survey results suggest that sexual behaviour in Viet Nam is generally confined to within marital relationships. The DHS noted that whether such findings are factual or reporting bias is a question for debate. Reporting of multiple partners was not frequent and no women reported having more than one sexual partner in the 12 months preceding the survey. Among those women past sexual debut, all report having had only one sexual partner over their lifetime. Men report a mean of 1.4 sexual partners over their lifetime. DHS conclude that the only sub-population to have more partners than 2 are the never-married, the formerly married, and men living in HCMC. Men in HCMC have the highest mean number of partners (2.4) of the four targeted provinces. Of all the male respondents, only 0.5 per cent reported that they had sex with a prostitute in the 12 months preceding the survey.

[86] Sexual intercourse with a non-marital, non-cohabiting partner

SUPPLEMENTARY NOTES

NOTE 3 D: ECONOMIC IMPACT OF HIV ON HOUSEHOLDS

A. Indirect costs (foregone income)

The income losses incurred by a household due to a member suffering from AIDS-related illness have been studied using household surveys. Most studies seem to have focused on Africa, although a limited number of surveys have been conducted in South and South East Asia. Research in Thailand found that household income from regular work decreased by 83 per cent when a wage earner became ill and stopped work[87].In Cambodia, a 42% reduction was observed in households affected by AIDS[88], whereas in India only a 9% reduction was observed.[89] In the case of India, most survey respondents only had early stage AIDS, but were showing no signs of AIDS-related illness.

[87] Pitiyanon, S., Sukontha Kongsin, and Wattana S. Janjaroen (1997). "The Economic Impact of HIV/AIDS Mortality on Households in Thailand" in Bloom, D. and Godwin, P. (eds.) The Economics of HIV and AIDS: the case of South and South East Asia, Oxford University Press, Delhi

[88] Alkenbrack, S., Chettra, T., and Forsythe, S (2004). The Social and Economic Impact of HIV/AIDS on Families with Adolescents and Children in Cambodia, Findings from a Research Study in Phnom Penh, Battambang and Takeo, USAID, Policy Project.

[89] Pradhan, B.K., Sundar, R. and Singh, S.K. (2006). Socio Economic of HIV/AIDS in India, UNDP, 2006

Box 3.1 D: Financial costs for affected households

Household study	Direct costs (eg. Medical, funeral, health maintaining activities)	Indirect costs (eg. reduced productivity, reduced savings)
Phayao, Northern Thailand[90]. Study in Phayao province of Northern Thailand with two study districts. A survey of all households was conducted to identify 324 'case households' (chronically ill adult) and 'control household', with no illness	Last 6 months: - Direct medical expenditure = US$234-348 - Travel cost = US$21 - Food cost = US$32	Income loss: - Caregiver = US$66 per month - Sufferer = US$92-103 per month loss income
Chiangmai, Thailand. Survey[91] of 116 households that had recently experienced an AIDS-related death. Households were selected from among those recorded as having had AIDS-related deaths during 1992 and 1993 in hospitals in Chiangmai	- Direct medical expenditure = US$973 - Travel cost = US$63 - Food cost = US$32 - Funeral expense = US$1,537	Income loss: - Caregiver = US$102 - Sufferer = US$2,904 per year - 47.5 per cent reduction in family income
Cambodia[92]. The case population was composed of 500 HIV-affected households (households with at least one HIV-positive guardian who was identified through a PLHA group), and the comparison population was composed of 500 households in which the status of the guardian was not known.		- Household income in control households was US$13 per month - Monthly household income (per capita) was 42 per cent lower among HIV-affected households than among comparison households - HIV-affected households reported an average loss of US$10/month
India. Survey[93] covered 2,068 HIV households and 6,224 non-HIV households spread over the rural and urban areas of the six HIV high prevalence states.	- 54 per cent of the male sample PLWHA were in Stages I or II, in the case of females, as many as two thirds of the sample were in Stages I or II	- Average annual household income was Rs. 47,260 for the sample HIV households in comparison to Rs. 48,900 for the non-HIV households - Total loss in income was found to be 9.24 percent - Average income lost for PLWHA currently not working was found to be Rs. 27,421 in the last one year in the sample
Southern India. Survey[94] of economic impact of AIDS in patients and households in South India	- 40-70 per cent of AIDS-related expenditures being financed by borrowing	- An average 43 workdays were lost in a 6-month period, or US$60 in lost income during that time

B. Direct costs (health and other expenditures)

Antiretroviral therapy is the cornerstone for those who are infected with HIV. In many Asian countries, ART is provided through government and donor financed programmes to overcome problems with access and affordability in low-income settings. A review of the financing of ART in a selection of countries presented below indicates that upwards of 70% of ART costs are borne by government and public monies, as opposed to private sources of finance such as out-of-pocket expenditures. Correspondingly, a large portion of health expenditure costs are not incurred at the household level.

[90] Kongsin, S. (2003). The Impact of HIV/AIDS Morbidity on Households in Upper-North Thailand: Phayo Case Study, PhD Thesis, London School of Hygiene and Tropical Health, University of London

[91] Pitiyanon, S., Sukontha Kongsin, and Wattana S. Janjaroen (1997). "The Economic Impact of HIV/AIDS Mortality on Households in Thailand" in Bloom, D. and Godwin, P. (eds.) The Economics of HIV and AIDS: the case of South and South East Asia, Oxford University Press, Delhi

[92] Alkenbrack, S., Chettra, T., and Forsythe, S (2004). The Social and Economic Impact of HIV/AIDS on Families with Adolescents and Children in Cambodia, Findings from a Research Study in Phnom Penh, Battambang and Takeo, USAID, Policy Project.

[93] Pradhan, B.K., Sundar, R. and Singh, S.K. (2006). Socio Economic of HIV/AIDS in India, UNDP, 2006

[94] Duraisamy P, Daly C, Homan R, Ganesh A, Kumarasamy N, Karim A, Sri Priya P, Castle C, Verma P, Mahendra V, Solomon S. (2003). The economic impact of HIV/AIDS in patients and households in South India. Draft. Chennai: University of Madras, Department of Econometrics, 2003.

- **Cambodia**. Almost all ARV drugs, even those being provided through many of the NGOs, are procured by the government using donor funds. Some drugs may be sold through private pharmacies, but with an estimated nearly 85% of those in need already on ART through registered government or NGO services, private purchase is likely to be limited.
- **Thailand**. The 'National Access to Antiretrovirals Programme' for people living with HIV in Thailand resulted in than 3 000 persons living with AIDS under publicly financed ART in 2001 to more than 50 000 in early 2005[95]. An increase of this order suggests that the public sector is the major source of source of financing for ART in Thailand.
- **India**. The World Bank[96] noted that the percentage of public spending on ART was possibly around 5 per cent. This may have changed in recent years with higher allocations of government resources for treatment and through donor funds. The 2006 Global Fund Proposal indicated that India had a treatment demand of 520 000 persons, of which 60 000 were on treatment. Of the 60 000 receiving treatment, about 35 000 were availing free care at 54 public hospitals. At the time of proposal development, another 46 centres with capacity to treat 85 320 patients were to become operational[97]. Based on these estimates, approximately 70-80% of those receiving ART were availing free care, if private financing of ART did not dramatically increase.
- **Indonesia and China**. Global Fund Reports[98] suggest that 7 341 people received ART through Global Fund and/or Government funds out of an estimated 11 thousand estimated to using ART (AEM estimate), while in China, some 33 538 people out of 34 356 receiving ART were publicly provided ART using a Global Fund grant.

Despite the provision of free ART, many people living with HIV face hurdles in availing themselves of ART. In Cambodia, a study[99] noted that health expenditures were still significant, despite access to medical assistance. Problems include stigma, poor knowledge of operating hours, and lack of availability of medicines. Surveys in Thailand indicate that travel, food and funeral costs are significant. In the case of Chiang Mai, Thailand, a field-based survey[100] of 116 households that had recently experienced an AIDS-related death found that travel costs averaged US$63 per case, while food costs were US$32 and funeral expense US$1 537.

[95] World Bank (2005b), *Expanding Access to Antiretroviral Treatment in Thailand*. December 2005.

[96] World Bank (2004) *HIV/AIDS Treatment and Prevention in India*, Modelling the Cost and Consequences. Washington.

[97] Global Fund to Fight AIDS, TB and Malaria (2002). (2006b). India Proposal, August 2006, Downloaded from GFATM website

[98] Indonesia. (http://www.theglobalfund.org/search/docs/4INDH_796_351_gpr.pdf) and China GF programme reviews (http://www.theglobalfund.org/search/docs/4CHNH_781_388_gpr.pdf and http://www.theglobalfund.org/search/docs/3CHNH_616_271_gpr.pdf)

[99] Alkenbrack, S., Chettra, T., and Forsythe, S (2004). The Social and Economic Impact of HIV/AIDS on Families with Adolescents and Children in Cambodia, Findings from a Research Study in Phnom Penh, Battambang and Takeo, USAID, Policy Project.

[100] Pitiyanon, S., Sukontha Kongsin, and Wattana S. Janjaroen (1997). "The Economic Impact of HIV/AIDS Mortality on Households in Thailand" in Bloom, D. and Godwin, P. (eds.) The Economics of HIV and AIDS: the case of South and South East Asia, Oxford University Press, Delhi

C. Household financial burden

Health expenditure data and income loss estimates are added together to determine the overall household financial cost. To calculate average household income for each country in the absence of AIDS, average household size from the most recently available household survey was multiplied by average per person gross national income (GNI) in 2006. When comparing estimated household income generated using this method, with estimates in household surveys, the calculated method generally produces a higher annual household income because of income measurement difficulties, but also because of the public sector component of the GNI, which does not appear in household expenditures. To accommodate this overestimate of background average annual household income, two scenarios with higher and lower calculated average income loss are presented in the analysis.

There is also uncertainty surrounding the magnitude of income loss and length of time a household incurs income loss following AIDS mortality. Currently, there are no Asian surveys which have followed income and expenditure dynamics in an AIDS-effected household over a time period and observations have only been made in a limited number of African studies. The Kagera study in Tanzania[101][102] [103] found that for up to three years after the death of an income earner, the household continued to struggle to regain its former level of income and security. In the light of the paucity of data surrounding the temporal dimensions of household impact, a number of scenarios are used to estimate household financial burden. In the first instance, household income is assumed to decrease by 50% for a 5 year, and also for a 1 year period.

[101] Kongsin, S. (2003). The Impact of HIV/AIDS Morbidity on Households in Upper-North Thailand: Phayo Case Study, PhD Thesis, London School of Hygiene and Tropical Health, University of London

[102] Ainsworth, M., and Over, M. (1992). The Economic Impact of AIDS: Shocks, Responses and Outcomes: AFTPN Technical Working Paper, No.1. June

[103] Ainsworth, M., Deon, F., and Innocent, S. (1996). The Impact of AIDS Mortality on Fertility: Evidence from Tanzania: World Bank, Policy Research Department, Washington, DC

Table 3.1D: Income loss and financial cost per AIDS mortality (50% loss) [104] [105] [106] [107] [108] [109] [110]

Country	50% Reduction in Household Income					
	5 year			1 year		
	Average annual income loss (US$, 2006)	Cumulative income loss (US$, 2006)	Cost per AIDS mortality[109] [110] (US$, 2006)	Average annual income loss (US$, 2006)	Cumulative income loss (US$, 2006)	Cost per AIDS mortality (US$, 2006)
Bangladesh[104]	1,091	5,456	10,205	1,091	1,091	2,862
Cambodia[105]	1,274	6,370	10,108	1,274	1,274	3,062
China	3,200	16,000	29,131	3,200	3,200	6,343
Indonesia	3,053	15,265	24,030	3,053	3,053	5,624
India	1,968	9,840	14,896	1,968	1,968	3,667
Lao PDR	1,000	5,000	8,832	1,000	1,000	2,985
Malaysia	11,240	56,200	77,728	11,240	11,240	15,647
Myanmar	434	2,170	4,873	434	434	1,807
Nepal[106]	848	4,240	6,914	848	848	2,249
Pakistan[107]	2,732	13,660	22,163	2,732	2,732	5,080
Philippines[108]	3,475	17,375	25,508	3,475	3,475	5,795
Sri Lanka	2,620	13,100	21,894	2,620	2,620	5,137
Thailand[111]	5,490	27,450	34,179	5,490	5,490	8,685
Viet Nam[112]	1,526	7,630	13,221	1,526	1,526	3,414

Average annual income loss is most substantial for Malaysia, where per capita GNI is the highest and lowest for Myanmar. In the case of Bangladesh, the annual household income loss is US$1 091 per AIDS-effected household, while the cumulative loss is US$5 456. Total income losses and expenditures are divided by numbers of deaths in each country to estimate costs per mortality. Expenditures include ART, other medical, travel and food, along with ART expenditures. The difference between cost per AIDS deaths accounts for the inclusion of these costs and also for growth in real income over the 2007- 2020 period[111].

[104] The 2006 per capita GNI (World Bank 2008) was multiplied by 4.85 members, to generate an average household income of US$2,183 in 2006. An average household size of 4.85 people and income per month income per household of 7,203 taka per month, or US$1,351 per year in 2005, was found in Government of Bangladesh (2005) Household Survey, 2005.

[105] Per capita income in 2006 of US$480 (World Bank 2008) was multiplied by average household size of 5.2 members. The Government of Cambodia reports an average household size of 5.2 members per household and income per household: 403,304 Riels per month, US$1,272.

[106] An average household income of US$1,696 was estimated by multiplying GNI per capita in 2006 (World Bank 2008) by average household size. Government of Nepal, NLSSII 2003/2004, found average member per household: 5.3 and average household income: 80,111 NRs, (US$1,082).

[107] By multiplying average GNI per capita in 2006 (World Bank 2008) by average household size, an average per AIDS household income of US$5,464 is estimated. Government of Pakistan (2006) Household Integrated Economic Survey (HIES) 2005–06, found an average household size of 6.83 members per household and income per household: 12,326 Rs per month.

[108] Average household income was estimated to be US$7 thousand in 2006, based on multiplying average household size by per capita GNI in 2006 (World Bank 2008). Average members per Philippines household were 5 people in 2006 and average annual family income of 173 thousand pesos in the most recent household survey (Government of Philippines 2008).

[109] Average household size of 3.6 (Government of Thailand 2001) is multiplied by GNI per capita in 2006 (World Bank 2008).

[110] Average household size of 4.36 people (Government of Viet Nam 2007) was multiplied by per capita GNI in 2006 (World Bank 2008) to estimate pre AIDS household income.

[111] Average annual real per capita income growth over the 2003–2009 period (ADB, 2008) is projected until 2020

Table 3.2D: Income loss and financial cost per AIDS mortality (20% loss)

	20% reduction in household income					
	5 year			1 year		
Country	Average annual income loss (US$, 2006)	Cumulative income loss (US$, 2006)	Cost per AIDS mortality (US$, 2006)	Average annual income loss (US$, 2006)	Cumulative income loss (US$, 2006)	Cost per AIDS mortality (US$, 2006)
Bangladesh	437	2,183	4,780	437	437	1,842
Cambodia	510	2,548	4,964	510	510	2,146
China	1,280	6,400	12,415	1,280	1,280	3,300
Indonesia	1,221	6,106	10,420	1,221	1,221	3,300
India	787	3,936	6,681	787	787	2,189
Lao PDR	400	2,000	4,511	400	400	2,172
Malaysia	4,496	22,480	31,842	4,496	4,496	7,009
Myanmar	174	868	2,645	174	174	1,418
Nepal	339	1,696	3,462	339	339	1,596
Pakistan	1,093	5,464	9,554	1,093	1,093	2,721
Philippines	1,390	6,950	10,920	1,390	1,390	3,035
Sri Lanka	1,048	5,240	9,523	1,048	1,048	2,820
Thailand	2,196	10,980	15,382	2,196	2,196	5,185
Viet Nam	610	3,052	6,009	610	610	2,086

Source: Same as for Table 3.1C

A reduction in household income of 50 per cent following an AIDS death may overstate financial burden on the household. To investigate how sensitive household financial burden is to changes in income loss assumptions, a scenario where households are estimated to incur 20 per cent loss in income is also formulated and the simulation undertaken. It is apparent that household impacts are greatly reduced. For example, in the case of Bangladesh, the cost per AIDS-mortality is reduced from nearly US$10 thousand to less than US$5 thousand per mortality. This variation and implications for household economics underpins the need to better understand the micro implications of AIDS over a time period and for households of varying wealth status.

[112] Based on currently available surveys, 'other costs' were estimate to include funeral, food and travel expenditures. Funeral cost of US$2,136 for Thailand, US$210 for Viet Nam and US$500 for other Asian countries where data is not available (Pitayon et al 2007 adjusted for inflation, ADB/UNAIDS 2004) where included. Food and travel costs include US$74 per AIDS death taken from Pitayanon et al. (1997) and US$40 for other Asian countries where data is not available.

[113] Health costs include US$450 for first line ART, and US$5,000 for 2nd line. ART use was derived from AEM data. Only 30% of ART costs are assumed to be borne by households, as most ART is provided suing government and donor funds across much of Asia. Other health costs include treatment for diarrhoea, skin rash, cough, headache, shortness of breath, nausea and mild pain (World Bank 1997). There are some household borne health costings for palliative care outlined by researchers such as Kongsin, (1997) and Pitiyannon et al (1997). In the absence of comprehensive country-specific data, the Resource Needs model unit cost estimate of US$38 per person has been used in developing national costs for strategic plans. In addition to this cost, opportunistic treatment needs to be considered and includes treatment for Tuberculosis, P.carnii pneumonia, Toxoplasmosis, oral thrush and Septicaemia (World Bank 1997). Higher cost opportunistic treatment includes treatment for Cryptococcosis, Herpes simplex virus, Cytomegalo virus, Penicilliosis and Mycobacterium avium (World Bank 1997). To account for non-ART health costs, an average unit cost of US$100 per year is assumed for the last two years of life.

4
Resources

CHAPTER SUMMARY

It is well understood by now that the mobilization of resources to prevent the spread of AIDS is key to containing the epidemic and also to save higher costs of care and treatment at a later stage.

While the allocation of resources in Asia for HIV prevention and care has been growing, it still falls much short of what is required to curb the spread of the epidemic. As has been pointed out in Chapter 3 of the report of the Commission on AIDS in Asia, in 2005, the available resources for HIV/AIDS for the region totaled US$ 582 million, which was only about 15% of the estimated amount necessary for a comprehensive response.

Another major concern is that only a small portion of these resources comes from within the affected countries and the reliance on external donors poses doubts about the sustainability of national AIDS responses in Asia. Increasing the overall amount of resources available is only one part of addressing the epidemic with the targeting of these resources also playing a key role in determining the overall efficacy of interventions.

Given this background, the first section of this chapter aims to offer some insights into the level, sources and utilization of current HIV expenditure; discuss the implications; and highlight questions for further analysis and investigation. The paper will also discuss some of the data collection challenges and processes currently underway to improve HIV expenditure.

The section is structured as follows. The first part describes the level of AIDS expenditure, followed by a discussion of the sources of funding for AIDS. The next part reviews the breakdown on AIDS expenditure by intervention categories and where the data permits, by specific intervention. The remaining portion look at some of the implications for planning and implementation and highlights some of the issues that cannot be addressed because of data limitations.

The second section of this chapter documents cost-analyses of HIV interventions in a number of countries in the Asia region, discusses the findings and considers how this information about costs can help scale-up effective AIDS programming.

In doing so, it outlines models of costing HIV prevention and treatment programmes in Asia. It draws on examples of cost studies of selected programmes in the region, and discusses the lessons learnt for planning and decision-making. The paper does not include new empirical cost-analysis; it relies entirely on information and data already available in the public domain and in published and unpublished UNAIDS country reports.

Examples of cost studies include Asia-specific HIV prevention programmes designed for sex workers, injecting drug users and men who have sex with men, as well as activities to guarantee a safe blood supply, provide services to prisoners and peer education programmes in the military. The studies also consider the cost of proper provision of antiretroviral treatment to people who need it. Finally, some recommendations on the use of cost-analyses and unit costs are offered.

The third section of this Chapter deals with the need to come up with a model to estimate resource needs in Asia that is both easy to use and also in tune with the specific needs of the HIV response in the region. One of the reasons for the low performance of interventions so far, it points out, is that the already insufficient resources are often not prioritized.

While there are many differences in the pattern of the AIDS epidemic among Asian countries there are also enough similarities that would enable a common set of interventions to be recommended and used for the purposes of planning and estimation of resource needs.

Based on its understanding of the similarities of the HIV epidemics in the region, the Commission on AIDS in Asia, believes that it is possible to recommend commonly effective interventions and estimate resource needed for those interventions while at the same time taking into consideration the differences between and within countries of the region.

This paper proposes to simplify the process of estimating resource needs for Asia by, among other things:

- Explaining why a new Resource Allocation Model is required for HIV epidemics in Asia;
- Classifying the typical scenarios of Asian epidemics in a way that can help target the population groups where most new infections occur;
- Defining the most effective package of prevention interventions that will avert the largest number of infections in each epidemic scenario; and
- Outline an easy to use method to estimate the total resources needed by countries in each scenario.

4.1 AIDS EXPENDITURE IN THE ASIA REGION[1] *Gayle Martin*

4.1.1 Introduction

Funding for HIV is at an all-time high. Before 2001, AIDS expenditure increased at a very slow pace, but between 2001 and 2005 the pace increased substantially. Between 1996 and 2005, resources for AIDS increased 28-fold[2] (Figure 4.1). In 2005, US$8.3 billion[3] was spent on HIV which is 90% of the UNGASS estimate of resources required (US$9.2 billion)[4] for a comprehensive response for the same year. Funding for AIDS as a share of development assistance for health increased from 8% in 2000 to 21% in 2004[5].

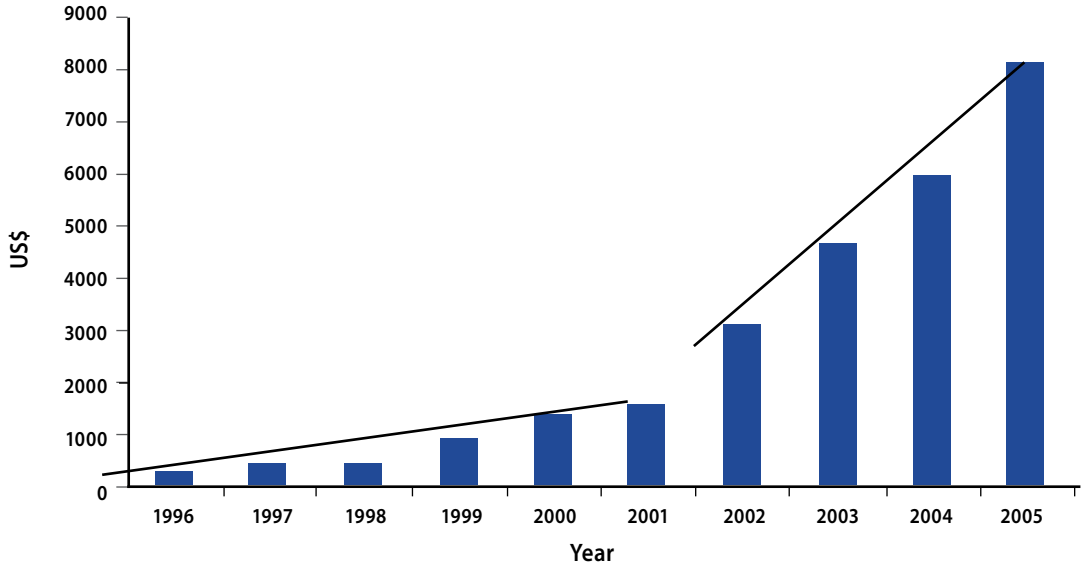
[1] This section is based on a paper prepared with the support of UNAIDS, Geneva

[2] UNAIDS: *Report on the Global AIDS Epidemic*. UNAIDS, Geneva, 2006

[3] ibid

[4] Schwartländer B. et al. (2001): *Science Express*. www.sciencexpress.org/21 June 2001/Page 1/10.1126/science.1062876

[5] Organization for Economic Co-operation and Development, 2005



*Household expenditure not included

Figure 4.1: Estimated total annual resources available for HIV, 1996-2005, current US$

Resource requirements for HIV and AIDS for the Asia region have been estimated[6] at approximately US$ 16.5 billion for prevention, care and treatment over the period 2006-2008 — and approximately US$ 5.5 million average annually[7]. The evaluation of the merits and the breakdown of this resource needs estimation are beyond the purview of this concept paper. However, understanding the current level of expenditure, the sources, the functional allocation and geographic distribution of AIDS resources is critical in order to plan strategically for these resource requirements.

4.1.2 Methodological note

The expenditure data used in this section are taken from various sources. Two main sources have to be mentioned. In 2005/06, UNAIDS commissioned National AIDS Spending Assessments (NASA) in several countries in the Asia region and these form a substantial database of the expenditure information reported here (e.g. International Health Policy Program 2006). Another important source of information is from USAID-funded policy and planning initiatives undertaken in the region by the Policy Project and more recently by the Health Policy Initiative.

There are several data limitations. First, not all Asia countries are included in this database, but National AIDS Spending Assessments are planned for the various countries in the region, as discussed later in this paper. Therefore only a sub-set of the 16 countries of the Asia region are included in this analysis.

The countries included here are: Cambodia, India, Indonesia, Lao PDR, Thailand and Viet Nam, and some results have also been included for Bangladesh and Myanmar. A second and important limitation is that the AIDS expenditures reported here exclude household AIDS-related expenditure.

6 Calculations based on UNAIDS 2005
7 Calculations based on UNAIDS 2005

Several of other measurement challenges are discussed such as actual expenditure versus budgeted or available allocations for AIDS; programmatic and geographic distribution of AIDS expenditure; double-counting of expenditure by implementing agencies and donor agencies; period over which expenditure was made; exact definition of AIDS expenditure and whether donor overheads are included versus only programmatic expenditure.

4.1.3 Level of AIDS expenditure

Table 4.1 shows the level of AIDS expenditure for the countries with sufficient data. There is wide variation in the level of AIDS expenditure. At the lower end of spectrum are Philippines (US$2.8 million) and Lao PDR (US$4.4 million) and on the high end are Thailand (US$122.9 million) and India (US$173.7 million).

Table 4.1 Level of AIDS expenditure (2004, US$)

Country	Total (millions)	Per capita (population)	Per capita (PLWA)
Bangladesh	4.4	0.03	18.99
Cambodia	19.7	1.45	169.64
India	173.7	0.16	30.48
Indonesia	39.0	0.18	50,015
Lao PDR	5.0	0.91	546.00
Myanmar	11.0	0.22	55,557
Philippines	2.8	29.38	282.50
Thailand	122.9	1.91	214.69
Viet Nam	28.7	0.35	86.46

Trend data are available for only a subset of the countries and there are clear trends that can be discerned. Countries such as Viet Nam, Cambodia and India show a similar pattern: slow rates of increase in AIDS spending until about 2001/2002 after which there is a rapid increase (Figure 4.2a, b, c and f). This is consistent with the global pattern of AIDS funding illustrated in Figure 4.4. As more country data are included in this analysis, it may be interesting to assess the relationship between strong reliance on external donor funding for HIV and the pace of increase in resources since 2001.

For other countries such as Thailand and the Philippines the trends are mixed. In Thailand the pace of increase in AIDS spending was lower but steady compared to the other countries just mentioned (Figure 4.2 e). In Philippines, the AIDS funding has actually been decreasing over time (Figure 4.2d).

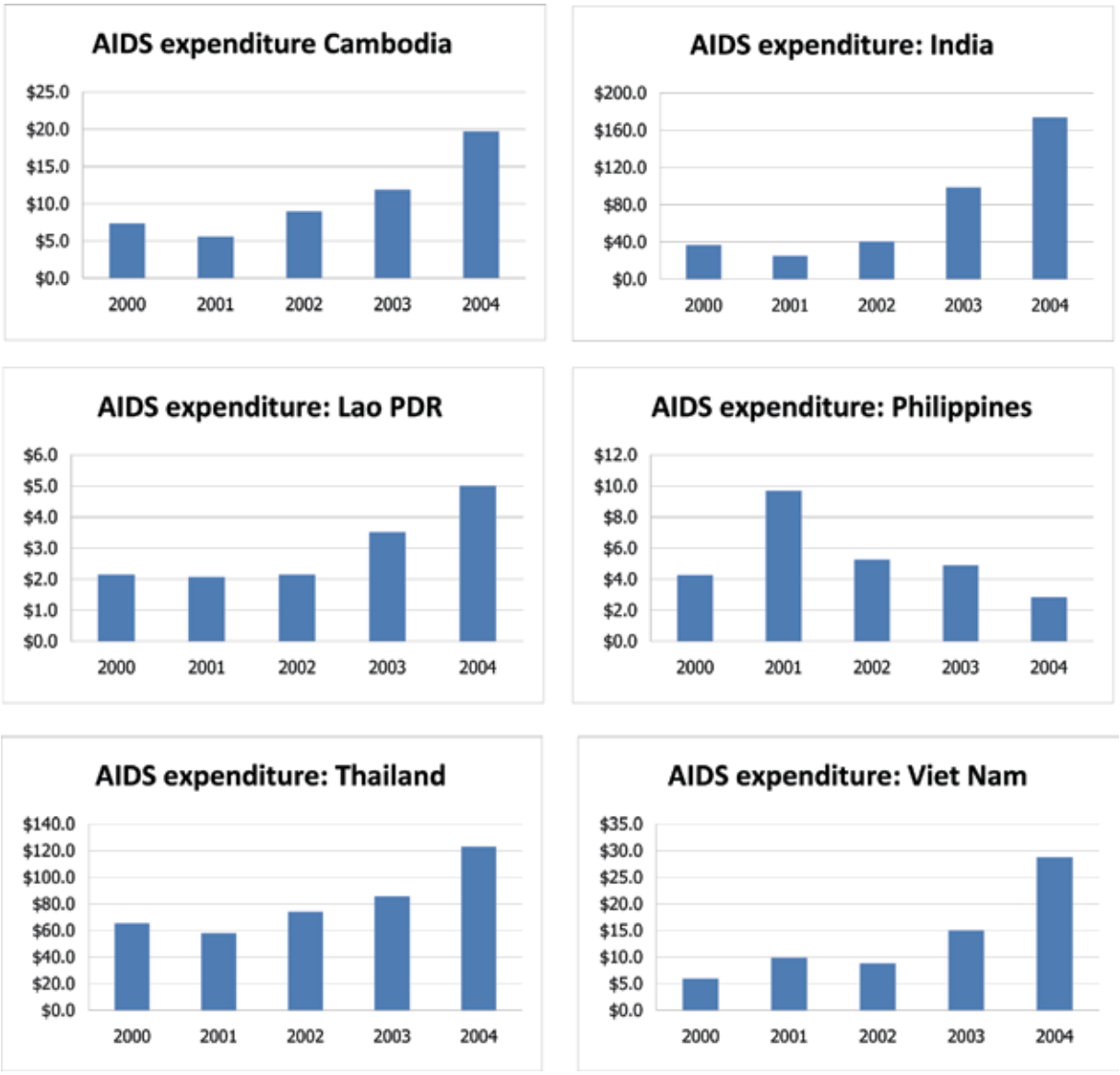


Figure 4.2: Trends in AIDS Expenditure for selected countries[8]

Figures 4.3a and b shows the relationship between AIDS expenditure and number of people with HIV. There is a strong positive correlation (r=0.832) (Figure 4.3a), and while it appears that India (the country with the largest number of PLWAs and the highest AIDS expenditure in the region) is a strong driver of this association, the relationship remains even when India is removed from the analysis (r=0.768) (Figure 2.4b).

[8] Household AIDS expenditure not included.

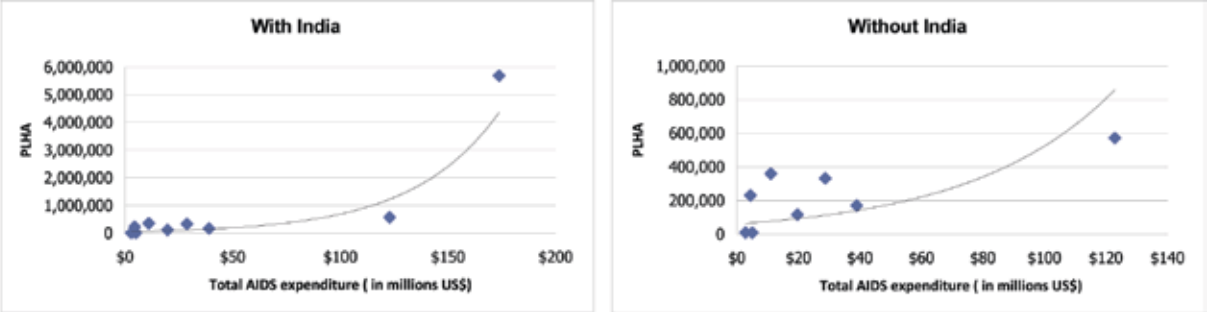


Figure 4.3 a & b: Relationship between level of AIDS expenditure and number of people living with HIV

A simple comparison of absolute levels of AIDS expenditure across countries is inadequate because countries differ in terms of population size, burden of HIV disease and HIV risk. In order to allow for inter-country comparisons, two indicators are generally used in the literature: AIDS expenditure per population and AIDS expenditure per person with HIV. These indicators are summarized in Table 4.1 for the selected countries. These variables are inherently flawed, and other than providing a simple ranking of per capita AIDS spending, it is hard to assess what they convey. For example, a country may have a high per capita AIDS expenditure, with most expenditure is devoted to treatment with slowing investment in prevention. Another country may have a low per capita AIDS expenditure and may be criticized for not doing enough, yet AIDS expenditure may be targeted at sub-national regions with highest HIV risk.

In order to compare countries' commitment to prevention, it would be more prudent to compare prevention expenditure and HIV risk (as indicated by for example, HIV incidence). For a comparison of countries commitment to care and treatment, a comparison of care and treatment expenditure and number of people with HIV or AIDS would provide more insight. This is discussed elsewhere in the paper (see Figure 4.7 and Figures 4.8a & b)

4.1.4 HIV expenditure and overall health expenditure

On average, in the selected countries shown in Table 4.2 AIDS expenditure as a share of health spending increased from 2001 through 2003. Between 2002 and 2003, the change in the share was considerably larger than between 2001–2002: 47% versus 7.4%. The Philippines is an exception. AIDS expenditure, as a percentage of health spending, decreased over the period 2001–2003. This is consistent with the trends in AIDS expenditure for the Philippines shown in Figure 4.2d.

Table 4.2: Trends in AIDS expenditure as a share of health expenditure

	2001	2002	2003
Cambodia	1.4%	2.1%	2.6%
India	0.1%	0.2%	0.4%
Indonesia	-	-	0.5%
Lao PDR	4.4%	4.0%	5.8%
Philippines	0.4%	0.2%	0.2%
Thailand	1.5%	2.0%	2.1%
Viet Nam	-	-	0.7%
Country weighted mean	1.1%	1.2%	1.7%

There is considerable debate whether the rapid increase in AIDS expenditure after 2002 (shown in Figure 4.3) has caused crowding out of non-AIDS health expenditure[9]. A study comparing trends in externally funded AIDS expenditure with trends in government funded health expenditure for selected African countries and found some evidence suggesting the crowding-out of government funded AIDS expenditure[10]. Once more country data are collated this issue will be explored in greater detail for the Asia region.

4.1.5 Sources of funding

Figure 4.4 shows government and external sources of funding. Note other domestic sources such as households and business are not reflected in this graph.

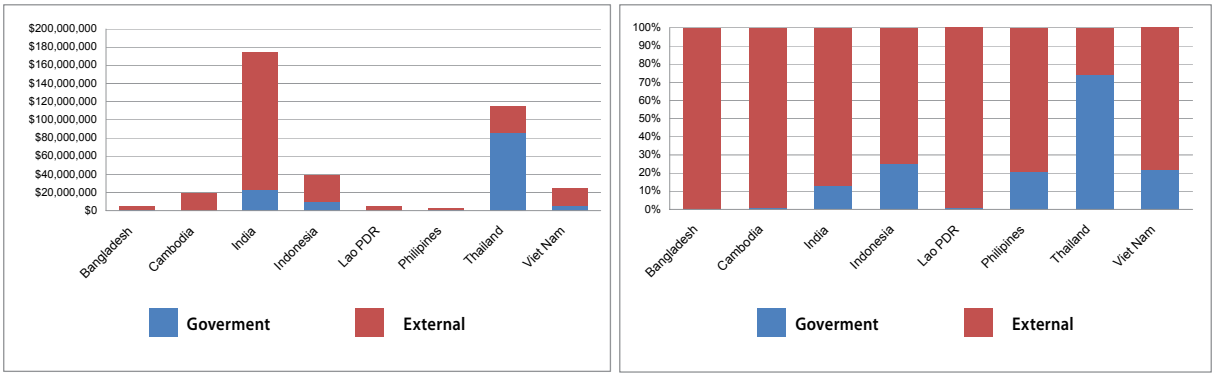


Figure 4.4 a & b: Government and external sources of AIDS funding, 2004

4.1.5.1 Government

Except for Thailand, governments in the selected Asia countries studies here do not contribute largest shares of AIDS expenditure (Figure 4.4b). Countries can be divided into three categories based on their share of AIDS expenditure funded by recipient governments.

(1) High: contributing in excess of a third of AIDS spending (e.g., Thailand);

(2) Moderate: contributing between a tenth and a third of AIDS expenditure (India, Indonesia; Philippines; Viet Nam[11]);

(3) Low: countries funding less than a tenth of AIDS expenditure (Bangladesh Cambodia; Lao PDR).

But, the actual level of government contribution also has to be taken into account (Figure 4.4a) to give a complete picture of government AIDS funding. See matrix presented in Table 4.3.

[9] Gottret P. and Schieber G.(2006), *Health Financing Revisited*, World Bank, Washington D.C.

[10] Lewis, Maureen (2005) Addressing the Challenge of HIV/AIDS: Macroeconomic, Fiscal, and Institutional Issues. *Center for Global Development Working Paper Number 58, April 2005.*

[11] Viet Nam will likely fall in the lower category if data for 2005 is used because disbursement from new funding sources such GFTAM and PEPFAR had increased substantially.

Table 4.3: Matrix showing government contribution and level of AIDS spending

		Total AIDS expenditure (per PLHA)	
		< US$ 100	> US$ 100
Government share of AIDS expenditure	< 10%	Bangladesh	Cambodia
			Lao PDR
	10% - 33%	India	Indonesia
		Viet Nam	Philippines
	> 33%		Thailand

4.1.5.2 External donors

The overwhelming share of AIDS expenditure is funded from external sources of funding. The average share for the selected countries shown in Figure 4.4 is 79.0% (and 86.8% if Thailand is excluded). It should be noted that for some countries the World Bank soft loans make up a significant share of external funding (e.g. India) and some may argue that this should be included as government-funded resources because the loans are ultimately paid back to the World Bank. Because of the long time horizon for repayments, the approach used here was to include Bank resources under external funds.

In recent years, the external sources for AIDS funding has become more diverse. Most notably are the GFATM and private foundations such as the Bill and Melinda Gates foundation, Clinton Foundation as well as the US government's PEPFAR resources. These sources of funding have been major drivers of the increase in funding for AIDS globally[12]. This is also the case for some countries in the Asia region. An example from India is illustrated in Figure 4.5.

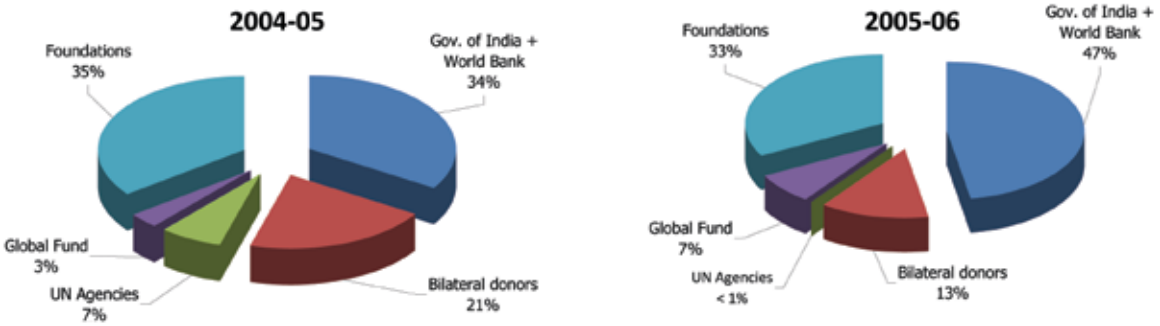


Figure 4.5: Disaggregate figures of AIDS Expenditure in India by Source of Funding[13]

[12] Lewis, Maureen (2005) Addressing the Challenge of HIV/AIDS: Macroeconomic, Fiscal, and Institutional Issues. *Center for Global Development Working Paper Number 58, April **2005**.*

[13] Martin, Gayle and Anit Mukherjee (2006) *"HIV Spending in India: How Much? From Whom? On What? Review of HIV Financing and Expenditure in India",* Policy Brief. Essential Advocacy Project, Constella Futures, New Delhi

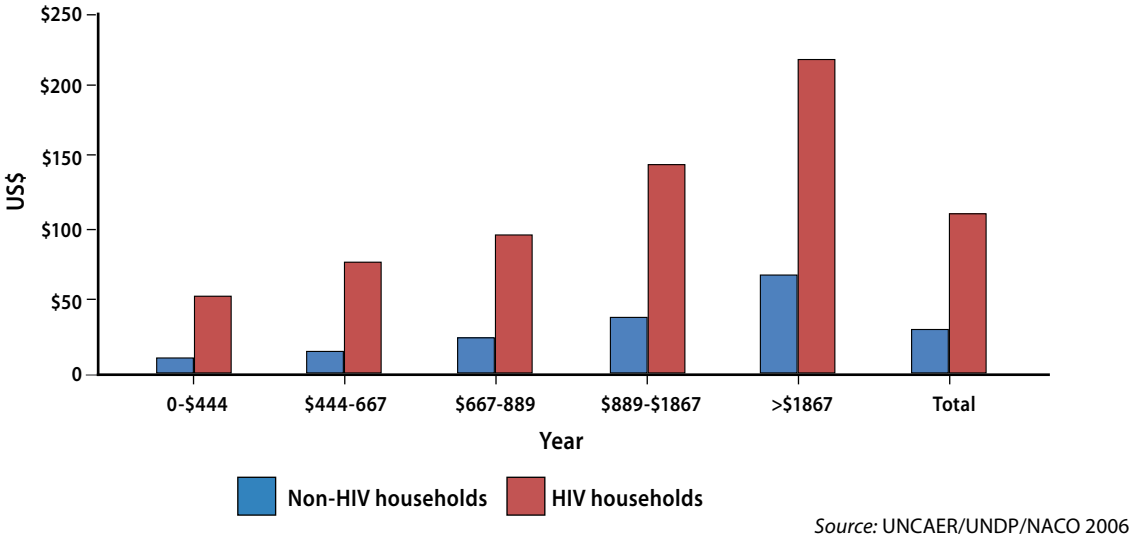
An issue that has not received enough attention in the AIDS financing literature is the financing mechanism used by donors. Four types of mechanisms can be identified:

- donor assistance that is not recorded in balance of payments[14];
- assistance recorded in the balance of payments, but not in government budget[15];
- on-budget donor assistance for earmarked projects; and
- general budget support[16].

The intention is not to present a normative prescription on which mechanism is best as each mechanism has advantages and disadvantages. It should however be noted that some of these mechanisms impose rigidities that make them less amenable to address certain implementation challenges that countries may be facing — an example is strengthening the capacity of heath system institutions (such investments in human resources, operational and financial management).

4.1.5.3 Households

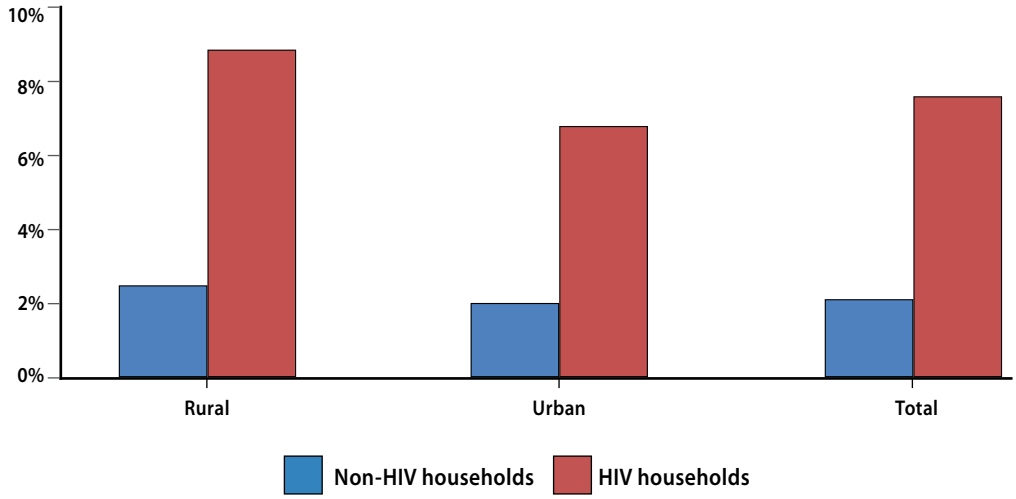
Household expenditure on health is typically hard to capture and are not reflected in total AIDS expenditure reported in this paper. One of the largest and most detailed assessments of household AIDS spending was recently done by the Indian National Council for Applied Economics Research (NCAER), UNDP and the Indian National AIDS Control Organization survey[17]. Households with a person with HIV spend on average approximately 300% more on medical expenses than non-HIV households in the study sample (Figure 4.6). The share of household consumption expenditure devoted to medical expenses is also higher: non-HIV households spend on average 2% of consumption expenditure on medical care, compared to between 7% and 10% by households with a person living with HIV (Figure 4.7). This is nearly double the benchmark of affordability of health expenditures: measured as 5% of household consumption expenditure[18].



Source: UNCAER/UNDP/NACO 2006

Figure 4.6: Health expenditure among household in India, with and without a person living with HIV

[14] For example, foreign technical assistance contracted and paid for by donors outside the beneficiary country.
[15] For example, activities implemented by NGOs inside the country outside of the government budgeting processes.
[16] Gottret P. and Schieber G.: *Health Financing Revisited*, World Bank, Washington D.C. 2006
[17] UNCAER/UNDP/NACO: Socio-economic Impact of HIV and AIDS in India. UNDP, 2006
[18] Wagstaff A, Doorslaer E. (2003): *"Catastrophe and impoverishment in paying for health care." Health Economics*. 12(11) 921-933



Source: UNCAER/UNDP/NACO

Figure 4.7: Share of household consumption expenditure spent on healthcare in India

4.1.6 Breakdown of AIDS expenditure by intervention category

There is substantial variation in how AIDS expenditure is spent in the various countries in the region. Figure 4.10 illustrates the wide variation in three countries, Cambodia, the Philippines and Thailand. In Cambodia and the Philippines more than half of total AIDS expenditure is devoted to prevention-related activities (52.7% and 64.7% respectively). In Thailand prevention expenditure accounted for a quarter (24.5%) of AIDS spending in 2002 and has since declined to just over a tenth (13.0%). The latter is largely explained by the dominance of expenditure on care and treatment in Thailand's AIDS spending profile. In 2001, care and treatment accounted for 59.5% of AIDS spending in Thailand and has since progressively increased to 69.9% of total AIDS spending. The "other" category includes expenditure on AIDS program costs and human resources (including wage benefits). In Philippines, a third on average (34.1%) of AIDS expenditure for 2000-2004 is devoted to these activities, while a small fraction of AIDS spending goes to care and treatment (on average, 1.2% for period 2000-2004) (Figure 4.10).

4.1.6.1 Prevention expenditure

There is a strong positive correlation between prevention expenditure and number of people living with HIV (r=0.996), as illustrated in Figure 4.8 a. A large share of India's expenditure is devoted to prevention (76%), and it is interesting that this strong correlation persists even if India is removed from the analysis (r=0.732) (Figure 4.8 b). HIV incidence and prevalence are conceivably better indicators of HIV risk in the population and one would expect a positive association between HIV prevalence and prevention expenditure. The problem with HIV prevalence variable is that there is too little variation in HIV prevalence for the countries in question. For example, 4 out of 9 countries listed in Table 4.2 have an HIV prevalence of 0.1%.

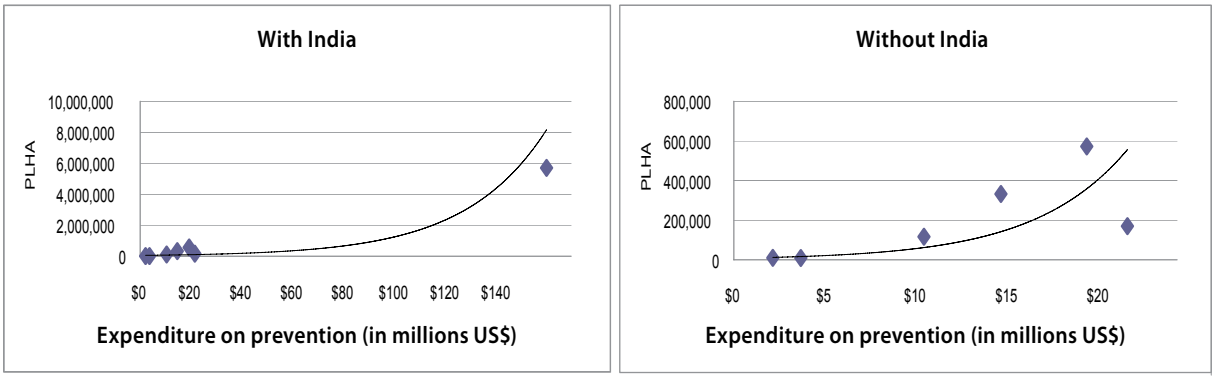


Figure 4.8a & b: Prevention expenditure and number of people living with HIV

4.1.6.2 Care and treatment expenditure

Figure shows that there appears to be no correlation between the number of PLWA and expenditure on care and treatment (r=-0.0498). This is quite surprising as one would have expected that countries' care and treatment expenditure increase commensurately with the number of people living with HIV. But, there are two important and opposite effects that have to be considered. The first is the impact of India. The share of India's AIDS expenditure on care and treatment for 2004 is relatively low (4%). At the other extreme is Thailand, with a strong commitment to care and treatment (69.9% of AIDS spending). If these two countries' influence is removed then a relatively strong positive association can be seen between expenditure on care and treatment and the number of people living with HIV (r=0.970) as illustrated in Figure 4.9.

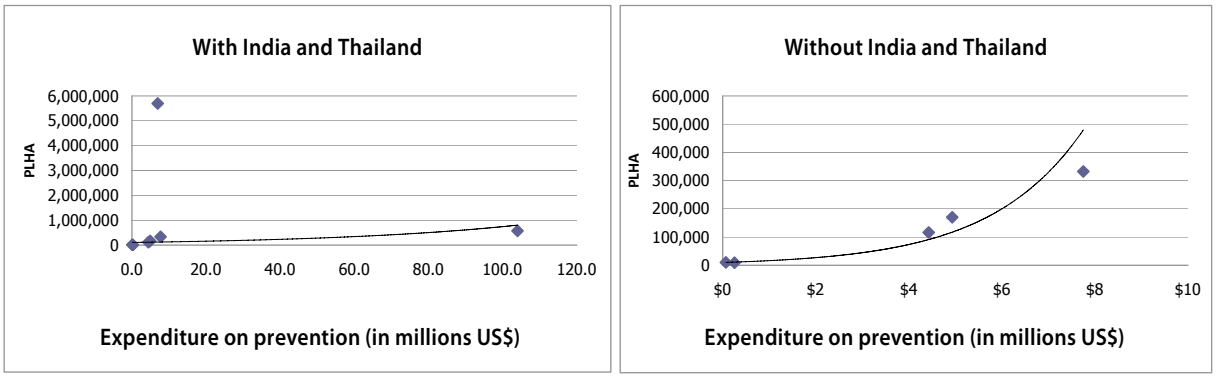


Figure 4.9: Care and treatment expenditure and number of people living with HIV

The data in most countries in the region do not allow for the breakdown of AIDS expenditure by specific intervention. Thailand, Viet Nam and Cambodia are the exceptions and breakdown by intervention is shown in Tables 4.1B to 4.1C in Note 4 B.

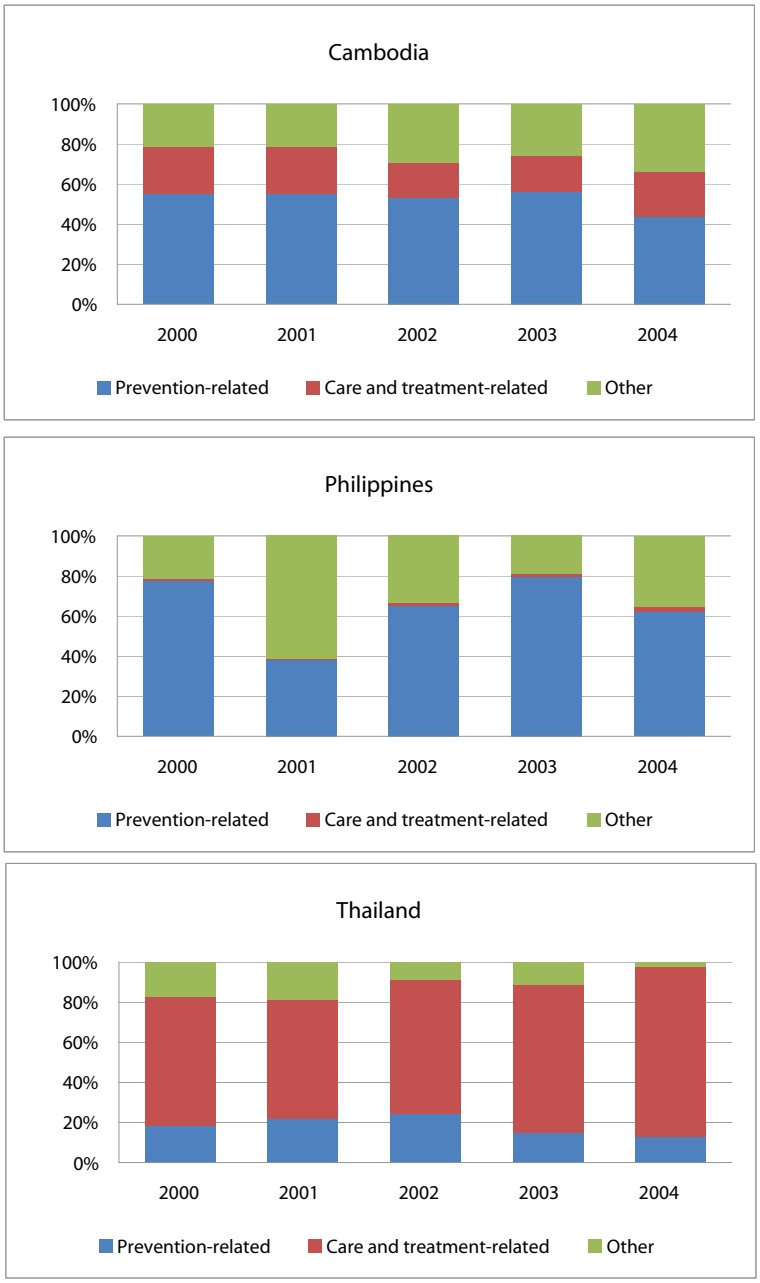


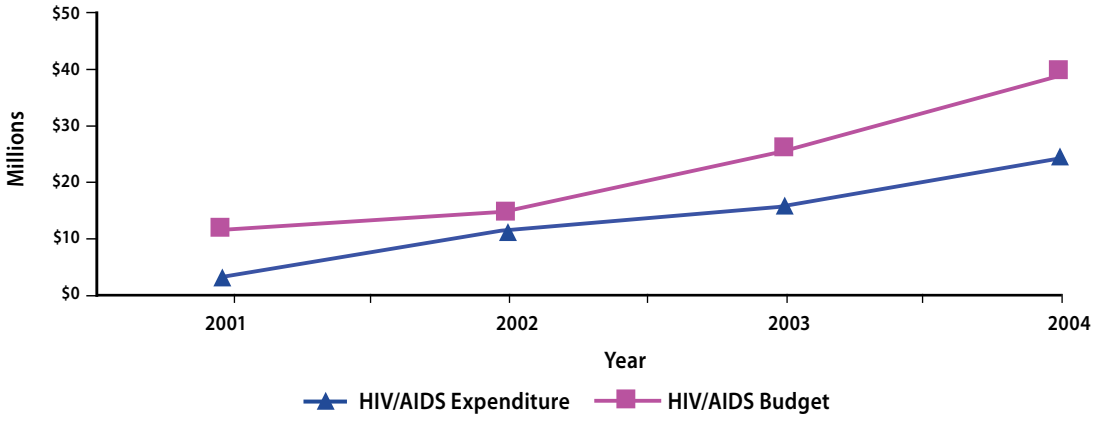
Figure 4.10: Breakdown of AIDS expenditure for selected countries 2000–2004

4.1.7 Absorptive capacity and implications for planning

Successful implementation of the response to HIV is about more than just money. While this paper primarily stresses financial issues, the human and institutional capacity requirements may also prove to be critical barriers even if additional financial resources are mobilized. Implementation capacity must therefore grow at the same pace in order to effectively utilize increases in financial resources.

Two examples are shown here from Cambodia and India in an attempt to get some insight into implementation capacity constraints that countries experience as more resources become available. This analysis is incomplete because the question whether resources that have been used are being used optimally is not addressed. Outcome or impact data needed to do that are not available.

Figure 4.11 shows the total financial resources available for AIDS in Cambodia. Using the best information possible the figure shows budgeted and actual expenditure for the period 2001–2004. In 2001, $16.2 million was available for HIV/AIDS and this increased to a budgeted $42.6 million in 2004. In 2001, $9.3 million was spent, leaving an estimated $6.9 million unspent, largely related to slow pace of scaling up. The variance between budgeted and actual expenditure increased between 2002 and 2004. In absolute terms, the largest difference between budgeted and actual spending was in 2004. In 2004, the difference between actual and available resources was a third (31%) of the budgeted $42.6 million.



Source:
Expenditure: Martin 2005,
Budget: Godwin 2005

Figure 4.11: Variance between budgeted and actual expenditure in Cambodia

Another example is from India. Figure 4.12 shows the variance between approved budgets and actual expenditure by National AIDS Control Program state category in India[19] and provides several insights on the utilization of AIDS resources. The actual expenditure did not necessarily increase commensurately with the increased resource availability in 2004/05. The variance becomes progressively larger over time — the median of the variance over the four state categories in 2004/05 was 36% compared to 13% in 2002/03 and 4% in 2003/04. Another important insight comes from the trend in actual expenditure over time for each state category. With the exception of the states in Group II, the actual expenditure by state category increased only fractionally between 2002/03 and 2004/05. The reasons for the under-expenditure are beyond the purview of this report, but it is worth noting that the preparation for the third National AIDS Control Program the National AIDS Control Organization paid special attention to the institutional factors that hinder implementation.

[19] States are grouped by prevalence. Group I: Andhra Pradesh, Karnataka, Maharastra and Tamil Nadu; Group II: Nagaland, Manipur, Mizoram; Group III: Kerala, Gujarat, Goa, West Bengal, Pondicherry, Delhi; Group IV: north, central, parts of the northeast.

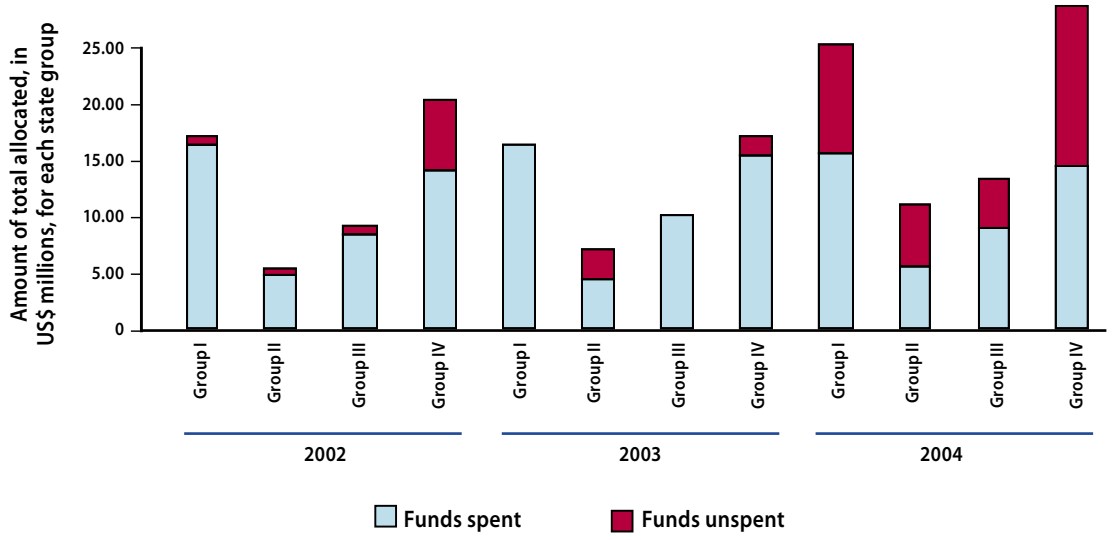


Figure 4.12: Variance between approved and actual expenditure by National AIDS Control Program state category in India

4.1.8 Issues that cannot be addressed with the current HIV expenditure information

There are several key issues that cannot be answered with the current AIDS expenditure information for most countries. Some of these are listed below:

- Verify what the actual expenditure is and make the distinction between budgeted or committed expenditure. Figure and Figure have illustrated that this is particularly important as more and more HIV resources are mobilized.
- Breakdown expenditure into intervention categories (e.g. prevention, care and treatment, and impact mitigation) as well as specific interventions (e.g. targeted interventions for sex workers, MSM, IDUs, PMTCT, VCT etc.). This would allow for a more sophisticated analysis of the resource gap and more targeted resource mobilization and well strategic resource allocation for optimal impact.
- Similarly, absence of information on the geographic distribution of expenditures within a country makes it hard to establish the geographic distribution of the resource gap and to inform geographic targeting of AIDS resources. This is particularly important in low prevalence and concentrated epidemics in the region because there is large variation in both HIV incidence and prevalence.
- Very little information is available on the impacts of the current resources that are being spent. Resource mobilization efforts are much more powerful by complementing estimates of resource needs with evidence on that the existing resources are put to optimal use and demonstrating what, based on this evidence, the anticipated impact of HIV. This information that is currently available does not allow for that type of analysis.

Many of these shortcomings will be resolved as strategic information systems are being improved in the region. Below is a summary of the initiatives underway in the region to improve the quality of AIDS expenditure data.

4.1.9 Processes underway to improve the quality of AIDS expenditure data

UNAIDS is providing leadership to improve the quality of AIDS expenditure information globally as well as specifically in the Asia region. To this end, the following initiatives have been undertaken:

1. Increase the number of countries with NASAs to report Domestic Public expenditure on HIV/AIDS for UNGASS (67 countries were included in the 2006 Global report)
2. Create and strengthen regional networks to conduct National Spending Assessments in all 7 regions across the globe
3. Significantly increase the number of NASA country experts through horizontal technical cooperation and strengthening capacity.

In the Asia region, regional NASA training workshops have been conducted in 2005/06 to strengthen capacity of country experts in AIDS spending assessments. This included the following sub-regions and countries: South-East Asia SEA (Thailand, Cambodia, Viet Nam, Lao PDR, Philippines, Myanmar) and South Asia (Pakistan, Bangladesh, Sri Lanka, and Maldives). Individual country projects have also been implemented for example in Thailand, Indonesia and India. In India, additional data are being collected through a series of pilot projects in three States with different levels of HIV epidemics (e.g. West Bengal, Tamil Nadu and Rajasthan). The projects will estimate financing flows and expenditures (including private expenditure) proving detailed information on financing intermediaries, implementing agent and providers, specific HIV and AIDS intervention and beneficiaries of services.

4.2 REVIEW OF UNIT COSTS AND COST-ANALYSES OF AIDS PROGRAMMES IN ASIA[20] *Anita Alban*

4.2.1. Introduction

This working paper is based on economic analysis of evidence-based and evidence-informed policies to reduce HIV prevalence in the Asia region. The author conducted an extensive review of the unit costs of important HIV and AIDS prevention and treatment activities in as many of the region's countries and AIDS programmes as possible, using information available in the public domain and a number of UNAIDS reports.

Much of the analyses include interrelated issues such as:

- the development of unit costs under different scale-up scenarios
- variations between unit costs between and within different countries
- identification of the main cost-drivers across HIV programmes
- the allocation of resources for monitoring, evaluation and research

4.2.2 Objectives

1. To disseminate information on unit costs of key HIV programmes in Asia based on examples of good practice that can be emulated elsewhere.
2. To analyse the cross-cutting issues emerging from the information generated.
3. To examine the use of unit costs for decision-making and planning when scaling-up AIDS programming in the Asia region.

4.2.3. Methodology

The results presented and the examples used in this report are from published studies on Asia and UNAIDS reports. The information gathered about the cost and cost-effectiveness of appropriate HIV programmes can be used to supplement and inform the estimated costs of specific HIV programmes in national strategic plans.

The sources used for the search were:

- PubMed http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?DB=pubmed
- World Bank http://www.worldbank.org
- International AIDS and Economics Network http://www.iaen.org
- UNAIDS http://www.unaids.org

Search words used included: costs, costing, cost-effectiveness, country name(s) and various groups whose behaviour exposes them to most risk of infection (i.e. injecting drug users, sex workers, prisoners and men who have sex with men). Antiretroviral treatments in various national contexts were also researched.Keywords were used separately and in various combinations.

[20] Based on a paper of the same title authored by Anita Alban

4.2.4. Challenges of costing AIDS programming

4.2.4.1 Sources of Data

Most of the data used in this working paper were derived from UNAIDS consultancy reports that were compiled to assist governments with the process of estimating the costs of their national strategic plans. These reports were either stand-alone exercises, or part of a broader agenda, such as an on-going evaluation of national responses to AIDS and HIV. Information about the costs of programmes aimed at injecting drug users and sex workers in the Lao People's Democratic Republic was from a UNAIDS national programme costing undertaken in connection with an application to the Global Fund to fight AIDS, Tuberculosis and Malaria.

It should be noted that the cost information currently available in the public domain is generally inadequate and incomplete, as countries in the region have only recently begun systematically to estimate costs for planning and scaling-up purposes. As governments and the international donor community are now investing an increasing amount of their financial resources in HIV prevention and treatment programmes, there is a growing need for reliable data.

4.2.4.2 Participatory Approach

Costing a national HIV-strategy involves more than collecting information about the cost of individual activities: it needs to be based on a participatory process involving key stakeholders such as government, donors, implementing nongovernmental organizations and national researchers and consultants. When a national strategic plan has been drafted, it then needs to be implemented through specific actions that can be costed. [Decisions also need to be taken as to which activities should be scaled-up and to what extent. In order to do this, it is necessary to assess the coverage and targets of existing programmes. A costing process based on a participatory approach in a number of countries in Asia is outlined in Figure 4.13 below.

Figure 4.13 : Costing process

It is difficult to establish the present coverage of HIV activities because few national programmes have a complete overview of which NGOs are doing what and where. Although mapping is ongoing in projects being implemented by NGOs, estimating the extent of coverage of specific programmes remains an issue. For example, some NGOs collect data on how many sex workers, injecting drug users and men who have sex with men are registered in intervention programmes, but information on how often they are seen or how many receive follow-up services is often scarce, even though this information is necessary for evaluating a programme's effect.

4.2.4.3 Best Practices

One of the greatest challenges is determining which good practice activities should be emulated in scaling-up to the desired level of coverage. Not all nongovernmental organizations evaluate the effectiveness of programmes and activities in the same way. Programmes serving as best practice models to be emulated elsewhere must include minimum requirements of performance, as defined by UNAIDS and/or WHO guidelines.[21]

Once a national HIV strategy has been put into practice, best practice cases have been identified and the levels of present and future coverage decided, a number of technical issues also need to be addressed by national policy-makers and planners. These include:

- Choice of economic or financial cost
- Choice of total or incremental cost
- Choice of perspective: consumer or provider, or both
- Decision on inclusion of indirect costs
- Decision on how to handle capital costs: start-up costs or depreciation of costs.

Transparency in these choices is essential and it is a requirement for dissemination of good practice cost studies. Cost studies for academic purposes, as part of a cost-effectiveness study or as a stand-alone cost study, are rarely based on a participatory approach. Instead, the research team makes choices based on the objectives of that particular study.

4.2.5. Guidelines for costing AIDS programmes

4.2.5.1 A Brief History

In 2000, UNAIDS issued comprehensive costing guidelines for a range of HIV activities, including the use of spreadsheets for collecting cost data at country-level.[22] The guidelines introduce the concepts of costs and list key questions to be addressed in HIV prevention activities.[23] They offer guidance to AIDS programme managers and workers in deciding on the most appropriate way of delivering a particular service, including important questions to be addressed about cost components and variables of individual HIV prevention activities.

A number of five-year national AIDS strategies were launched in the Asia region during the late 1990s. These were based on situation analyses and planned responses to the AIDS epidemic. Some national HIV strategic plans tried to prioritize AIDS activities, but did not attempt to provide comprehensive costing for future scaled-up programmes. It was not until 2000, when new five-year national HIV

[21] See www.unaids.org.

[22] UNAIDS. (2000). *Costing Guidelines for HIV Prevention Strategies.* 1–140. Geneva.

[23] These were adapted from costing guidelines for primary healthcare interventions previously published by Creese & Parker (1994).

strategies were being formulated, that decision-makers became aware of the importance of costing for AIDS programming. This process happened in partnership with public and private institutions, nongovernmental organizations and multinationals as well as the bilateral donor community.

Nepal was one of the first countries in Asia to carry out a systematic costing of its five-year strategy for scaling-up strategies for AIDS programming in collaboration with key stakeholders.[24] This exercise revealed that it would not be possible or practicable to carry out individual cost studies for all HIV programme activities because:

- It would be too time- and resource-consuming
- There were many providers offering (in principle) similar HIV services (which ones should be costed?)
- National AIDS programme managers would be excluded from the process.

To overcome these challenges it was decided to develop a rapid costing approach that would make it possible, in collaboration with key providers of HIV services (government, private providers and NGOs), to estimate unit costs of key programme activities for planning purposes.[25] The aim of rapid costing is to assist with developing unit costs for relevant AIDS responses within national contexts.

4.2.5.2 The INPUT Model

This rapid costing approach has been documented and its spreadsheet tool (INPUT) disseminated through the *Costing Guidelines for HIV/AIDS Intervention Strategies*.[26] The INPUT spreadsheet can be used for estimating resource needs, scaling-up and strategic planning of core HIV programmes in the Asia region.[27] The rapid costing approach uses available local data, including budgeting and accounting material and local prices (made available from various programmes as appropriate). It also uses a spreadsheet tool (Excel) referred to here as INPUT for costing AIDS programmes within a national AIDS strategy. Data from examples of good practice programmes within the country of the region can then be incorporated.

The INPUT model includes:

- A summary of total annual resources needed for prevention, treatment and mitigation strategies over the planning period with emphasis on key HIV programmes;
- A framework for planning annual coverage of each HIV programme;
- Unit costing of HIV programmes that are relevant to the country as well as to common key HIV programmes for the region.

Unit costs work best for planning purposes and for scaling-up programmes. There are several ways of defining unit costs, including:

- Cost per annum of prevention and treatment programmes aimed at injecting drug users, sex workers and men who have sex with men
- Annual cost of providing antiretroviral treatment to people who need it

[24] **Alban A and Hahn M. (2002).** *Costing of Nepal HIV Strategy 2002–2006.* 1–26. Kathmandu: DFID.
[25] **Alban A and Hahn M. (2002).** *Costing of Nepal HIV Strategy 2002–2006.* 1–26. Kathmandu: DFID.
[26] **ADB and UNAIDS. (2004).** *Costing Guidelines for HIV/AIDS Intervention Strategies*. 1–46. Manila and Bangkok.
[27] **ADB and UNAIDS. (2004).** *Costing Guidelines for HIV/AIDS Intervention Strategies*. 1–46. Manila and Bangkok.

- Cost of monitoring people living with HIV who may need antiretroviral treatment
- Cost per prisoner of HIV programmes
- Cost per safe blood unit.

4.2.5.3 Economic vs. Financial Costs

The overall principle in the rapid costing approach is average cost, which includes only the costs of adding or implementing extra services to existing services.[28] When enough data has been gathered, the full economic costs can then be worked out. The data includes known financial costs and expenditures incurred (such as salaries for personnel), and purchase and distribution of commodities (e.g. needles, syringes and condoms). These economic costs also take into account the fact that while volunteers and donated goods such as computers may not have a direct financial cost to the organisation concerned, they still use resources, labour and equipment in this case, that could be productively used elsewhere. This captures a broader but more accurate picture of all resources used rather than just financial costs.

The INPUT spreadsheets are inter-linked. For example, if the number of injecting drug users to be reached or the salary figure changes, the spreadsheets can automatically re-calculate all dependent variables and provide new summaries and overviews of resource allocation (For more information on how the INPUT model operates, see *Costing Guidelines for HIV/AIDS Interventions Strategies.* [29]).

This costing process is conducted from the point of view of service providers, such as public and private heath care systems, NGOs and other ministries (e.g. ministries of justice responsible for prison programmes). Other possible costs to the client including time spent on training and cost to dependants and relatives are by their very nature often difficult or expensive to quantify. Large out-of-pocket expenses for clients such as food and drugs, transportation costs, and income lost as a result of time spent away from income-earning activities can be major — and sometimes even the predominant cost of treatment. Not surprisingly, the studies we reviewed frequently omitted these, but this should not be read to mean that such out-of-pocket expenses and costs are inconsequential. On the contrary, these costs are genuinely large and important.

Box 4.1: A Country Example: Resource needs for HIV activities 2007–11 (2007 prices, US$)

Scenario: High coverage of most-at-risk populations, low- to medium-coverage of prevention of mother to child transmission programmes and migrant workers, and modest delivery of antriretroviral treatments (other prevention activities, including blood/injection safety not included).

HIV programmes for specific populations	2006	2007	2008	2009	2010	2006–10
Injecting drug users programme (drop-in centre-based)	1 651 724	2 312 414	2 973 104	3 633 794	4 294 483	14 865 519
Injecting drug user programmes (motorcycle-based outreach)	1 113 148	1 558 407	2 003 666	2 448 925	2 894 184	10 018 330

[28] For example, the cost of scaling-up from one coverage level to another (for more on full and incremental costs please refer to chapter 2.3 in the *UNAIDS Costing Guidelines* (*Costing Guidelines for HIV Prevention Strategies.* 1–140. Geneva.UNAIDS, 2000).

[29] ADB and UNAIDS (2004). *Costing Guidelines for HIV/AIDS Intervention Strategies*. 1–46. Manila and Bangkok.

Sex workers	1 324 178	2 118 684	2 913 191	3 972 533	5 190 776	15 519 361
Men who have sex with men	1 178 667	2 357 334	3 928 889	5 893 334	8 119 705	21 477 929
Prison populations	293 525	335 457	419 321	503 185	542 383	2 093 872
Migrant workers	375 000	1 125 000	1 500 000	1 500 000	1 500 000	6 000 000
Other mobile populations	375 000	1 125 000	1 500 000	2 250 000	3 000 000	8 250 000
Mother to child transmission	262	1 050	3 149	5 248	7 872	17 581
Youth on the streets	150 000	375 000	900 000	1 275 000	1 800 000	4 500 000
Voluntary counselling and testing	175 114	175 114	175 114	175 114	218 893	919 350
Highly active antiretroviral treatment	332 425	775 658	3 005 938	4 809 500	8 416 625	17 340 146
Treatment of opportunistic infections	277 992	330 408	392 652	466 502	549 507	2 017 061
Behavioural change Communications for general population, including condom social marketing	500 000	1 000 000	1 500 000	2 000 000	2 500 000	7 500 000
Capacity-building	1 000 000	1 500 000	2 000 000	2 500 000	2 500 000	9 500 000
Monitoring, evaluation and research	300 000	250 000	250 000	250 000	250 000	1 300 000
Surveillance	3 500 000	3 500 000	3 500 000	3 500 000	3 500 000	17 500 000
Operational Research	500,000	500,000	500,000	500,000	500,000	2,500,000
National coordination	100 000	100 000	100 000	100 000	100 000	500 000
Regional coordination	100 000	100 000	100 000	100 000	100 000	500 000
Total	**13 247 035**	**19 539 526**	**27 665 024**	**35 883 136**	**45 984 429**	**142 319 149**

4.2.6 Costs of HIV prevention programmes: Experience from Asia

The findings from a range of cost-analyses of HIV prevention activities in Asia are introduced in Table 4.5. This focuses on unit costs relevant to scaling-up existing activities. More comprehensive discussions of the methods and the results of individual cost-estimations follow.

Some examples of estimated unit costs from different countries of Asia, using INPUT, are presented below, although the intervention activities and the quality of services vary from country-to-country. In some cases, activity-specific cost estimates are not available. Specifically, the Bangladesh figures have been obtained from studies reported in the literature, but have not necessarily been generated using INPUT.[30]

[30] **Guinness L, Kumaranayake L, Rajaraman B, Sankaranarayanan G, Vannela G, Raghupathi P** *et al.* (2005). Does Scale Matter? The costs of HIV-prevention interventions for commercial sex workers in India. *Bulletin of the World Health Organization* 83(10):747–55.

Table 4.5: Examples of unit costs of HIV prevention activities in Asia

HIV prevention activities	Unit cost (2006 US$)	Unit	Countries	Comments
Injecting drug user programmes	69–157	per person per year	Bangladesh, Nepal and Pakistan	Mixture of drop-in clinic and outreach services
Sex worker programmes	53–121	per person per year	Bangladesh, the Lao People's Democratic Republic, Nepal and Pakistan	Bangladesh's programmes are brothel-based
Men who have sex with men programmes	47–129	per person per year	The Lao People's Democratic Republic, Nepal and Pakistan	Mixture of drop-in clinic and outreach services
Treatment of sexually transmitted infections for general population	14–27	per infection treated	Cambodia and Nepal	Cambodia figures from the military
Voluntary counselling and testing	15–18	per counselling session (pre- and post-counselling)	Cambodia, Nepal and Pakistan	Cambodia figures from the military
Blood-screening	13–17	per bag of blood	Nepal and Pakistan	Programmes made comparable
Youth peer education	11	per youth per year	Nepal	
Prison population programmes	8	per prisoner, per year	Pakistan	Nine prisons (low HIV prevalence)
Peer education, military	4	per military person	Cambodia	
Youth awareness	1	per youth per year	Nepal	

4.2.6.1 Programmes aimed at injecting drug users

The behaviour of injecting drug users has a great influence on the development of Asian epidemics. Once HIV becomes established among drug users, the infection is spread through use of contaminated needles or equipment. Infected injecting drug users who also visit sex workers can significantly accelerate the growth of HIV prevalence among sex workers.[31] They in turn pass the infection to their clients and through them to the clients' spouses and the general population. Consequently, keeping HIV prevalence low among injecting drug users through harm reduction initiatives such as needle exchange programmes, counselling, condom distribution and expanding access to drug substitution therapies, is essential for reducing AIDS prevalence in Asia.

The Commission on AIDS in Asia has argued that national programmes aimed at injecting drug users need to achieve a 60% behaviour change to make a significant impact on the spread of HIV epidemics in Asia.[32] However, programmes aimed at injecting drug users in Asia generally reached less than three per cent of those in need of services in 2005[33] although this is changing rapidly. A number of countries (for example, Nepal, Pakistan and Myanmar) are now planning significant scaling-up of interventions aimed at people whose behaviour places them at greatest risk of infection.

[31] Ruxrungtham K, Brown T, Phanphak P. (2004). HIV/AIDS in Asia. *The Lancet* 364 (July 3): 69–82.

[32] Report of the Commission on AIDS in Asia (2008). *Redefining AIDS in Asia: Crafting an effective response.*

[33] *Stover, J & Fahnestock M (2006). Coverage of Selected Services for HIV/AIDS Prevention, Care and Treatment in Low- and Middle-Income Countries in 2005, Washington, DC, Constella Futures, POLICY Project.*

4.2.7 Comparison across countries

In 2007, cost-effectiveness studies of three Asian programmes aimed at injecting drug users became available. These are Bangladesh[34], Karachi in Pakistan[35] and Nepal.[36]

The findings of these three studies are presented and discussed in Tables 4.6a, 4.6b and 4.6c.

Table 4.6a: Annual costs of programmes for injecting drug users in Bangladesh in 2000 (includes drop-in centres and outreach programmes)

Cost component	US$	%
Behaviour Change		
Staff	171,380	41.00
Training	4,180	1.00
Running cost	20,900	5.00
Information and education campaigns	-	-
Commodities & Services	204,820	49.00
Syringes	-	-
Condoms	-	-
Medicines	-	-
Detoxification	-	-
Enabling environment		
Investments	12,540	3.00
Monitoring, evaluation and research	4,180	1.00
Total	**418,000**	**100.00**
Unit cost (2,654 units)	***157***	

Note: Adapted to the INPUT format from the CARE-SHAKTI report [37]

The CARE-SHAKTI project in Bangladesh has adopted a mixture of outreach activities and drop-in centres to reach their clients with services to prevent and reduce HIV infections among injecting drug users. The first year programme costs of US$ 464 000 are much higher than those for subsequent years due to extensive investments in training in the start-up period. The number of injecting drug users accessing the services increased from 1302 in 1999 to 2654 in the following year, but the unit cost for 1999 was US$ 322 compared to US$ 157 in 2000. Staffing accounted for 41% of expenditure but the biggest cost was for commodities such as syringes, needles and condoms, medicines and services that accounted for 49% of the total budget.[38]

[34] Guinness L, Foss A, Watts C, Quayyum Z, Vickerman P, Azim T, Jana S, and Kumaranayake, L. (2006). *Modeling the Impact and Cost-effectiveness of CARE-SHAKTI: An HIV prevention programme for injecting drug users and sex workers in Bangladesh*. DFID.

[35] Alban A, Fatima M, Hansen DH, Nielsen S. (2007b). *Cost-effectiveness of Injecting Drug User Interventions to Prevent HIV in Karachi, Pakistan.* 1–23. Manila and Bangkok: ADB and UNAIDS.

[36] Alban A and Manuel C. (2007a). *Cost-effectiveness of Injecting Drug User Interventions to Prevent HIV in Kathmandu, Nepal.* 1–22. Manila and Bangkok: ADB and UNAIDS.

[37] Guinness L, Foss A, Watts C, Quayyum Z, Vickerman P, Azim T et al. Modelling the impact and cost-effectiveness of CARE-SHAKTI: an HIV prevention programme for injecting drug users and sex workers in Bangladesh. 2006. London School of Hygiene and Tropical Medicine, Institute of Health Economics University of Dhaka, ICDDRB, CARE Bangladesh.

[38] The project in Bangladesh did not include a detoxification programme.

The Bangladesh study raises the important issue of implementation costs. Some cost-analyses, such as this one in Bangladesh, estimate costs on an annual basis, but others spread the implementation overheads over the planning period. In the case of Pakistan, implementation costs are spread over five years. This approach is ideal for planning purposes but cannot be used for budgeting.

How much services cost will also depend on the approach adopted. For example, in the case of programmes aimed at injecting drug users, the costs will vary depending on whether drop-in centres or mobile outreach services are adopted. The Pakistan Society, a nongovernmental organization providing harm reduction services to injecting drug users in Karachi, spends:

- US$ 169 a year on each injecting drug user reached by a mobile centre;
- US$ 164 on each drug user using one of three drop-in centres; and
- only US$ 97 per head each year on outreach services provided using motorcycles.

4.2.7.1 A Mixed approach

UNAIDS recommends a mixed approach for provision of HIV services to injecting drug users, and to achieve this, we amalgamated the figures for all clients using outreach services with the numbers using drop-in centres and merged these services into one overall service group. This gives us an average annual expenditure of US$ 131 per injecting drug user.

Box 4.2 shows the consequences of amalgamating expenditure on drop-in centres and outreach services so that the data from Pakistan, Bangladesh and Nepal can be compared.

Box 4.2: Unit costs of individual and merged injecting drug user services, Pakistan, 2006

Services	Individual intervention activities		Merged drop-in centres and outreach services	
	US$	Unit cost	US$	Unit cost
Mobile	28 204	169		
Outreach	41 221	97		
Drop-in centres	42 137	164		
Total	111 561		111 561	131

Table 4.6b shows the total cost and components for drop-in centres, after the transfer of all clients previously using the mobile client services. Table 4.6c shows the merged drop-in centre and outreach services using motorcycles.

Tables 4.6b and 4.6c: Annual costs of drop-in centres and outreach services for injecting drug user in Pakistan in 2006

Drop-in centres including mobile centres			**Merged drop-in centres and outreach services using motorcycles**		
Cost component	**US$**	**%**	**Cost Component**	**US$**	**%**
Behaviour Change			*Behaviour Change*		
Staff	15,659	22.26	Staff	24,595	22.05
Training	310	0.44	Training	368	0.33
Running Costs	17,954	25.52	Running Costs	21,963	19.69
Information and education campaigns	310	0.44	Information and education campaigns	368	0.33
Commodities & Services			*Commodities & Services*		
Syringes	21,392	30.41	Syringes	42,783	38.35
Condoms	2,126	3.02	Condoms	6,377	5.72
Medicines	4,720	6.71	Medicines	6,419	5.75
Detoxification	3,724	5.29	Detoxification	4,413	3.96
Enabling environment			*Enabling environment*		
Investments	3,448	4.90	Investments	3,448	3.09
Monitoring, evaluation and research	*698*	*0.99*	*Monitoring, evaluation and research*	*827*	*0.74*
Total	**70,341**	**100.00**	**Total**	**111,561**	**100.00**
No. of clients	***425***		***No. of clients***	**850**	
Unit cost per year	***166***		***Unit cost per year***	***131***	

Note: The Pakistan Society runs the HIV programmes aimed at injecting drug users shown in Box 4.2. The total cost and unit costs of drop-in centres and outreach programmes are merged for comparative purposes.

If current service provision of HIV services for injecting drug users is merged with thefigures from the example of the Pakistan Society, we get an average annual cost of US$ 131 for each service-user. The unit cost of outreach services at US$ 97 per person (see Box 4.2) is significantly lower than that for drop-in centres, but outreach services cannot exist in a vacuum; they need support and a base for staff.

It is not known how many orhow often injecting drug users alternate between these services, or how many clients are using more than one service in any given year. Pakistan's unit cost of US$ 131 for services to injecting drug users is similar to the unit cost in Bangladesh of US$ 157 (at 2000 prices) which did not include mobile services.

The final example of cost components of services for injecting drug users in Nepal (see Table 4.6d below) is also a mix between drop-in centres and outreach services — but at a unit cost of US$ 59 that is half the amount spent in Pakistan or Bangladesh.

Table 4.6d: Annual costs of drop-in centres and outreach services for injecting drug user in Nepal

Cost component	US$	%
Behaviour Change		
Peer education, including training	8,404	14.14
Outreach/drop-in centres	1,940	3.26
Outreach worker and supervisor	10,091	16.98
Information and education campaigns and events	1,009	1.70
Commodities & Services		
Syringes/ needles	21,024	35.37
Condoms	3,600	6.06
Primary health care	226	0.38
Enabling environment	1,009	1.70
Programme Management	9,056	15.24
Investments	259	0.44
Monitoring and evaluation at 5% of running costs	2,818	4.74
Total	**59,436**	**100.00**
Unit	**59**	
Unit cost per year	**1,007**	

The cost components of the Nepal example differ somewhat from those in the example of Pakistan since staffing costs for drop-in centres and outreach services are split almost 1:5, with most staff being allocated to outreach services. Remuneration of peer educators (including training) amounts to 14% of the costs.

As in Pakistan and Bangladesh, providing syringes and needles is by far the biggest single cost, accounting for 35% of expenditure. Distribution of condoms accounts for 6% of Nepal's budget for injecting drug users, similar to the amount spent on merged drop-in centres and outreach services in Pakistan. Programme management accounts for 15% of the total cost of US$ 59 000 and at a unit cost of US$ 59 at full capacity.

Consequently, Nepal's approach to programmes aimed at injecting drug users appears to be highly competitive compared with those in Bangladesh and Pakistan.

4.2.7.2 Expensive Commodities

Overall, these three country examples of programmes aimed at injecting drug users reveal that provision of clean syringes and needles are the most expensive element, accounting for between 35 and 45% of total costs.

It is also worth noting that the daily payment for outreach workers is much lower than that of social workers and other personnel, including support personnel. The question is whether this remuneration reflects the opportunity cost of the outreach workers.[39] If not, financial costs and economic cost will be different, and data comparisons from different countries will have to compensate for this.

[39] If the outreach workers could work as social workers or other personnel at a higher pay-scale, the opportunity cost is the cost of them foregoing that work in order to do outreach work.

These significant differences between the unit costs of programmes for injecting drug users in the three countries could be due to the fact that estimation of costs in Bangladesh and Pakistan is retrospective, while Nepal's is a forward projection based on examples of existing good practice and scaling-up to an anticipated 100% capacity in the country. If only 70% of capacity were to be achieved — as was the case in Pakistan in 2006 — the unit cost would increase to US$ 70.[40]

4.2.8 Cost-analyses of HIV programming for sex workers

Controlling the spread of HIV among sex workers is another key to curbing the AIDS epidemic.

As we have just heard, in the Asian context HIV usually spreads rapidly in the first instance among injecting drug users due to the use of contaminated needles and syringes. Many injecting drug users also visit sex workers, and as a result, the HIV epidemic among sex workers is often preceded by an epidemic among injecting drug users. This can also be seen from the growing HIV prevalence in sentinel surveillance among sex workers and their clients who also have sexually transmitted infections.[41]

In the following tables we show two examples of costing of HIV programmes for sex workers, one from Bangladesh which is brothel-based, and the other from Nepal which is street-based.

Table 4.7a: Annual costs of programmes for brothel-based sex workers in Bangladesh, 2000

Cost component	US$	%
Behaviour Change		
Staff	182,490	79.00
Training	4,620	2.00
Running Costs	0	0
Information and education campaigns		
Commodities & Services	20,790	9.00
Condoms		
STI Services	6,930	3.00
Enabling environment		
Investments	11,550	5.00
Monitoring, evaluation and research	4,620	2.00
Total	**231,000**	**100.00**
Unit cost	***360***	

Note: This table is adapted to the INPUT format from CARE-SHAKTI report (Guinness et al, 2006)

In Bangladesh, the biggest cost of sex worker programmes (whether brothel- or street-based) is staff. In the CARE-SHAKTI project, which works through brothel-based programmes, peer educators, social workers and coordinators constitute 79% of total costs.[42] An average of 604 sex workers a year accessed the programme between 1997 and 2000.

40 2002 prices.

41 Brown, 2005.

42 Guinness L, Foss A, Watts C, Quayyum Z, Vickerman P, Azim T, Jana S, and Kumaranayake, L. (2006). *Modeling the Impact and Cost-effectiveness of CARE-SHAKTI: An HIV prevention programme for injecting drug users and sex workers in Bangladesh*. DFID.

Table 4.7a illustrates figures from 2000. These costs are lower than the US$ 380 in the previous year because there were fewer overheads and training costs once the programme had been established.

The example from Nepal of costing HIV programmes for street-based sex workers is based on the INPUT framework and reveals more details of the cost components. This is shown in Table 4.7 below.

Table 4.7b: Annual cost of HIV programmes for street-based sex workers in Nepal, 2002 prices

Cost component	US$	%
Behaviour Change		
Training of peer educators	1,589	3.95
Remuneration of peer educators	6,727	16.73
Outreach workers and supervisors	9,314	23.17
Outreach services and drop-in centres	1,940	4.83
Information and education campaigns and events	194	0.48
Commodities & Services		
Condoms	9,600	23.88
Treatment of sexually transmitted infections	2,409	5.99
Enabling environment	996	2.48
Programme Management	5,175	12.87
Investments	362	0.90
Monitoring and evaluation, estimated at 5% of total costs	1,897	4.72
Total	**40,204**	**100.00**
Units	***1,000***	
Unit cost	***40***	

The breakdown of costs associated with programmes for sex workers in Nepal shows that salaries for outreach workers and their supervisors, together with remuneration for peer educators, account for approximately 40% of all costs. In this example, 67 peer educators are paid 17% of total resources and the salaries of five outreach workers account for 23% of the total budget.

The biggest single item of expenditure is the provision of free condoms, which accounts for 24% of expenditure, while treatment of sexually transmitted infections accounts for a further 6%.

The total cost of delivering these services at full capacity for 1 000 sex workers operating in one place is US$ 40 000, which gives a unit price of US$ 40.

This is significantly lower than the costs of Bangladesh's brothel-based programmes.[43] However, it must be remembered that the calculations for Bangladesh are based on retrospective costs, while the cost data for Nepal are anticipated, based on scaling-up existing programmes that are considered good practice.

4.2.9 HIV programmes in prisons

In Bangkok, 43% of injecting drug users reported they had also been in prison in the previous three years; in northern Thailand, 56% said they had been in prison at some time or other, with 20% having served prison terms in the previous year. By comparison, in Jakarta only 25% of injecting drug users reported having been in prison.[44]

This illustrates the fact that a high percentage of people whose behaviour exposes them to risk of infection are also often imprisoned. Infection spreads fast in closed communities. When prisoners are released and return to their wives or other sexual partners (including sex workers) there is an increased risk of HIV spreading further in the general population. Prisons can therefore be perceived both as a health hazard and as an opportunity to reach groups whose behaviour exposes them to risk. Behavioural change communication, voluntary counselling and testing, counselling to promote safer sexual behaviour during and after imprisonment, and treatment of sexually transmitted infections can be provided to prisoners. Consequently, money invested in effective prison programmes gives a high return to societies with concentrated epidemics.

The literature search conducted by the author in compiling this working paper identified one study from Thailand[45] on HIV and prisons. This study surveyed a prison cohort of 689 male inmates in Bangkok Central Prison. Of these, 51% were injecting drug users and half of these continued to inject during their time in prison. Of these, 95% used the same needles as other prisoners. HIV infection rates were 4.2% for all prisoners and 11.1% among those injecting drugs. The study recommends that harm reduction measures and HIV intervention strategies should be implemented to prevent the spread of HIV among prisoners and subsequently into the general community when prisoners are released.[46] The literature search did not reveal any examples of evaluation of HIV programmes carried out in prisons.

In 2006, Pakistan estimated the resources needed for different scenarios of HIV programming over the next five years. This work included a cost estimation of an NGO programme being implemented in nine prisons in Sindh province and scaled-up to cover most male prisons over five years. The resource allocation of this prison programme is shown in Figure 4.14.

[43] For more details on the cost calculations, see *Costing Guidelines for HIV and AIDS interventions in the Asia and Pacific* (ADB and UNAIDS. (2004). *Costing Guidelines for HIV/AIDS Intervention Strategies*. 1–46. Manila and Bangkok).

[44] Beyrer C, Juttiwutikarn J, Teokul W, Razak MH, Suriyanon V *et al*. (2003). Drug Use, Increasing Incarceration Rates, and Prison-associated HIV Risks in Thailand. *AIDS & Behavior* 7(2):153–161.

[45] Thaisri H, Thaisri H, Lerwitworapong J, Vongsheree S, Sawanpanyalert P, Chadbanchachai C, Rojanawiwat A *et al*. (2003). HIV infection and risk factors among Bangkok prisoners, Thailand. *BMC Infectious Diseases* 3(25):2334.

46 Thaisri H, Thaisri H, Lerwitworapong J, Vongsheree S, Sawanpanyalert P, Chadbanchachai C, Rojanawiwat A *et al*. (2003). HIV infection and risk factors among Bangkok prisoners, Thailand. *BMC Infectious Diseases* 3(25):2334.

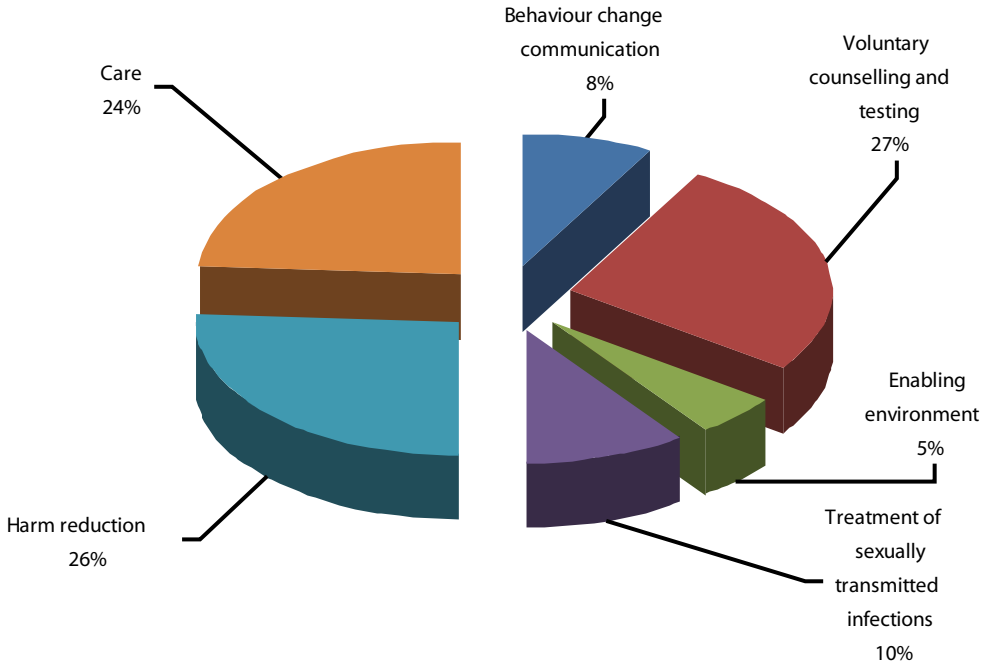


Figure 4.14: Allocation of resources between prison sub-programmes, Sindh province, Pakistan, 2006

The cost per prisoner for this programme was eight US dollars.[47] This represents value for money and this programme could be emulated elsewhere in Asia as an example of good practice if a detoxification component were added (In eastern Europe, the Ministry of Justice of the Republic of Estonia included a detoxification component in its prison programme, adding 15% of total resources to the programme. The Estonian prison programme also included diagnostic tests and vaccination against hepatitis B, which accounted for 12% of total resources.[48]).

Table 4.8: HIV prison programmes in nine prisons of 15,000 prisoners, Pakistan, 2006

Activities	US$	%	Comments
Voluntary counselling and testing once per year (33%)	34,617	27.52	5,000 prisoners
Treatment of sexually transmitted infections, 20% per year	12,070	9.59	3,000 prisoners
Harm reduction	32,133	25.54	2,000 prisoners
Care and support	30,302	24.09	85 persons receiving antiretrovirals
Behavioural change communication	9,815	7.80	Training of prisoners, highest cost
Enabling environment	6,860	5.45	Advocacy meetings, highest cost
Total	**125,796**	**100.00**	
Unit cost of 1,000 prisoners	***8,386***		
Unit cost per prisoner	***8***		

47 Alban A. (2006). *Estimation of Costs of HIV Interventions in Pakistan 2006–2010*. 1–46. Islamabad: UNAIDS.

48 Alban A. (2005). *Estimations of Costs of HIV Interventions in Estonia.* 1–21. Geneva: UNAIDS. Alban A. (2005). *Estimations of Costs of HIV Interventions in Estonia.* 1–21. Geneva: UNAIDS.

4.2.10 HIV peer education programme in the armed forces

The peer education programme in the armed forces in the Kingdom of Cambodia was costed in May 2007.

Table 4.9: Costs of peer education programmes in the armed forces, Cambodia

Cost component	US$	%
Behaviour change		
Staff	41,520	9.54
Activities	241,860	55.57
Running Costs		
Information and education campaigns	10,000	2.30
Commodities & Services		
Soft drinks	105,639	24.27
Other	0	0.00
Follow-up	21,200	4.87
Investments	0	0.00
Monitoring and evaluation	15,013	3.45
Total	**435,232**	**100.00**
Unit cost (per soldier reached)	***4.12***	

The total cost of US$ 435 232 per year and unit cost of US$ 4.12 per person reached are therefore unique: the initial costs of training and implementation of the programme do not reflect the investment necessary to start a similar programme in another country. Experience from another prevention programme conducted in the military has shown that the cost in the start-up year, including extensive training, could be double the total cost of subsequent years. If the start-up costs were spread over five years, it could add 20% to total costs, thus increasing the unit cost to US$ 4.92. However, the unit cost of US$ 4.12 reflects present and future cost.

Twelve staff are employed to run the programme and their salaries account for 10% of the total budget. Group session fees, facilitator fees, travel, *per diem* remuneration, and accommodation for the 6 258 peer educators, 450 trainers and 73 coordinating trainers, constitute almost 56% of the total cost. The running expenditures included only reflect incremental cost (not the time spent by the soldiers in the programme, training and start-up costs), so soft drinks offered during the sessions account for 24% of the total budget.

Most peer education programmes in schools in Asia have a unit cost of approximately US$ 11 at 2006 prices in, for example, Nepal.[49] The effect of such peer education measured in terms of behavioural change (fewer partners, consistent condom use if having unsafe sex) is unknown.

[49] Alban A and Hahn M. (2002). *Costing of Nepal HIV Strategy 2002–2006.* 1–26. Kathmandu: DFID.

4.2.11 Safe blood-screening programmes

Blood screening is a good example of the debate over what should be included HIV programming. Since the outbreak of the generalized HIV epidemics in Africa, safe blood programmes have been high on the HIV prevention agenda. Few governments in industrialised countries with a concentrated HIV epidemic have questioned whether screening of blood for HIV should be undertaken, and as a result they have integrated blood-screening as part of their in health services. However, in some Asian countries with concentrated HIV epidemics, safe blood is not guaranteed; for example, during the earthquake in northern Pakistan in 2005, one of the challenges facing aid workers was organizing delivery of safe blood supplies to those in need.

The costings available for screening blood in Pakistan's Sindh province illustrate the point that a safe blood programme involves a lot more than merely screening for HIV. To be effective, it must screen for Hepatitis B, Hepatitis C, malaria and syphilis as well. If it is decided that the HIV programme and not the health programme should finance screening of blood for HIV, should the HIV programme then also finance screening for Hepatitis B, Hepatitis C, malaria and syphilis?

Table 4.10: Cost of safe blood, Sindh province, Pakistan, 2006

Activities per blood bag screened	Costs in US$	% share
HIV screening	3.33	26.93
HBV screening	1.83	14.81
HCV screening	3.25	26.26
Syphilis screening	0.33	2.69
Malaria screening	0.08	0.67
Blood ag	2.50	20.20
Operational overheads	0.53	4.31
Quality assurance	0.38	3.10
Advocacy/awareness	0.03	0.21
Equipment	0.10	0.82
Total	**12.38**	**100.00**

On its own, HIV screening of blood constitutes only 33% of the total cost of the safe blood programme, including a proportional share of joint programme costs. In this costing exercise, all estimated costs of the safe blood programme are included. In principle, it could be argued that at least two thirds of the costs of screening blood should be borne by health services and not by an HIV programme.

In Pakistan, if this screening programme were to be scaled-up gradually to 100% coverage over five years and financed by the HIV programme, it would consume 35–37% of the total resources allocated for the country's five year strategy.

Finally, the figures for the blood-screening programme in Table 4.10 do not include the costs of collection of blood, blood processing, storage or distribution. This accounted for approximately 59% of the total cost of screening blood in Nepal.[50] The cost of US$ 12.38 for screening a bag of blood — or four US dollars for screening for HIV exclusively — is thus a minimum or the incremental cost, if all other costs are borne by the health services.

[50] Alban A and Hahn M. (2002). *Costing of Nepal HIV Strategy 2002–2006.* 1–26. Kathmandu: DFID.

Box 4.3. Using unit cost figures: Notes of caution

The unit costs cited in this report are derived from several published reports and cannot be verified. Consequently, calculating the average unit cost of, for example, programmes aimed at injecting drug users in the range of US$ 69–157 in order to get an average for Asia, has little meaning without purchasing power parity conversion (in other words, the number of units of a country's currency required to buy the same amount of goods and services in the domestic market as a US dollar would buy in the United States in any given year). This was not possible for all unit costs identified and we chose instead to present the range in US dollars in the individual countries, which is not ideal.

Instead, this report considers how much it costs to provide HIV services for groups whose behaviour places them at greatest risk of infection (e.g. injecting drug users, sex workers, men who have sex with men and prison populations). To get a more in-depth understanding of why unit costs of injecting drug user programmes differ, we refer to the individual cost-effectiveness analyses from Bangladesh, Nepal and Pakistan, and the overview of cost-effectiveness of programmes for injecting drug users in Asia.[30]

- It is important that the unit costs developed for planning and estimating resource need use the size of the target population. In many places in Asia, the actual size of populations of drug users and sex workers are often unknown. It is recommend that the number of injecting drug user clients accessing harm reduction services on a regular basis and/or the number of needles and syringes distributed be carefully recorded in order to estimate the coverage of services.
- It should be recalled that figures of unit costs used in estimating of total resource needs for planning purposes, are approximations and need to be adjusted time to time, based on availability of data. Unit costs do change over time when coverage and/or utilization of capacity change. Recent analyses show that the unit cost decreases over time due to increased level of scale. Regular or *ad hoc* cost analyses over the planning period are therefore recommended to adjust for significant changes over time.
- The unit cost of activities aimed at injecting drug users from one site in a country cannot necessarily be used to assume the same level of cost in another site in that country or elsewhere in the region. For example, transferring unit cost from programmes in one part of Nepal to another would require the same activities, specification of standards, similar utilization of capacity, scale, identical characteristics of a group of injecting drug users (HIV prevalence, heroin or pharmaceutical drug users). Application of unit cost data from one country to another would require comparability of the factors described above. Additionally, all prices and salary levels would need to be adjusted.
- Just as unit costs of prevention strategies cannot be universally applied to all countries and settings, the cost of treatment, too, cannot be broadly generalized within or across countries without some caution. Although an initial figure may be used to estimate the total resource need at a national level for planning purposes, the figures for treatment must be updated as and when relevant data become available.

4.2.12 Costs of AIDS treatment programmes

The care and treatment component of AIDS programmes include counselling and testing, treatment of opportunistic infections, antiretroviral treatment including monitoring (referred to here as Highly Active Anti-Retroviral Treatment, HAART) and a range of care and support initiatives, including home-based care, and community- and family-integrated approaches. In this working paper, we focus on delivery of HAART because it remains the most expensive single intervention with high public appeal.

Table 4.11: Provision of highly active antiretroviral treatment in Asia: Unit costs per patient, 2006

Antiretroviral treatment	Unit cost US$ (2006 prices)	Countries	Comments
2nd regimen antiretrovirals	847–7,009	India, Cambodia, Pakistan, Thailand	Weighted average cost of 2nd regimens
1st and 2nd regimen antiretrovirals	1,149	China	Average cost of 1st and 2nd regimens
1st regimen antiretrovirals	200–501	India, Pakistan, Thailand	Weighted average cost of 1st regimens
Monitoring antiretroviral adherence	68–272	Cambodia, Pakistan	
Inpatient care	157	Thailand	Average cost of provincial and community hospitals
Adherence/prevention	108–110	India, China	
Outpatient care	72	Thailand	Average cost of provincial and community hospitals
Monitoring, pre-antiretrovirals	30	Thailand	

Source: Alban, 2006; Alban, 2007; Marseilles, 2004; Meng, 2006; Thailand MOPH and World Bank, 2005

4.2.12.1 HAART unit costs in India and Thailand

Two cost studies on HAART are available from Asia. The first, from India, published in 2004[51], models the cost and consequences of a range of treatment and prevention scenarios. The second, a study conducted by Thailand's Ministry of Public Health and the World Bank (2005) assesses how treatment benefits can be achieved while promoting effective prevention. The unit costs from these studies, using 2006 prices, are included in Table 8 with findings from Cambodia and Pakistan (based on resource need estimation using INPUT) and China.[52]

The unit costs are displayed in ranges and indicate a wide variation in the cost of first- and second-line antiretrovirals in the region. The costing guidelines from UNAIDS (2000) do not cover care and treatment programmes in detail.

From a planning perspective, estimating the cost of first-line antiretrovirals and monitoring is only the beginning. Scaling-up of HAART to cover an increasing number of people is a complex task, requiring a range of information and assumptions. Currently, the best way of delivering antiretroviral therapy is through a triple antriretroviral drug combination, given to the patient in the form of a single dose. When a person is clinically eligible for HAART (as defined in the national protocol) he/she will be given a first-line drug combination that can vary slightly between countries. In Asia, this treatment will be based on generic drugs costing approximately one to two US dollars a day. Several drug combinations will be available for the first- and second- regimens and the unit costs in Table 4.11 represent weighted average costs.

[51] Over M, Heywood P, Gold J, Gupta I, Hira S, Marseille E. (2004). *HIV/AIDS Treatment and Prevention in India. Modeling the Cost and Consequences.* 1st Ed. Washington DC: World Bank.

[52] Meng X, Anderson AF, Hou X, Wang Y, Sun L, Zhang X *et al*. (2006). A Pilot Project for the Effective Delivery of HAART in Rural China. *AIDS Patient Care and STDs* 20(3):213–9.

4.2.12.2 Second-line drugs

Some patients are not able to tolerate antiretroviral drugs and over time many will have to change to other regimens due to growing resistance and side effects. This can happen even in the first year but the probability of having to change regimen increases over time.

Second-line drugs are between 4 and 14 times more expensive a year than first-line drugs. It is therefore crucial to determine the number of patients to be treated each year and the type of drug therapy they will require before costing and planning the scaling-up of HAART is possible. The annual cost of providing HAART to 10 000 patients varies significantly depending on the estimated numbers in receipt of each regimen.

Based on the experiences from the initial years of provision of HAART in Asia, we can conclude that the unit costs for HAART, as well as the total resources needed, can vary widely. The key factors that influence this variation are discussed below.

4.2.13 Factors influencing variation of cost of treatment in Asia

4.2.13.1 Proportion of people receiving second-line drugs

The proportion of people receiving first-line drugs to those receiving second-line drugs is an important determinant of total resource need. In Table 4.12 we take two scenarios in which coverage increases from 6 000 people in 2006 to 10 000 people in 2010. It is assumed that the programme has been running for one to two years in 2006 and reaches 6 000 people. It is also assumed that 85% of those receiving antiretrovirals are on first-line drugs costing US$ 200[53] and that the remaining 15% are receiving second-line drugs at US$ 1 833 per person per year.

It costs US$ 4.3 million in both scenarios to provide HAART to 6 000 persons in 2006, including the cost of monitoring adherence. In the first scenario it is assumed that 10% of the total number of people receiving HAART will need to change from first to the second-line drugs each year. In the second scenario it is assumed that only five percent of the total number of persons receiving HAART will change from first to second regimen each year. The difference in resources needed is significant: over a five-year period, calculated using 2006 prices. In the first scenario, where change from first- to second-line drugs takes place sooner, higher costs of US$ 7.3 million are incurred.

Although the scenarios in Table 4.12 are simplified, the point remains: the longer people stay on first-line drugs the less the total resource requirement.

[53] Using the price negotiated by the Clinton Foundation -– relatively low for 2007 prices in Asia.

Table 4.12: Two scenarios with different proportions of first- and second-line antiretrovirals

Scenario 1 85/15–45/55 split	**2006**	**2007**	**2008**	**2009**	**2010**	**2006–10**
Total antiretrovirals	6,000	7,000	8,000	9,000	10,000	
First-line drugs	5,100	5,250	5,200	4,950	4,500	
Second-line drugs	900	1,750	2,800	4,050	5,500	
Cost of monitoring: US$	1,634,250	1,906,625	2,179,000	2,451,375	2,723,750	
Total (2006) US$	*4,304,250*	*6,164,958*	*8,352,333*	*10, 866,375*	*13,707,083*	*43,395,000*
Scenario 2 85/15–65/35 split	**2006**	**2007**	**2008**	**2009**	**2010**	**2006–10**
Total antiretrovirals	6,000	7,000	8,000	9,000	10,000	
First regimen	5,100	5,600	6,000	6,300	6,500	
Second regimen	900	1,400	2,000	2,700	3,500	
Cost of monitoring: US$	1,634,250	1,906,625	2,179,000	2,451,375	2,723,750	
Total (2006) US$	*4,304,250*	*5,593,292*	*7,045,667*	*8,661,375*	*10,440,417*	*36,045,000*
Difference						7,350,000

Note: This table builds on a simplified HAART model in INPUT spreadsheets.

A more advanced framework for handling this issue is the Goals Model developed by the Futures Group[54] that uses a "probability tree" to determine the likelihood of a patient needing to shift from first- to second-line drugs over time. The model assumes that of the 40% who decide to take HAART, only 60% will succeed. After one year of receiving HAART, 24% will change to another regimen; after two years this figure increases to 39% and after the third, fourth and fifth year, the figures reach 47% 68% and 84% respectively.

The model created for analysing the cost and consequences of HIV treatment in India[55] does not undertake any specific analysis of the consequences of the different proportions of people receiving first, second or third regimens. However, one of the background papers used[56] concludes that the higher the failure rate of first regimen antiretrovirals, the lower the cost-effectiveness ratio. The India model is based on the costs of first-line antiretroviral drugs at US$ 294 per year and second regimen drugs at US$ 783 per year, using 2004 prices and available drugs. The price level of second regimen antiretrovirals in both Cambodia and Pakistan was over US$ 1 000 a year in 2006.

4.2.13.2 Duration of survival of people receiving HAART

Developing countries only have, at most, three years' experience and data about comprehensive national HAART programmes to draw on. From a planning perspective, operating with five-year strategic plans, this is not sufficient. Assuming that people change regimen once or twice (depending on the HAART policy in that country), how long (and with what regimen) will the treatment continue: three, five, ten years, or more?

[54] Stover J, Bollinger L, Cooper-Arnold K. Goals model: for estimating the effects of resource allocation decisions on the achievement of goals of the HIV/AIDS strategic plan. Glastonbury: The Futures Group International; (2001).

[55] Over M, Heywood P, Gold J, Gupta I, Hira S, Marseille E. (2004). *HIV/AIDS Treatment and Prevention in India. Modeling the Cost and Consequences.* 1st Ed. Washington DC: World Bank. & Over M, Marseille E, Sudhakar K, Gold J, Gupta I, Indrayan A *et al*. (2006). Anti-retroviral Therapy and HIV Prevention in India: Modeling Costs and Consequences of Policy Options. *Sexually Transmitted Diseases* 33(S10):145–52.

[56] Over M, Heywood P, Gold J, Gupta I, Hira S, Marseille E. (2004). *HIV/AIDS Treatment and Prevention in India. Modeling the Cost and Consequences.* 1st Ed. Washington DC: World Bank.

The Goals Model[57] tackles this issue by estimating that each person receiving HAART will gain 2.4 life years on average. The model for India[58] includes estimates of average life gains in the range of two to four years (unstructured and structured treatment). If these assumptions are still valid in 2007, those built into Table 8 might be too optimistic. Recent 2007 data from Europe shows much lower mortality rates with other regimens.[59] The fact is that we do not have sufficient evidence to answer how many years, on average, a country should plan on providing HAART to individuals. At the present time, the option open to planners is to work on scenarios covering three to six years of provision of HAART per patient.

4.11.3.3 Cost of laboratory monitoring

Although WHO has issued guidelines, the cost of monitoring differs from country- to- country, not only because local prices affect different salary levels and cost of testing, but also because of what is included in the protocol. The cost-ranges vary from approximately US$ 68 to US$ 272 per year, but could be higher in countries relying on the private sector for analysing viral loads and CD4 counts.

4.2.13.4 Costs other than drug and laboratory monitoring

Researchers found that in addition to the price of antiretrovirals, significant costs are associated with the provision of HAART. Thailand's experience underscores the importance of including costs of outpatient and inpatient services. A study[60] evaluating medical resource utilization for HAART estimates that the average annual cost for extra hospital services (excluding the cost of delivering HAART) is US$ 229 for inpatient and outpatient services.

4.2.13.5 Monitoring disease progression

Some countries provide regular monitoring of people living with HIV including CD4 counts and blood tests. If a country offers such services, the costs should be included in the delivery of the HAART programme. Thailand started a number of screening tests such as CD4 and HIV antibody counts prior to the initiation of HAART. These tests cost US$ 28 per person.[61]

4.2.13.6 Other factors influencing effectiveness of treatment

Increased resource allocation to HAART and its monitoring will not necessarily lead to the desired outcome of prolonging and improving the quality of life of people eligible for treatment. Patients may not adhere to treatment and/or the stigma and lack of support in the patient's environment might reduce the effectiveness of HAART.

[57] Stover J, Bollinger L, Cooper-Arnold K. Goals model: for estimating the effects of resource allocation decisions on the achievement of goals of the HIV/AIDS strategic plan. Glastonbury: The Futures Group International; (2001).

[58] Over M, Heywood P, Gold J, Gupta I, Hira S, Marseille E. (2004). *HIV/AIDS Treatment and Prevention in India. Modeling the Cost and Consequences.* 1st Ed. Washington DC: World Bank.

[59] Published data from a cohort study of 4,471 patients in a Spanish hospital reports mortality rates of only 5 percent over seven years (1997–2004). However, mortality has remained five times higher than that of the age-matched general population (Martinez *et al*, 2007).

[60] This study was conducted at 32 public hospitals across four regions in Thailand to evaluate economic costs associated with the National Access to antiretroviral treatment in the Thailand programme. The study specifically followed 380 patients between October 2002 and December 2004 to measure the medical resource utilization at public hospitals (Thailand Ministry of Public Health and World Bank, 2005).

[61] Thailand Ministry of Public Health and World Bank. (2005). *Expanding Access to ART in Thailand: Achieving Treatment Benefits while Promoting Effective Prevention.* 1–21. Washington DC: World Bank.

In Asia, two studies are available that document the cost of extra efforts to ensure effectiveness:

- The first study from India analyses the cost and outcome of different approaches to delivering HAART. The scenario that invests an additional US$ 100 per patient per year is the most cost-effective of three alternatives.[62]
- The second study from China analysed what it would take to provide HAART in rural areas and achieve a high level of effectiveness. The pilot study in China's Jilin province tackled patient adherence by introducing a highly integrated and family-centred approach. This cost an additional US$ 110 per year for the HAART programme of US$ 1 149 (average unit cost). The China study concluded that HAART could be effectively delivered in resource-poor settings in China when both coordinated infrastructure and primary care orientation are established.[63]

4.2.14 Summary of findings

- Significant and unexplained variations are observed in unit costs of otherwise similar AIDS programmes, both within and between countries.
- Drugs and commodities are the most expensive elements of any AIDS programmes and decision-makers must focus on strategies to bring down these costs effectively.
- Unit costs based on activities considered to be good practice can be used for planning the scaling-up of AIDS programmes in Asia if they are used with caution.
- Unit costs vary from site-to-site depending on the approach taken, the capacity utilized, and local prices, including salaries.
- It is important to use scale-specific cost information in order to identify the optimal size of an intervention and to improve information on resource requirement.
- Each country needs to be clear about what its HIV programme should fully finance and what should be cost-shared through other budgets in resource-constrained settings. (For example, safe blood screening, youth life-skills, support of children orphaned and left vulnerable by AIDS and food supplements for poor people receiving HAART.)

[62] Over M, Heywood P, Gold J, Gupta I, Hira S, Marseille E. (2004). *HIV/AIDS Treatment and Prevention in India. Modeling the Cost and Consequences.* 1st Ed. Washington DC: World Bank. & Over M, Marseille E, Sudhakar K, Gold J, Gupta I, Indrayan A *et al*. (2006). Anti-retroviral Therapy and HIV Prevention in India: Modeling Costs and Consequences of Policy Options. *Sexually Transmitted Diseases* 33(S10):145–52.

[63] Meng X, Anderson AF, Hou X, Wang Y, Sun L, Zhang X *et al*. (2006). A Pilot Project for the Effective Delivery of HAART in Rural China. *AIDS Patient Care and STDs* 20(3):213–9.

4.3 A NEW RESOURCE ALLOCATION NORM FOR EFFECTIVE HIV RESPONSES IN ASIA[64]

Nalyn Siripong, Swarup Sarkar, Tim Brown, Anit Mukherjee, Ross Mcleod, JVR Prasada Rao

4.3.1 Introduction

How do governments in Asia know which HIV interventions work, to what extent and how to prioritize their spending?

Is there a simple resource allocation norm for HIV intervention work that can be applied to most, if not all countries of Asia?

Is it possible to develop an overall estimate for resource need for HIV intervention in Asia that takes into account special characteristics of the epidemic in the region?

With scarcity of funds for a comprehensive AIDS response a current reality, there is a need to answer all these questions urgently. Especially if Asia is to make headway in its attempts to halt and reverse the pandemic.

But most countries in Asia do not even have costed national HIV plans. While detailed work at the country level on costing of the national strategy remains to be accomplished, global level bodies and donors as well as national leaders require some tentative estimate close to the reality for planning, forecasting and resource allocation.

The Commission has no illusions that a single solution to the complex AIDS epidemic in Asia is possible. It believes however, a simple generic model for analysing epidemics according to different scenarios in the region can help each country allocate resources to the most effective prevention and care programmes.

4.3.2 Why develop a resource allocation norm for HIV epidemics in Asia?

4.3.2.1 Increased resources, little impact

Over the years there has been a significant increase in resources available for AIDS programmes in Asia. And yet there has not been a proportional improvement in the provision of essential services for prevention, care, treatment or protection of livelihoods (see Table 4.13). As a result, most Asian countries have not succeeded in halting or reversing the epidemic nor have they adequately addressed its impacts.

There are several reasons for such poor performance. One of these is the inefficient use of existing resources, primarily through inadequate prioritization or even simply the lack of information about their existence among policy makers. Also there has been no simple norm or method developed by which resources could be allocated on a priority basis to obtain optimum results.

Secondly, despite the increase in resources these are still well short of what is really required for a comprehensive response. Often senior politicians and policy makers are also unaware of the actual level of resources required and the significant returns early investments in prevention and care can bring. The case for AIDS funding and resources is often presented in technical terms and detail a confusing number of diverse activities of varying effectiveness that fail to capture the attention of the politicians.

[64] Prepared by the Secretariat of the Commission on AIDS in Asia in collaboration with Asian Development Bank, July 2008

For example, UNAIDS and the Asian Development Bank had earlier estimated that adequate funding for effective AIDS programming in the region would account for only 0.2% of GDP and 4% of all health expenditure. Despite this modest projection of resources required there was still a shortfall of 75% in the funding required for a comprehensive AIDS response.

Equally important is the fact that quality data on the current availability of resources as against the estimated resource needs are not publicly available. The quantum and nature of resource gaps in key HIV interventions (most effective or high return) is not discussed publicly and therefore the need for each country to prioritize cost-effective interventions is less emphasized.

In sum, the inefficient allocation of existing resources, shortfall in availability of resources and lack of public debate on this subject has left the region unable to achieve the required preventive coverage among populations and groups whose behaviour exposes them to the risk of HIV infection. This allows the epidemic to continue to grow almost unchecked.

Table 4.13: Coverage of HIV prevention and treatment services among relevant populations in 14 Asian countries

Coverage of HIV/AIDS services in 14 Asian Countries	Harm Reduction programs for IDU		Outreach programs for sex workers		Outreach programs for MSM		ART Program		Impact Mitigation Program	
	2003 (1)	2005 (2)	2003 (1)	2005 (2)	2003 (1)	2005 (2)	2003 (1)	2005 (2)	2003 (1)	2005 (2)
Weighted Average	3.4%	2.1%	7.7%	33.5%	1.2%	4.6%	10% Chk	26%	NO data	NO data

Source: (1) USAID, UNAIDS, WHO, UNICEF, and the POLICY Project (2004). Coverage of selected services for HIV/AIDS prevention, care and support in low and middle-income countries in 2003.
(2) Stover, J and Fahnestock M (2006). Coverage of Selected Services for HIV/AIDS Prevention, Care and Treatment in Low- and Middle-Income Countries in 2005, Washington, DC, Constella Futures, POLICY Project.
(3) WHO/UNAIDS/UNICEF (2007), Towards Universal Access: Scaling-up priority HIV/AIDS Interventions in the Health Sector, Progress Report, April 2007, Geneva.

The Commission on AIDS in Asia has a clear mandate to recommend appropriate levels of resources needed to address the AIDS epidemic in Asia, and believes it is critically important to communicate these needs in simple terms to get the attention and support of policy makers in the region.

4.3.3 Current method of resource estimation

The global Resource Needs Model (RNM), drawn up by a group of experts, is currently used to estimate resource needs for AIDS interventions at the national, regional and global levels. The RNM uses population data, coverage figures, unit cost of interventions and a generic/standard list of 25 interventions[65] to estimate the overall resources needed for responding to AIDS.

4.3.3.1 Resource estimation process using the RNM

The global estimation using RNM however, has some limitations, constraints and inherent complexity. For example:

- It gives weight to each intervention without prioritizing or considering their relevance and impact according to the local context and needs. The quality of specific activities and interventions are not always clearly defined for example, the generic estimate made using the RNM for IDU intervention does not differentiate between programmes operating in a

[65] Bollinger, L. and others. (2002). Resource Needs for HIV/AIDS: Model for Estimating Resource Needs for Prevention, Care, and Mitigation

correctional setting, based on abstinence, such as in a prison, and those that are community-based and provides services like needle and syringe, methadone and peer education. Differentiating between different interventions is important because the variations involved will have an impact both on cost and effectiveness.

- It mixes up activity-based costing (e.g. social marketing of condoms) and population-based costing (e.g. cost per injecting drug user), which is prone to overlaps in calculation of figures.
- An implication of this mixing up of different costs is that it ignores the fact that some interventions are not a part of the existing health system (e.g. peer education, condom distribution and treatment of sexually transmitted infections for sex workers, men who have sex with men) and need to be completely funded by the AIDS budget, whereas others may be partially supported by other (non-HIV) governmental or private sector budgets. Any antiretroviral treatment programme, for instance, requires a mix of patient management cost, infrastructure cost and drug cost that may not be funded solely by the AIDS programme.
- The coverage targets used by the RNM are not clear[66]. In the absence of standardisation of HIV interventions this could lead to lack of consistency and clarity.
- Data on country-specific resource needs are not available and it is difficult to judge how the regional figures have been arrived at.

4.3.3.2 Lack of specific guidelines

Given the uniquely focused nature of HIV epidemics in Asia and the concentration of risk among population of most at risk and their partners [67], it is also often not clear exactly how relevant all prevention components listed in the global Resource Needs Model are to the region's needs. For example, when costing social marketing of condoms, it is not clear if it targets sex work settings or the general population. The Commission's report clearly establishes that condom distribution and sexual health programmes for the general population, although important otherwise, contribute only marginally to the reduction of new HIV infections in Asian epidemics when compared to more specifically targeted interventions and services for sex workers and their clients, which have huge impacts. Whether condom promotion in sex work is to be included in sex work prevention or within social marketing is not clear in the existing resource need estimation process. It is known that the timing, location and mechanism for distribution of condoms for sex workers are different from social marketing of condoms for the general population and this difference has significant implications for cost of delivery.[68]

Similarly, current global estimations of resource need and resource allocation using the Resource Needs Model do not provide any guidance on components of an effective programme for injecting drug users (IDUs). The majority of Asian countries today do not provide injecting drug users with exchange programs for needles and syringes or drug substitution programmes - the two essential pillars of intervention aimed at reducing risk among injecting drug users.[69] The RNM does not distinguish whether or not the interventions specified above are included in prevention activities for IDUs.

[66] Bollinger, L. and others. (2002). Resource Needs for HIV/AIDS: Model for Estimating Resource Needs for Prevention, Care, and Mitigation

[67] Namely IDUs, Sex workers and clients, male who have sex with males and their regular partners ; details in Chapter 2 of the Commission on AIDS in Asia report.

[68] Jenkins C and Sarkar S. *Creating Environments that Care: Interventions for HIV Prevention and Support for Vulnerable Populations.* Bangkok: Alternate Visions, 2007.

[69] Goa Presentation, by Dr Swarup Sarkar at *Response beyond borders*

This lack of specificity about which programme components and interventions to include and which work most effectively in Asian countries, allows donors, governments and other relevant authorities to take ad-hoc decisions on which of these elements to adopt. This results in poor prioritization and resources often being misdirected towards less effective alternatives.[70]

For example:

- Over 90 percent of UN resources meant for preventing HIV among young people are spent on those whose behaviour place them at low risk of HIV infection, and who account for less than 5% of new infections that occur in the Asia region.[71]
- Some donors and national governments in the region, allocate far more resources to abstinence-based programmes than condom promotion for most-at-risk populations or needle syringe programs,[72] even though the latter is responsible for averting 95% of new infections in Asia.

A closer analysis of estimated resource needs for Asia in 2005, taking into consideration the relative impact of the different prevention components, showed the potential benefits of more regionally appropriate programme choices. According to these calculations, by focusing on only four out of the 25 prevention activities listed in the global package and using just 15% of the total estimated resource needs, 80% of new infections could potentially be prevented. Other interventions, such as ensuring blood safety and safe injections, would have consumed up to 25% of resources, while averting only an estimated 2% of new infections in the region.

The complexity of these issues, compounded by a lack of awareness among politicians and policy-makers about how resource needs are estimated, has sometimes even led to confusion about whether AIDS programs are over-funded or sub-optimally financed.

4.3.4 Comparing estimation methods

The new resource needs estimation methodology proposed by the Commission on AIDS in Asia is based on its understanding of epidemics and patterns of progression common throughout most countries in Asia. As a result, the intervention and coverage levels proposed are those interventions that will have the highest and most immediate impact on the progression of HIV infection in Asia.

While the RNM provides an estimate of the funds required to lead a comprehensive AIDS response, it does not address the question of how countries should prioritize if the resources available to them fall short of this estimate. The Commission's new model suggests prioritization based on the relative cost and returns (in terms of life years gained or deaths averted) of various interventions. It also indicates how cost-sharing with other relevant ministries can help ease the financial burden of AIDS budgets.

Again, the RNM identifies coverage targets for various interventions based on the global classification of the epidemic as low, concentrated or generalized. Under this classification, the epidemics in places such as southern India and Myanmar would be considered generalized and would need bigger budgets and resources.

Table 4.14 below shows the resources required to fund the entire AIDS response in Asia, based on the Commission's new resource needs estimation methodology as compared to that using the RNM. Clearly, the US$ 6.4 billion figure seems high, but as will be explained later in this paper if a proposed cost-sharing formula is applied, the figure is significantly lower. With cost-sharing the AIDS budget will be close to US$ 3.14 billion.

70 Redefining AIDS in Asia, Report of the Commission on AIDS in Asia (2008)
71 *Review of allocation of the UBW funds*, Commission on AIDS in Asia, 2004-2005.
72 Chapter Two, Technical Annex to the Report of the Commission on AIDS in Asia (2008).

Table 4.14: Comparison of Resource Needs Model and AIDS Commission's Costing Methodology

Intervention ('000 US$)	AIDS Budget (RNM)	New AIDS Budget (Commission)	AIDS Budget (Cost Sharing)
CSWs and clients	376,000	292,813	292,813
Harm reduction	192,167	375,602	375,602
MSMs	329,491	340,019	340,019
VCT	260,815	319,299	319,299
PMTCT	92,119	10,269	10,269
Public and commercial condoms	524,573	524,573	52,457
Universal precautions	908,255	908,255	90,826
Safe Injection	700,066	700,066	70,007
Youth out of school	280,246	280,246	28,025
STI management	262,548	262,548	26,255
Workplace	224,240	224,240	22,424
Special populations	11,948	11,948	1,195
Condom social marketing	103,658	103,658	10,366
Blood safety	69,034	69,034	6,903
Prevention for PLWA	4,119	4,119	412
Mass media	8,686	8,686	869
Youth in school	25,450	25,450	2,545
PEP	2,130	2,130	213
Community mobilization	500	500	50
Total Prevention	***4,376,045***	***4,463,455***	***1,650,547***
Adult ART	827,118	753,782	753,782
Pediatric ART	--	7,368	7,368
Total Treatment	***827,118***	***761,150***	***761,150***
Orphans and vulnerable children	73,168	100,000	100,000
Income generation for widows	--	221,147	221,147
Total Impact Mitigation	***73,168***	***321,147***	***321,147***
Surveillance and M/E	--	242,030	242,030
Management of low-risk prevention	--	468,818	46,882
Other Management	--	121,015	121,015
Total Program Management	***214,576***	***831,863***	***409,927***
Total	***5,490,907***	***6,377,615***	***3,142,771***

4.3.5 The Asian epidemic

Asia is experiencing mainly a concentrated pattern of epidemic in which transmission largely occurs within specific groups with higher risk of exposure to HIV for example, injecting drug users, men who have sex with men, female sex workers and their clients. Infection then spreads from these groups to their regular sexual partners[73].

Irrespective of whether an epidemic starts in a specific group such as injecting drug users, men who have sex with men or sex workers, the ultimate size of the epidemic is determined largely by the extent and frequency of sex work in the country. More specifically, the severity and speed of the epidemic is determined largely by the percentage of men using female sex workers and the number of clients sex workers see per night.

The larger the percentage of adult men who are clients and the more often they visit sex workers, the greater the potential for the epidemic to reach high prevalence levels amongst the general population. For example, in the early 1990s, HIV prevalence in Cambodia or Thailand was potentially 8 -10% in the adult population because 16 -20% of adult males had visited sex workers in the last year, and sex workers had two to three clients a night. By contrast, India or Viet Nam had lower potential prevalence rates of 2 - 5% because the percentage of men visiting sex workers last year was lower at 8 -10%.[74]

4.3.5.1 Common characteristics of most Asian epidemics

- In the earliest stages of the epidemic, HIV infections primarily occur in specific groups whose behaviour may expose them to greater risk.[75]
- As the epidemic progresses, infections begin to be observed among low -risk groups whose partners' behaviour also places them at risk, and in particular the wives of men using sex workers. However, generalized spread of HIV does not necessarily follow in the adult heterosexual population because HIV transmission is largely confined to these specific groups. Efforts to protect the partners of men whose behaviour exposes them to greater risk of infection will be most effective if they focus on preventing the primary infection of the at-risk member of the couple, namely males visiting sex workers, male IDUs and bisexual males. This calls for a strong emphasis on effective prevention among groups that may be at increased risk of exposure to HIV.

    a. Asian epidemics are most often initiated and accelerated by injecting drug users, but are ultimately determined by the characteristics of the sex work epidemic, which makes the overlap between IDU- and SW-epidemics very important. In the absence of interventions, an IDU-epidemic can kick-start a seemingly latent sex work epidemic and accelerate it by at least five years. On the other hand the IDU epidemic plays an increasing lesser role in contributing significant number of new infections once the HIV epidemic has taken off in the sex industry (like in Mumbai or Chennai in India, or in Cambodia) or the sex work epidemic has been halted by intervention efforts (for example, in Thailand).

[73] A limited part of Asia (for example in Papua province in Indonesia), potentially faces a generalized epidemic (driven by a pattern of adult multi-partner sexual practices), where many men and women have several concurrent partners.

[74] East West Center (forthcoming). *Core Elements for an Effective HIV Response.*

[75] In the early stages, new infections tend to occur primarily among most-at-risk populations, such as sex workers, injecting drug users, and men who have sex with men. Although the epidemic progresses to a point where male clients make up the bulk of new infections,

- The extent to which the sexual behaviour of men who have sex with men drives epidemics varies substantially from country to country, but it is a factor that has grown in significance in most Asian countries in recent years. With an estimated two to three percent of adult men engaging in sex with other men, their vulnerability to HIV infection and impact on driving epidemics cannot be ignored.
- Casual sex among young people or adult heterosexual partners, without any link to the sex industry, plays little role in the HIV epidemic in Asia. This is because in the region majority sexual relations of women are still limited to their husbands or in serial monogamy. [76]

Figure 4.15 below demonstrates the expected trajectory of a typical Asian epidemic, and identifies some of the key epidemiological characteristics at each stage.

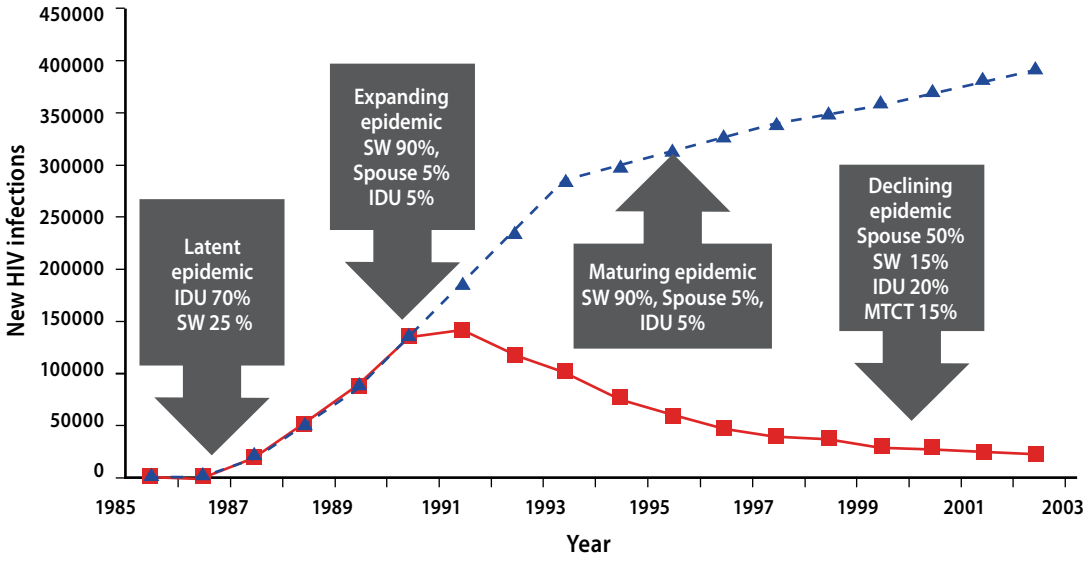


Figure 4.15: A schematic diagram on probable source of new infections, attributed to different population groups, in different scenarios of a typical Asian epidemic[77]

Box 4.4: Specific characteristics and indicators of each scenario

Latent epidemic

- Most new infections occur through equipment sharing among IDU (and possibly through same-sex behaviour)
- Prevalence is concentrated among injecting drug users (and possibly the MSM population)
- New infections are growing among sex workers (especially those with sexual partners or clients who inject)
- Current and new infections are almost exclusively among men (because of IDU and MSM influence).

[76] Redefining AIDS in Asia, Report of the Commission on AIDS in Asia,

[77] The numbers are notional and represent a typical country and are not based on actual data

Expanding epidemic

- The main mode of transmission in this period is through sex work
- High prevalence is seen among injecting drug users and sex workers
- New infections are predominantly among men who visit sex workers because they are a much larger population than IDU and sex workers
- Prevalence is low, but steadily growing because client infections (and subsequent transmission to wives), in the general population
- Most current and new infections continue to occur in men (primarily among clients of sex workers).

Maturing epidemic

- New infections among women who are married to clients of sex workers, IDUs or MSM are growing
- Increasing prevalence is seen among low risk women, e.g. HIV prevalence at antenatal clinics grows steadily
- Women become a larger proportion of overall new infections as large numbers of clients of sex workers transmit HIV to their wives, although overall new infections remain male dominated
- High numbers of clients continue to contract HIV, so sex work remains the main source of preventable transmission[78]
- High prevalence is found among injecting drug users, sex workers and clients of sex workers, and men who have sex with men.

Declining epidemic

- Prevalence in antenatal clinics declines followed by reversal of the epidemic among most-at-risk population particularly reduction of transmission between sex workers and clients
- High prevalence is still seen among all most at risk populations and low risk women
- The main source of new infection in this period usually are male-male sex and sharing of injecting equipment
- Husband-to-wife transmission continues to produce new infections among women, but over time, there is a growing incidence of new infections among men who have sex with men and injecting drug users.

4.3.6 Establishing a regional resource allocation norm

Estimating the resource needs for an effective HIV response requires:

a) Developing per capita costs for a standard package according to the different scenarios of the epidemic outlined above, which are based on a standard population structure in Asia;

b) Identifying the current scenario of the epidemic for each country;

c) Once the per capita cost is applied to the population in a country, according to the expected programme components at each scenario of the epidemic, a tentative cost for the whole region can be derived. This then forms the basis for a per capita recommended resource allocation norm for Asia, which varies according to the current scenario of the epidemic in a specific country.

[78] In this costing exercise, only those measures that have proven to be operationally successful are used. The "low-risk partner" interventions are yet to be modified to include cost of effective interventions to address spousal transmission.

Let us describe this process in detail.

4.3.7 Basic assumptions

4.3.7.1 Definition of an effective response

An effective response includes those elements that will have the greatest and most immediate impact on reducing the maximum number of infections, halting and reversing the epidemic and averting death and livelihood insecurity. The response must include effective prevention packages with standardized activities and quality criteria suitable for populations that are the source of most new infections. Treatment and impact mitigation are also essential components that must be included to avert death and avoid livelihood insecurity. Supportive management costs, the cost of surveillance, monitoring and evaluation, are also to be factored in to ensure delivery, supervision and mid-course correction.

Other prevention activities that have marginal effects on infection rates (e.g. universal precautions such as ensuring basic hygiene by washing hands with soap regularly, wearing rubber gloves for interventions, not reusing needles and syringes etc.) or impact over a long term period (e.g. school education) are also taken into account on a cost sharing basis with other sectors so that financial resources and the energy of the managers are not diverted away from priority prevention programmes.

4.3.7.2 The costing process

The estimation of resource need or costing is calculated on a per capita basis from prevention, treatment and impact mitigation packages of proven outcomes with standardized activities and quality criteria. Wherever possible, these calculations are based on actual observed data for Asia. When data is scarce, unreliable, or unavailable, it is taken from global estimates of resource needs. This applies in particular to prevention measures aimed at populations who are least at risk.

This costing therefore will consist of several parts:

(1) Prevention costs, which include prevention programmes for people with behaviours which may place them at higher risk of exposure to HIV;

(2) Other prevention programmes for populations who have less risk of infection;

(3) Treatment costs;

(4) Cost of impact mitigation programmes, which include livelihood sustainability and orphan care;

(5) Programme management costs; and

(6) Costs related to surveillance, monitoring and evaluation.

Many of the cost-estimate calculations outlined here were based on models of the four epidemic scenarios described above. These models assume sub-populations based on the average proportions observed throughout the region. Each of the four scenarios represents slight variations in the patterns in timing, risk behaviours and the level of intervention, resulting in the epidemic patterns described above.

4.3.7.3 Size of sub-populations in need of services

The growth and demographic characteristics (i.e., age/gender distribution) of the population are based on UN Population Division (UNPOP) projections. The sizes of sub-populations[79] are fitted in the Asian Epidemic Model tailored for a generic Asian population of 100 million people. The structure of the sub-populations in the projection, shown in Table 4.15, will give an estimate for the first component of costing i.e. prevention costs, which include programmes for most at risk populations.

Table 4.15: Table showing the size of a typical 100 million population in Asia and proportionate distribution of the same

Population group	Proportionate size	Source
Adult men	37.5% of total population	UNPOP
Adult women	36.5% of total population	UNPOP
Sex workers	0.4% of adult women	UNAIDS [80]
Clients	10% of adult men	UNAIDS
Drug users	0.5% of adult men	UNAIDS
Men who have sex with men	0.5-2% of adult men	UNAIDS

The average size of populations exposed to high risk of infection are based on data used by the countries in their own estimates of HIV prevalence, while using the UNAIDS-recommended estimation and population projection model and a review of available literature. The figures are then fitted into an Asian epidemic model for a generic Asian population of 100 million.

Prevention activities aimed at populations whose behaviour exposes them to risk are based on a regional average cost per person targeted according to data collected from different countries on unit costing.[81] The size of sub-populations are obtained from UNPOP Division estimates of populations least at risk.

Estimates for antiretroviral treatment, impact mitigation and surveillance are all calculated in the same way, based on available cost data for the region.

Since regional data is very limited, costing for prevention measures aimed at the general population and populations at least risk, are based on estimates used in the previous regional and global-level, which uses the Resource Needs Model and draws on both facility-based and population-based costs of interventions.

Finally, there is little data available for the cost of programme management, so accurate calculations are difficult. Some sources such as the Commission on Macroeconomics and Health suggest that the cost may be as high as 15% of the total programme costs, so this figure has been taken as an upper-bound estimate of the cost of HIV prevention in Asia.

Based on these assumptions, the annual resource need and per capita resource need figures were calculated, In addition, the outcome figures for prevention and ART were known and were reinserted in the Asia Epidemic Model following the same procedure as above and the overall figure of reduction on new infection and deaths averted were also estimated.

[79] Obtained from review of the literature for the region as well as country projections and estimation workshops, Int J STI 2007.

[80] Estimation and Projection Package (EPP) Manual, UNAIDS

[81] ADB -UNAIDS 2004risk partner" interventions are yet to be modified to include cost of effective interventions to address spousal transmission.

4.3.8 Estimation of costs for prevention

4.3.8.1 Prevention programs for most- at risk population groups

The combination of interventions needed for populations with higher risk of exposure to HIV was identified according to the progression of the epidemic. The package of effective measures has already been identified for each of four stages.[82] The total costs of these interventions are estimated based on the size of sub-populations, as well as the unit costs and coverage levels of interventions desired to produce impact at a population level. Costing will follow the formula:

(Population size) x (target coverage) x (unit cost) = total cost

4.3.8.2 Target Coverage

There is significant historical and empirical proof that prevention interventions need to reach a minimum of 80% of those at greatest risk in order to bring about sufficient behaviour change to reverse the epidemic. The effects of changing coverage levels and their resultant behaviour change on HIV are shown in the graph below.

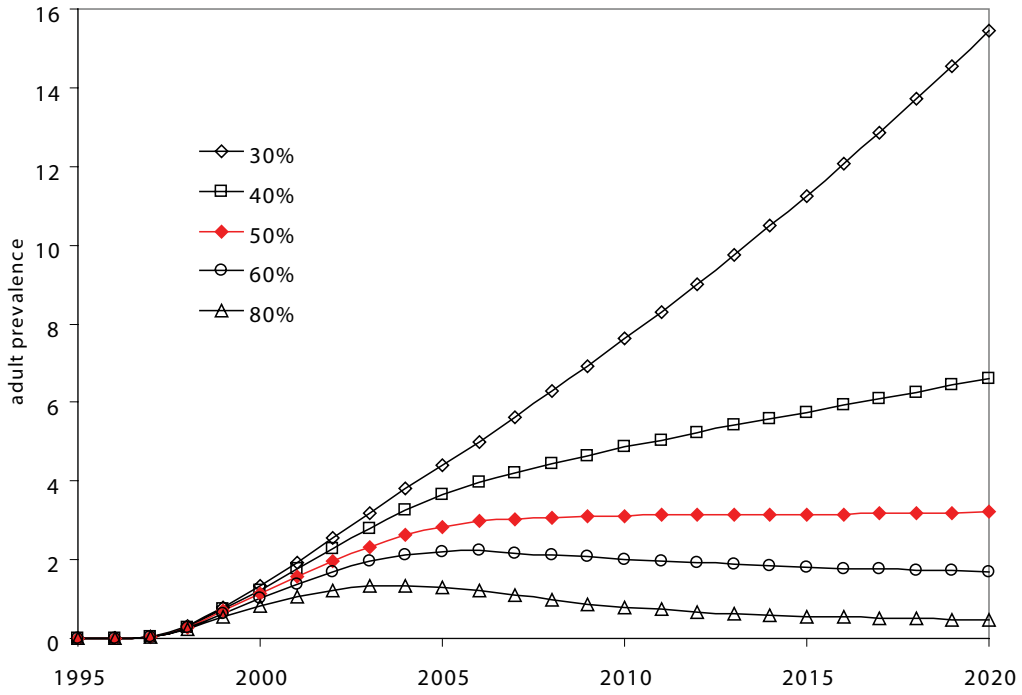


Figure 4.16: Modelling the effects of different prevention coverage levels on HIV transmission

This graph shows the impact of condom use between sex workers and clients on adult HIV prevalence in a moderate-risk Asian country. When condom use reaches 60%, the epidemic's growth is effectively halted and reversed.

[82] In this costing exercise, only those measures that have proven to be operationally successful are used. The "low-risk partner" interventions are yet to be modified to include cost of effective interventions to address spousal transmission.

4.3.8.3 Standard intervention items

A lack of well-defined standards and components of prevention activities for specific populations, as well as the current targeted prevention programs with varying interpretations of supplications of services and their quality, has led to a wide range of differences in current resource need estimation and made them non-comparable. This estimation clearly lays down the intervention activities, their periodicity and specification of standard of items of prevention intervention for most at risk populations based on best practices from Asia.

Box 4.5: A minimum package of effective interventions for men that have sex with men, injecting drug users and sex workers must contain:

- **Peer education/outreach**. Content should include accurate information on safer sex, consistent and proper condom use, and accurate information on harm reduction practices for injecting drug users.
- **Availability of and accessibility to prevention commodities** including condoms and lubricants for groups whose sexual behaviour puts them at risk and clean needles and syringes for injecting drug users.
- **Availability of and accessibility to prevention services and treatment**
- **Referral** for treatment in all prevention and community support services, including treatment for sexually transmitted infections, substitution drugs (methadone and buprenorphen) and preventive testing and counselling for discordant couples
- **Supportive policy regulations** and **local enabling environment**, which allow people at higher risk of exposure to HIV to access services and to practice safer behaviour.

4.3.9 Unit costs

Numerous studies on costing in different countries across the region have demonstrated and reinforced relatively standardized constant unit costs for the interventions. The unit costs used in this estimation are based on a regional average of approximately US$ 100[83] per most at risk population like sex workers, IDU and men having sex with men. For other interventions, ranging from blood safety to prevention youth in school, figures from the global resources needs estimates are used. (A complete explanation of the unit costs calculated is given in Supplementary Note 4F.)

4.3.9.1 Total and per capita cost

As discussed above, cost calculations are given as the product of their population, desired coverage of 80% as under universal access guidelines, and the corresponding unit cost of US$ 100:

# of high-risk population x 80% coverage x US$ 100 = total cost

In the latent scenario, cost calculations assume that prevention interventions should reach 80% coverage for all injecting drug users, men who have sex with men and sex workers, as defined by maximum effectiveness packages. Sex worker interventions implicitly assume that clients also change their behaviour as well, so that this very large group is not counted as part of the high-risk population described in the formula above.

[83] The range varies between US45-157

Subsequent epidemic scenarios require that this 80% coverage of prevention interventions for injecting drug users, sex workers and men who have sex with men is maintained. Since calculations of total cost are based on a generic Asian population of 100 million, the per capita cost is then derived by dividing total cost by 100 million.

Table 4.16: Total and per capita costs under different epidemic scenarios

('000 US$)	Latent epidemic scenario	Expanding, maturing & declining epidemic scenarios
Injecting drug users	11 076	11 076
Sex workers and their clients	8 634	8 634
Men who have sex with men	--	22 152
Total cost	19 710	41 862
Per capita cost (US$)	0.20	0.41

Prevention interventions aimed at groups whose behaviours put them most at risk have been demonstrated to have the best results in averting new HIV infections. Studies conducted in Thailand, Cambodia and several states in southern India have proven that prevention efforts work, and are affordable and achievable. It is therefore imperative that prevention measures are put in place and given top priority in order to halt and reverse the trend of the AIDS epidemic.

The per capita costs given here are will (also) be used later in costing the complete package as well.

Box 4.6: Specification of standards for each prevention intervention

II. Activity		III. Frequency
Peer education	-	Once in fortnight
Prevention Commodity	-	Condoms to cover all sex acts for sex workers, MSM and IDU
	-	Clean needles for 80 per cent of all injections and 70 per cent of injectors
Prevention Treatment	-	STI care for sex workers and men who have sex with men (at least 2 visits per year)
	-	Methadone/buprenorphine treatment for at least 30 per cent of injectors
Enabling environment	-	Local advocacy with all power structures, promoting self-organization of community groups and affected people.

4.3.10 Prevention of mother-to-child transmission

Women whose partners visit sex workers, and their children are also at possible risk of HIV infection and prevention efforts should specifically address their needs. Thus, the costs of prevention of mother-to-child transmission (PMTCT) and voluntary counselling and testing (VCT) for reducing spousal transmission were also recalculated based on regionally derived estimates of target populations and unit costs. These calculations are as follows:

4.3.10.1 Size of target population

There are no up to date statistics for the number of the HIV-positive pregnant women in regions of low HIV prevalence in Asia. These are not publicly available from any reliable source, following the recent revisions of HIV related statistics carried out in India and Cambodia. Therefore, the number of positive women was estimated using the Asian Epidemic Model, the results of which are shown in Table 4.17 below. The model assumes the rate of transmission from mother-to-child is approximately 33%.

Table 4.17: Costing prevention of mother-to-child transmission

	Scenario I	Scenario II	Scenario III	Scenario IV
New infections in children	6	1,096	6,277	2,104
Pregnant positive women	19	3287	18,830	6313
Total cost	$2,450.97	$424,039.27	$2,429,120.56	$814,352.43
Per capita cost	$0.000	$0.004	$0.024	$0.008

Based on the 2006 Coverage Survey, approximately 184 000 HIV-positive women gave birth in the region[84]. Costs calculated are based on this figure of the number of women who require triple-drug therapy for prevention of mother-to-child transmission.

4.3.10.2 Target coverage

As these women and their infants are particularly at risk of infection, the coverage target for PMTCT has been set at 80%.

4.3.10.3 Unit cost

Prevention of mother-to-child transmission is an important component in protecting infants who may be at risk of infection. This cost estimate assumes that programmes to prevent mother-to-child transmission will focus on high-prevalence areas, where at least 1% of pregnant women are testing positive at antenatal clinics. The calculations presented are estimated for one positive woman requiring antiretroviral treatment. The unit cost should comprise the cost of screening pregnant women visiting antenatal clinics, the cost of post-test counselling for mothers and their partners, and the cost of drug therapy. These calculations are based on several assumptions, which are outlined here.

1. *Screening:* Assuming approximately one in every 200 pregnant women visiting antenatal clinics in Asia is HIV-positive and will require antiretroviral therapy for prevention of mother-to-child transmission. However, applying the false-positive rate for low prevalence, it is assumed that for every 200 women tested, 20 women will test positive: one is infected with HIV and the other 19 exhibit false-positive tests. Thus, these 20 women will require a second test, which may result in one or two positive tests. The remaining women testing positive will take one more test for confirmation. One additional hour is also added to the unit cost calculation. This means that to confirm one positive woman requiring antiretroviral therapy, 222 HIV-tests must be conducted.[85]

2. *Counselling for couples:* Expectant mothers are likely to be married or have regular sexual partners. If a woman tests positive, her male partner(s) should also be tested at least twice and participate in pre/post-test counselling as needed.

[84] Stover, J and Fahnestock M (2006). Coverage of Selected Services for HIV/AIDS Prevention, Care and Treatment in Low- and Middle-Income Countries in 2005, Washington, DC, Constella Futures, POLICY Project.

[85] ADB- UNAIDS (2004)

3. *Drug Therapy:* The most effective way of minimising the risk of HIV transmission from mother-to-child is to use triple-drug therapy for each positive mother-to-be.

The total cost of the three components, including the screening tests is US$ 130 per positive woman.[86]

4.3.10.4 Total cost

Total cost for the region is calculated by multiplying the total need by the unit cost per positive mother.

4.3.11 Voluntary counselling and testing

Targeted voluntary counseling and testing (VCT) should aim to identify discordant couples (where one partner may be positive but the other remains negative) and promote prevention for these groups. This is particularly important in the later stages of the epidemics, when married women are at increasing risk of becoming infected by their husbands. This would require counseling and testing for both partners.

4.3.11.1 Size of target population

The target population should be all couples where the man visits sex workers. In the 100 million Asian population discussed above, then, this refers to approximately 10% of the adult male population aged 15-49. The actual populations are given for the four different scenarios of the epidemic below:

Table 4.18: Costing interventions aimed at men visiting sex workers

Epidemic Scenarios	Latent	Expanding	Maturing	Declining
Men visiting sex workers	2,767,661	2,769,539	2,770,518	2,723,888
Total cost (at 10% coverage)	$9,410,047	$9,416,432	$9,419,762	$9,261 218
Per capita cost	$0.0941	$0.0942	$0.0942	$0.0926

4.3.11.2 Target coverage

To ensure that these men take necessary precautions, both when they visit sex workers as well as with their regular partners, it would be best if all men were targeted by this intervention. However, as no strategy has yet successfully resulted in an observed 80% uptake of voluntary counselling and testing, this cost calculation presupposes that some 10% of these men can be reached in each of the scenarios. The cost in each scenario and cost per capita are given in the table above.

4.3.11.3 Unit cost

The unit cost was calculated based on existing evidence from the region, which approximates the cost of VCT as US$ 17 per client; this cost is then doubled to include provision of VCT services for spouses or other regular partners as well.

4.3.11.4 Total cost

The total cost is then simply calculated by multiplying the 80% of the target number of couples by the unit cost.

[86] ADB- UNAIDS (2004)

4.3.11.5 Prevention for low-risk general populations

Although prevention aimed at groups potentially at high risk of HIV infection is essential to curb the epidemic, the general population is still vulnerable and should also be protected through prevention efforts. Such interventions could include (but are not limited to): treatment and management of sexually transmitted infections, HIV education in schools, social marketing of condoms, programmes specifically for women, and blood safety and universal precautions. Costing such interventions is often based on several different factors, such as number of teachers, units of blood, and number of condoms distributed, which do not allow for the straightforward costing outlined in the previous section.

Because of the lack of clear and easy-to-calculate costs available for the region, for the purposes of this study, the costs of these other prevention interventions are adopted from the existing figures for the region, as estimated by other global-level studies.[87] [88]

In summary, prevention costs are, for most items of the globally used template are based on existing global figures. The only figures that are different are the prevention interventions for high-risk populations, prevention of mother-to-child transmission, and voluntary counseling and testing for discordant couples.

Table 4.19: Estimated resources (in '000 US$) required for comprehensive prevention response in Asia, 2007

Intervention	RNM ('000 US$)	Per capita (US$)	Source (RNM is not the source , RNM is a tool)
Youth in school	25,450	0.01	(1)
Youth out of school	280,246	0.08	(1)
Community mobilization	500	0.0001	(1)
Sex workers and clients	292,357	0.09	(2)
Condom social marketing	103,658	0.03	(1)
Public and commercial condoms	524,573	0.15	(1)
STI management	262,548	0.08	(1)
VCT	260,815	0.08	(1)
Workplace	224,240	0.07	(1)
Prevention for people living with HIV and AIDS	4,119	0.001	(1)
Special populations	11,948	0.004	(1)
Blood safety	69,034	0.02	(1)
PMTCT	92,119	0.03	(1)
Mass media	8,686	0.003	(1)
Harm reduction	375,017	0.11	(2)
MSM	340,019	0.10	(2)
Post-exposure prophylaxis	2,130	0.001	(1)
Safe Injection	700,066	0.21	(1)
Universal precautions	908,255	0.27	(1)

[87] Based on data adopted from (a) *Resource needs for an expanded response to AIDS in low- and middle-income countries* (2005), Geneva, UNAIDS; (b) *Funding Required to confront the HIV/AIDS Epidemic in the Asia and the Pacific Region* (2004), ADB/UNAIDS Study Series Paper 1, Manila/Geneva: ADB-UNAIDS; (c) unpublished proceedings, meeting of the Economic Technical Reference Group, December 6-8, 2006, Kuala Lumpur, Malaysia.

[88] Unpublished proceedings, ETRG

Programme Management	669,655	0.20	15% of cost
For High-risk population	***1,250,592***	***0.37***	(2)
For Low-risk population	***4,000,145***	***1.18***	(1)
Total	**5 417 627**	**1.60**	--

*Based on total population of 3,385,920,376 people in 2007 (see country list below).

(1) Based on data adopted from (a) *Resource needs for an expanded response to AIDS in low- and middle-income countries* (2005), Geneva, UNAIDS; (b) *Funding Required to confront the HIV/AIDS Epidemic in the Asia and the Pacific Region* (2004), ADB/UNAIDS Study Series Paper 1, Manila/Geneva: ADB-UNAIDS; (c) unpublished proceedings, meeting of the Economic Technical Reference Group, December 6–8, 2006, Kuala Lumpur, Malaysia.

(2)Calculated based on Commission's calculations, as described in other parts of this paper

Programme management is calculated as an additional 15% above and beyond the cost estimates. The specifics of this calculation are further discussed below.

Prevention initiatives (including programme management) for people with behaviours, which place them at lower risk of exposure to HIV will cost about US$ 1.06 per capita of general population or high risk group.

As discussed earlier, the most effective intervention packages avert over 90% of infections in the region. The remaining interventions listed here are more peripherally related to AIDS prevention, and thus should be cost-shared, as described in a later section. It is proposed for the time being, then, in most resourced constrained-settings, at least 10% of this cost is to be shared by the AIDS budget, to stimulate remaining 90% resources from different ministries and budget lines that cover such interventions (e.g. education or youth ministry) .

4.3.12 Estimation of costs for treatment

Most treatment costs come from the provision of antiretroviral therapy and laboratory testing. The same Asian Epidemic Model for a generic 100 million population, which was used to cost prevention strategies for groups exposed to high risk of HIV infection through their behaviours, is also used to estimate the number of people needing antiretroviral treatment. Because the number of people needing ART will change with the epidemic's progression, the model must be run in the four different stages, assuming 80% coverage of both first- and second-line treatment in 2007. The model automatically calculates the number of people on first- and second-line treatment, based on the number of people being treated in previous years and the naturally observed progression from first- to second-line treatment.

The outputs, for the number of people on first- and second-line antiretroviral therapy, generated using this model are as follows in Table 4.20:

Table 4.20: Target population for first and second-line antiretroviral therapy, based on Asian Epidemic Model **

Epidemic scenario	Latent	Expanding	Maturing	Declining
Total treatment need	236	41,573	223,892 228,655	129,424 133,456
People on first-line antiretroviral therapy	189	33,258	182,924	106,764
People on second-line antiretroviral therapy	10	1,807	10,270	6,404

**80% coverage assumed

Assuming that we need to provide treatment universally, we estimate unit costs of US$ 450 for first-line treatment, and US$ 5 000 for second-line treatment. Each of these costs refers to a complete treatment package, including antiretroviral drugs, laboratory testing, transportation and other costs. We assume that at any point in time approximately 85% of all people on treatment are on first-line and the remaining 15% are on second-line treatment. The results are shown in the Table 4.21 below:

Table 4.21: Costs of providing first and second-line antiretroviral therapy

Cost (US$)	Latent	Expanding	Maturing	Declining
First-line cost	84,955	14,966,256	74,084,233	48,043,981
Second-line cost	50,195	9,032,849	91,462,016	32,019,244
Total Cost	135,151	23,999,105	165,546,250	80,063,224
Per capita cost	0.0001	0.24	1.66	0.80

4.3.13 Estimation of costs of impact mitigation

Impact mitigation is an essential component of any effective AIDS response. As long as people are becoming infected, they and their families must be provided support. The interventions costed here are for two forms of support: (a) social protection for children orphaned by AIDS and other vulnerable children; and (b) livelihood sustainability and support for women (and specifically, widows).

4.3.13.1 Children orphaned or left vulnerable by AIDS

Costing for orphans and vulnerable children will be based on successful interventions, identified in previous studies of policies for children orphaned or left vulnerable by AIDS.[89] According to another study carried out by Viroj Tangcharoensathien and Waranaya Teokul[90] an effective programme for children orphaned by AIDS, which includes cash transfers to families willing to care for them, will cost no more than US$ 100 per child. With approximately 1 million children orphaned by AIDS in 2007, the total cost for Asia would be about US$ 100 million. The average per capita expenditure required therefore is approximately US$ 0.03.

4.3.13.2 Sustainable livelihood for women

Impact mitigation schemes for livelihood support of affected women are not very common in the Asian region and therefore standard costing figures are difficult to obtain. One successful income generation initiative is the Positive Partnership[91] programme, run by the Population and Development Association in Thailand and cited as a best practice by UNAIDS. Although this project has not been replicated at the national level being among the few such schemes available its costing figures have been adapted as the unit cost of such intervention at the regional level.

The Positive Partnership scheme provides an average loan of US$ 1 000 as an initial fund to allow affected women and households to sustain their livelihood after loss of a male family member due to HIV infection or death due to AIDS. If one were to ensure that these women are incorporated into such livelihood schemes prior to a death in the family, the number of women eligible or in need of a loan would be calculated based on the total number of infected men each year.

89 UNICEF, 2007

90 Chapter Two, Technical Annex to the Report of the Commission on AIDS in Asia (2008)

91 Chapter Six, Technical Annex, Report of the Commission on AIDS in Asia (2008)

On average, at any point in time, approximately 60% of men who are infected are also married and these households are the targets for the US$ 1 000 loan. The population size and cost calculations will differ with the scenario of the epidemic; these figures correspond to those also used for treatment needs, which are displayed again in Table 4.22 below:

Table 4.22: Per capita cost of ART Therapy under different epidemic scenarios

Epidemic scenario	Latent	Expanding	Maturing	Declining
Males newly eligible for ART	71	12,117	54,547	25,523
Married men (with affected wives and families)	43	7,270	32,728	15,314
Total cost (in '000 US$)	43	7,270	32,728	15,314
Per capita cost (US$)	0.0004	0.07	0.33	0.15

This per capita cost will be used for calculating the total cost.

4.3.14 Surveillance and programme management

Programme Management is an essential and vital component of the HIV response, but currently, no guideline or transparent methodology for estimating its costs exists in any public health structure. For the purposes of this study, programme management was estimated as an additional 15% above and beyond the costs of all HIV interventions, which is consistent with other comparable estimates. In total, this amounts to some US$ 831 million, which is divided into three parts:

1. **Monitoring and evaluation** (3%) to ensure the constant analysis, monitoring and evaluation of existing programmes for better quality control and to guide policy through analysis and synthesis of data.
2. **Surveillance and strategic information** (7%), which includes the collection of demographic, biological, social, behavioural, coverage and economic data, but more importantly, supports a unit to ensure the collection, organization, synthesis and analysis of this data for guiding policy and strategic planning.
3. **General programme management** (5%): The remaining 5% are reserved for administrative and financial programme management.

4.3.15 Opportunities for cost-sharing

AIDS is a multi-sectoral issue and, as such, requires a multi-sectoral response. This requires the pooling of resources - financial, human, infrastructures and so on- across different ministries and within the AIDS Commissions, to ensure the most effective form of response.

4.3.15.1 Prioritizing interventions

Those interventions that have the highest impact on HIV, or avert the most new infections should be fully funded by AIDS budgets. Other interventions that are proven to avert fewer infections in the short-term but also have peripheral benefits should be cost-shared with other relevant sectors.

The table below shows those prevention interventions defined in the global estimate, using the RNM, and the relative percentage of infections averted. It clearly shows that programmes likely to avert most new infections in the region are those that specifically reduce transmission among sex workers and their clients, injecting drug users and men who have sex with men, and these costs should thus

be fully funded from AIDS budget. However, even if all these interventions are fully funded strong engagement of the law and administrative authority is needed to ensure that people most at risk of infection like sex workers, IDUs and MSM population have access to prevention services in a decriminalized setting[92], Similarly health and social social security systems need to be strengthened respectively for ART services and livelihood programs,

Table 4.23: Prevention interventions defined in the Resource Needs Model and the relative percentage of infections averted and cost-effectiveness of each

Intervention	2007 resource needs estimate ('000 US$)	% infections averted (2007–2015)	Cost/infection averted (US$)
Sex workers and clients	376,000	73%	31
Harm reduction	192,167	2%	124
Men who have sex with men	329,491	1%	150
Voluntary counselling and testing	260,815	1%	300
Special populations	11,948		
Prevention for people living with HIV and AIDS	4,119		
Prevention of mother-to-child transmission	92,119		
Youth in school	25,450	0.3%	22 800
Youth out of school	280,246		
Community mobilization	500	1%	5,000
Social marketing of condoms	103,658		
Public and commercial supply of condoms	524,573		
STI management	262,548		
Workplace initiatives	224,240		
Blood safety	69,034		
Mass media campaigns	8,686		
PEP	2,130		
Safe Injection	700,066		
Universal precautions	908,255		
Total	**3,109,386**		

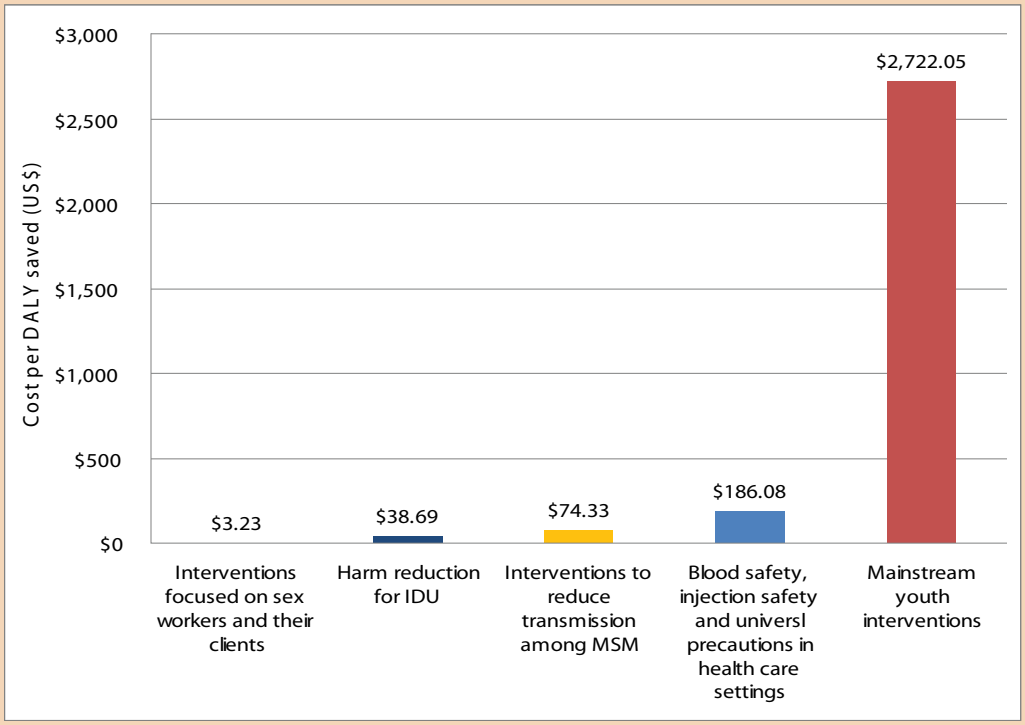
Box 4.7: Calculating the cost-effectiveness of HIV interventions

In order to prioritize and recommend the most effective HIV policies, the relative costs and outcomes of several prevention intervention scenarios were compared, by merging knowledge of the costs of interventions with their outcomes over time, to identify the high-impact and cost-effective interventions.

Building on the Asian Epidemic Model (AEM), the unit costs discussed for each intervention in the sections above are compared with their simulated outcomes, based on the model of a typical Asian country of 100 million people. Comparing with a baseline scenario of continued status-quo, several different policy scenarios (including interventions for most at risk population like injecting drug

92 Or Enabling Environment

users, sex workers, young people, and blood safety), were evaluated for their cost-effectiveness in terms of cost per disability-adjust life year, savings of ART (cost per US$1-investment in prevention) and overall impact (in terms of infections averted, lives saved and avoided treatment costs). The main results for these simulations are shown in Figure 4.17 and also in Table 4.23.



As shown in Figure 4.17 above, interventions that reduce transmission among high-risk behaviours (sex work, injecting drug use, and male-male sex), are highly cost-effective, ranging from less than US$10 to US$100 per disability-adjusted life year over a 20-year period. Such interventions will also avert the largest number of infections over that period. In contrast, health systems strengthening and other general population interventions including life skill education for young people are much less cost-effective, ranging from US$200 to over US$2,500 per disability-adjusted life year gained.

4.3.15.2 Sharing costs[93]

Other prevention programmes require more significant pooling of resources, in terms of infrastructure, human resources and funds. For example, HIV education in schools will require formation of a curriculum and training of teachers, which in resource constrained settings can partly be catalyzed by the AIDS budget. Such training, however, could also be incorporated into training on sexual and reproductive health classes, so that the financial and human resources could then be combined, thus lowering the overall burden on both ministries involved.

Similarly, costs of blood safety and universal precautions could be shared between AIDS budgets and the health care sector. Regardless of whether or not AIDS is a serious threat to the shared blood supply, safe blood is an important health issue. Blood donations must also be tested for other blood-borne infections such as Hepatitis C before it is safe for transfusion. Building those infrastructure safeguards to ensure safe blood, then, are costs that can be shared between AIDS budget as well as Ministry of Health; however, the cost of rapid test kits specifically used for testing for HIV certainly *are* the responsibility of and should be fully funded by AIDS budgets.

[93] Also see Note 4F

Given that such infrastructure programmes, such as HIV education, blood and injection safety, universal precautions etc. are very costly, it is proposed that as a rule AIDS budgets should cover an average of at least 10% of all the costs identified here in resource constrained settings.

Resources for treatment can also be cost-shared. Costs of first- and second-line antiretroviral therapy should be borne by AIDS budgets, which should include laboratory testing and the cost of outreach using people living with HIV and AIDS for active enrolment of other HIV- positive people into treatment as well as cost of transport. Health care workers who are needed to administer tests and treatment are already working in the health care system, and thus should be covered under the budgets of the Health Ministry.

Similarly, impact mitigation for children who are orphaned by AIDS or left vulnerable, for widows and poor families should be (in the long-run) incorporated into existing social welfare and social security schemes. AIDS budgets should continue to fully fund outreach services specific to AIDS affected households, because stigma in the community may otherwise prevent families from accessing these services. Impact mitigation programmes, can take two approaches:

(1) Where social security structures do exist, outreach networks should facilitate access to services for families who may otherwise face stigma; alternatively,

(2) Where they do not exist, AIDS programmes for widows and orphans can be used for launching or initiating other social security measures.

This follows a principle of integration of different initiatives. Where services do not exist, e.g. services for people whose behaviour places them at high risk of HIV infection, programmes should be delivered in a direct fashion. Where programmes already exist in some form (e.g. treatment) they can be integrated into existing health care delivery systems.

The costs of each component, the extent of financial cost-sharing with other ministries, and suggestions of other ministries that should be involved, are all given in the Table 4.24 below.

Table 4.24: Cost-sharing for HIV interventions, a multi-sectoral approach

	Per capita cost (US$)	% borne by HIV	HIV budget (US$)	Possible cost-sharing Ministries
Prevention	1.35–1.49	—	—	—
High-risk groups	0.20–0.31	100%	0.20– 0.31	Police
Catalyzing prevention into general population, stigma reduction, and mass media and other prevention programmes	1.06	10%	0.11	Health, Education,
Impact mitigation	0.03– 0.36	—	—	—
Orphans and vulnerable children	0.03	100%	0.03	Social welfare, Education,
Income generation	0.00–0.33	100%	0.33	Social welfare
Programme management	0.005–0.32	100%	0.005–0.32	Health
Total per capita cost*	1.43– 3.52	—	0.48– 2.57	—

*Refers to total population, not adult population

4.3.16 Per capita costs and the regional AIDS response

Based on the previous steps described here, the per capita costs in each scenario are given as follows:

Table 4.25: Per capita costs in each of the four scenarios of the epidemic

Cost per capita (US$)	Latent	Expanding	Maturing	Declining
High-risk group prevention	0.20	0.31	0.31	0.31
PMTCT	0.00	0.00	0.02	0.01
VCT	0.09	0.09	0.09	0.09
Other prevention	0.11	0.11	0.11	0.11
Total Treatment	0.00135	0.24	1.34	0.80
Paediatric antiretroviral treatment	0.00001	0.00	0.02	0.01
Care of orphans and vulnerable children	0.03	0.03	0.03	0.03
Total per capita cost	0.48	0.975	2.57	1.72

The costs described above are calculated for a generalized 100 million population in the region. To scale-up costs that are appropriate to the situation in Asia will take three steps:

a) Identify country scenarios: Countries are identified in the following scenarios.

Table 4.26: Countries currently in each scenario of the epidemic

Latent	Expanding	Maturing	Declining
Bangladesh	China	None at present	Cambodia
Lao PDR	India		Thailand
Maldives	Indonesia		
Pakistan	Malaysia		
Philippines	Myanmar[94]		
Sri Lanka	Nepal		
	Viet Nam		

b) Total country populations: In this study, total population figures were drawn from the CIA Fact Book, which publishes annual population estimates for all countries. The calculations are currently based on total population *only* but to add further sophistication and credibility, age-gender factors could also be considered as well.

c) Calculation of total cost: The sum of total populations of countries in each scenario is multiplied by the per capita resource need for each scenario, which results in a resource need for AIDS-budget of approximately US$ 3 billion, or US$ 1 per capita.

[94] Currently, Myanmar shows a declining trend in HIV in some sub-populations, as do a small number of states in India, but given uncertainties in data, for this work, both India and Myanmar have been classified as 'Phase II' countries. An examination of the impact of reclassifying these countries as 'Phase IV' shows no significant impact on the findings.

Table 4.27: Calculation of total costs

Scenarios	*Latent*	*Expanding*	*Maturing*	*Declining*	**Total**
No. of countries	8	7		2	17
Total population (millions)	439	2,873		79	3,391
Interventions	***Average resource needs in US$ (per capita)***				***Est. resource needs in millions US$ (total=$3,143)***
Prevention of most at risk population	0.20	0.31	0.31	0.31	1,008
Reducing spousal transmission	0.09	0.09	0.11	0.10	330
Treatment by ART	0.001	0.24	1.36	0.81	761
Impact mitigation	0.03	0.10	0.36	0.18	321
Program management	0.05	0.11	0.32	0.21	363
Creation of enabling environment	0.11	0.11	0.11	0.11	359
Average total cost (per capita)*	**0.48**	**0.97**	**2.56**	**1.72**	**0.93**

Epidemic scenarios	*Latent*	*Expanding*	*Maturing*	*Declining*	**Total**
Total prevention	0.397	0.517	0.537	0.519	—
Total treatment	0.001	0.24	1.35	0.81	—
Total impact mitigation	0.0304	0.10	0.36	0.18	—
Total programme management	0.05	0.11	0.32	0.21	—
Enabling environment					
Total population ('000s)	434,084	2,872,771	0	79,064	3,385,920
Total cost ('000s USD)					3,143,047
Unit cost (per capita)*	0.48	0.975	2.57	1.72	—

*Total population and not adult population only.

The end result clearly shows an annual need of approximately US$ 3.3 billion or an average of one US$ per person in Asia to reach the targets of 80% coverage for prevention and treatment and 100% coverage for impact mitigation, with an outcome of 75% of new infections and 50% of AIDS deaths averted.

4.3.17 The limitations of this estimation

- Cost estimates conducted are based on a representative 100 million Asian population, and thus do not necessarily reflect country and cultural differences, and relative population sizes, which may affect costs. The figures proposed here suggest a normative resource need model, which countries can use as a broad guideline, but national or sub-national estimates of resource need should also be conducted based on local data of population sizes and unit costs. The costs outlined in this paper allow countries to adjust the model according to their own epidemiological and behavioural circumstances.

- The model offers cost-estimates for each of the interventions based on current knowledge of the AIDS epidemic in the region. However, interventions like voluntary counselling and testing and workplace programmes still lack clearly effective strategies to target populations with behaviours that place them at higher risk of HIV infection. It is clear that such interventions must be implemented in order to protect these vulnerable populations from further infection, but effective strategies are still elusive.

SUPPLEMENTARY NOTES

NOTE 4A: METHODOLOGY OF TRACKING OF AIDS EXPENDITURE

The data gives a fairly clear idea of the overall level of external funding and the contributions of different donors, but several inconsistencies remain that can only be resolved by improving resource-tracking mechanisms and expenditure data collection systems.

Programmatic distribution: It was not possible to assess the programmatic distribution of all AIDS expenditures. This is a major omission, as it is impossible to make assessments about the effectiveness of allocations and the consistency with priorities expressed in the countries' national strategic plans.

Geographic distribution: A further omission is information about geographic distribution of funding. Many countries in the region are highly populous and have epidemics that are concentrated geographically. A targeted and strategic AIDS response is critical determinant of success and is impossible without information on the geographic distribution of expenditures.

Actual expenditure versus budgeted allocations: A further challenge was the inability to obtain actual expenditures (as opposed to budgeted allocations). Figures 32 and 33 showed increasing variance between available or budgeted resources and actual expenditure as more resources become available. The ability to track and measure actual expenditure is therefore becoming of even greater importance.

Double-counting: Double-counting of expenditures, especially among donors who are also implementing agencies, is a challenge often encountered when estimating HIV expenditure. For example, UN agencies that are sources of financing are also implementing agencies for bilateral donors. Another example is implementing agencies such as international NGOs that also act as financial intermediaries channeling resources to local NGOs.

Period over which expenditure was made: Various institutions have different time periods for financial reporting. Furthermore, donors and foundations often make multi-year commitments, and, thus, it is particularly difficult to obtain annual expenditure data. All efforts have been made to ensure that the time period for all expenditures collected were reported and appropriately annualized.

Definition of HIV expenditure: Not all AIDS-relevant activities are earmarked as being AIDS-specific interventions and hence measured as such. To accurately estimate AIDS resources, one has to take into account not only those expenditures clearly earmarked for AIDS but also those that might not be so, but have a clear relevance to the containment and treatment of the disease. Health system resources are examples. This is not always easy because it requires determining the proportion of non-earmarked expenditures that are relevant for AIDS. In this database, therefore, AIDS expenditure was restricted to resources that are clearly earmarked for HIV interventions.

Donor overheads versus programmatic expenditure: There is inconsistency across the various data sources on the how programmatic expenditure and donor overheads are included as AIDS expenditure. In some instances, funds used for representational purposes by international organizations were generally excluded. However, this was imperfectly done and may contribute to an overestimate of the resources for actual implementation of the AIDS response in various countries.

Domestic private (household and business) expenditure on AIDS: As mentioned earlier, household expenditure data is generally excluded from currently reported AIDS expenditure. Also excluded

are expenditures by businesses on AIDS including prevention (e.g. the provision of condoms, STI treatment), expenditure on care and treatment as well as expenditure on impact mitigation (e.g. funeral assistance etc.).

Exchange rate: The expenditures are generally reported in current US dollars. Countries experience exchange rate fluctuations and to the extent possible these have been taken into account, especially for domestically funded AIDS resources.

Purchasing power parity: Purchasing power parity takes into account variances in domestic purchasing power of a given level of expenditure. However, it makes the assumption that prices of goods and services purchased follow the same structure as the broader economy, which is not always the case. Variance in domestic and international purchasing power is especially of concern for non-tradable inputs, for example, domestically provided labor inputs. Where goods are purchased from international markets (e.g. imported drugs, imported medical supplies and international technical assistance) the conversion to international dollars does not necessarily add value. In subsequent versions of this report the results will be reported in both US dollars and international dollars.

NOTE 4B: BREAKDOWN OF AIDS EXPENDITURE BY INTERVENTION

Table 4.1B: Breakdown of AIDS expenditure by intervention (Thailand)

Expenditure in Thai Baht		Year				
		2000	2001	2002	2003	2004
1. Prevention-related activities		*483.13*	*562.4*	*778.33*	*522.33*	*640.41*
1	Mass media	21.66	36.15	29.51	76.22	50.9
2	Community mobilization	—	—	—	—	—
3	Voluntary counseling and testing (only for general population)	27.72	26.51	23.47	38.32	36.69
4	Youth in school	—	—	—	—	8.39
5	Youth out of school	—	—	—	—	18.95
6	Programs focused on sex workers and their clients	—	—	—	—	—
7	Programs focused on MSM	—	—	—	—	—
8	Harm reduction Programs for IDUs	100.17	39.24	59.27	73.4	130.97
9	Workplace	—	—	—	—	—
10	Prevention programs for people living with HIV	—	—	—	—	—
11	Special populations	—	—	—	65.84	103.5
12	Condom social marketing	—	—	—	—	—
13	Public and commercial sector condom provision	16.4	25.08	54.68	27.17	27.17
14	Improving management of STIs	22.1	22.63	22.46	16.92	18.32
15	Prevention of mother-to-child transmission	210.77	328.47	504.63	140.13	161.19
16	Blood safety	84.32	84.32	84.32	84.32	84.32
17	Post-exposure prophylaxis (health care setting, rape)	—	—	—	—	—
18	Safe medical injections	—	—	—	—	—

19	Universal precautions	—	—	—	—	—
2. Treatment and care components		*1,686.71*	*1,529.04*	*2,123.55*	*2,634.15*	*4184.11*
1	Palliative care	—	—	—	—	—
2	Provider initiated testing	—	—	—	—	—
3	OI Treatment	1,124.63	1,162.28	1,396.36	1,430.33	1,505.62
4	OI Prophylaxis	—	—	—	—	—
5	ART, including nutritional support	498.18	350.09	581.23	860.45	2,053.73
6	Laboratory testing	26.88	16.67	145.97	343.38	624.76
7	Home-based care	37.03	—	—	—	—
8	Daycare	—	—	—	—	—
9	Transportation for patient	—	—	—	—	—
3. Orphan and vulnerable children — OVC		*84.9*	*84.59*	*83.94*	*80.66*	40.68
1	Education	—	—	—	—	—
2	Health care support	—	—	—	—	—
3	Family/home support	84.9	84.59	83.94	80.66	40.68
4	Community support	—	—	—	—	—
5	Organization costs	—	—	—	—	—
4. AIDS program costs		*368.53*	*395.72*	*188.41*	*312.25*	*78.12*
1	Management	45.51	75.31	46.48	—	—
2	Advocacy and communications	—	—	—	—	—
3	Monitoring and Evaluation	—	—	—	—	—
4	Operations Research (research and development)	135.7	209.93	124.63	297.01	62.88
5	Surveillance (sero-sentinel, behavior surveillance)	19.14	18.03	16.86	15.21	15.24
6	Training	168.18	92.46	0.43	0.04	—
7	Logistics and supply, including transportation	—	—	—	—	—
8	Supervision of personnel and patient tracking	—	—	—	—	—
9	Drug resistance surveillance	—	—	—	—	—
10	Construction of new health centers	—	—	—	—	—
11	Laboratory and other infrastructure upgrading	—	—	—	—	—
5. Human resources receiving wage benefits (at delivery service)		—	—	—	—	—
1	monetary incentive for doctor	—	—	—	—	—
2	monetary incentive for nurse	—	—	—	—	—
3	Monetary incentive for other staff (i.e. laboratory, team leader etc.)	—	—	—	—	—
	Grand total — million Baht	2,623.27	2,571.75	3,174.24	3,549.39	4,943.32
	Grand total —million USD	65.4	57.88	73.89	85.56	122.9

Source: IHPP (2006)

Table 4.2B: Breakdown of AIDS expenditure by intervention (Viet Nam)

PEPFAR category	% of Total AIDS Exp (2004)
Prevention	37%
Behavior change (includes both abstinence programs and other behavior change programs)	34%
Medical transmission (includes blood safety and injection safety)	2%
Other prevention activities	1%
PMTCT	2%
Counseling and testing	3%
Treatment (ART)	4%
Palliative care	23%
Orphans and vulnerable children	0%
Capital formation (including "labs" as defined by PEPFAR)	3%
Strategic information	2%
Other: policy and systems strengthening (capacity Building)	27%
Total	**100%**

Source: Abt Associates (2006)

Table 4.3B: Breakdown of AIDS expenditure by intervention (Cambodia)

Interventions	2001	2002	2003	2004
Policy environment	*8%*	*12%*	*11%*	*7%*
Leadership	0%	2%	1%	1%
Human rights	0%	0%	0%	0%
Stigma	7%	9%	7%	4%
Community mobilization	1%	1%	2%	2%
Prevention	*57%*	*47%*	*48%*	*39%*
Mass media/IEC[95]	28%	19%	18%	17%
VCCT	2%	1%	3%	2%
Social marketing	5%	5%	4%	2%
Outreach	3%	2%	1%	2%
High risk groups	0%	0%	0%	2%
Youth: in-school	4%	6%	4%	2%
Youth: out-of-school	2%	2%	1%	0%
Blood safety	0%	0%	2%	0%
Condoms	0%	1%	1%	1%
STI treatment	4%	3%	3%	4%
Workplace programs	6%	6%	8%	5%
PMTCT	2%	1%	2%	1%
Universal Precautions	1%	1%	0%	0%

[95] During the data collection many of the implementing agencies included expenditures targeting high-risk groups such as sex workers, MSM and IDU under the category mass media and IEC.

Safe injections (in health service delivery)	0%	0%	0%	0%
Care and treatment	*21%*	*17%*	*21%*	*38%*
Institutional care	1%	1%	2%	12%
Home-based palliative care	0%	1%	2%	11%
Treatment of OIs (including Tuberculosis)	5%	4%	3%	3%
HAART	14%	12%	14%	11%
Support and mitigation	*2%*	*10%*	*12%*	*3%*
Orphanage care	1%	3%	4%	1%
Community support for OVC	1%	3%	4%	1%
School support for orphans	1%	3%	4%	1%
Other	*11%*	*13%*	*10%*	*14%*
Management and coordination	8%	6%	5%	6%
Monitoring and evaluation	2%	3%	2%	1%
Research	1%	3%	1%	4%
Surveillance	0%	0%	0%	0%
Other: construction of OPD HIV center	0%	0%	0%	1%
Other: capacity building	0%	2%	1%	1%
Other: strategic planning	0%	0%	0%	0%
Other	0%	0%	0%	0%
Subtotal	**100%**	**100%**	**100%**	**100%**

Source: POLICY Project, 2005.

NOTE 4C

The 25 interventions considered by the Resource Needs Model are as follows:

Interventions

1. Programmes aimed at sex workers and clients
2. Harm reduction programmes
3. Initiatives aimed at men who have sex with men (MSM)
4. Provision of voluntary counselling and testing (VCT)
5. Prevention of mother-to-child transmission
6. Use of condoms, (both publicly and commercially provided)
7. Promotion of universal precautions
8. Safe injection practices
9. AIDS education for youth in school
10. AIDS education aimed at youth out of school

11. Management of sexually transmitted infections
12. Workplace programmes
13. Interventions aimed at special populations
14. Social marketing of condoms
15. Blood safety screening
16. Prevention of further infection by people living with HIV and AIDS
17. Mass media campaigns
18. PEP
19. Community mobilization

Treatment

20. Provision of adult antiretroviral drugs
21. Provision of pediatric antiretroviral treatment

Impact mitigation

22. Caring for children orphaned and left vulnerable by AIDS
23. Income-generating schemes for widows
24. Surveillance and monitoring and evaluation
25. Management of low-risk prevention.

NOTE 4D

Table 4.1D: Coverage targets used

	Low Level	Concentrated
Vulnerable populations		
AIDS education for primary and secondary students	30%	45%
Programmes focused on out-of-school youth (6–15)	10%	20%
Programmes focused on sex workers and clients	80%	80%
Programmes focused on MSM	80%	80%
Harm reduction programmes for IDU	80%	80%
Prevention for people living with HIV	80%	80%
Workplace prevention	0%	3%
General populations		
% of adults reached through community mobilization	0%	0%
Number of mass media campaigns per year	2	4
Per cent of adult population accessing VCT each year	0.1%	1%

% of casual sex acts covered with condoms	80%	80%
% of married people with casual partners using condoms in marital sex	30%	30%
Medical services		
% of need for post-exposure prophylaxis that is met	100%	100%
Safe blood (proportion of units screened for HIV)	100%	100%
Safe medical injections	77%	92%
Universal precautions	77%	92%
STI treatment	60%	75%
PMTCT (coverage among women attending antenatal clinics	80%	80%

Source: Stover et al 2006, Science, Supporting Online Material

NOTE 4E: COMMISSION ON AIDS IN ASIA- BASELINE SCENARIOS DESCRIPTION

Introduction

Given below are the revised baseline scenarios used as part of the policy analysis work of the Commission on AIDS in Asia.

The scenarios are defined as follows to allow for intervention costs and impacts to be explored for interventions conducted over the 10-year period from 2008 – 2018:

- Scenario I (early intervention) – IDU epidemic begins in 2008 – in this scenario interventions are being taken to scale as the epidemic begins to take hold;
- Scenario II (intervention during growth scenario) – IDU epidemic begins in 1995, so the sex work component is well underway when intervention starts;
- Scenario III (no intervention) – IDU epidemic begins in 1985, no behavioural intervention prior to 2008; and
- Scenario IV (post-containment phase) IDU epidemic starts 1985 – interventions for sex work component raise condom use to 80% between 1998 and 2003.

In all cases an assumption is made that HIV is introduced into the heterosexual and MSM populations in 1985, but as is common in Asian epidemics serious epidemic growth only begins after the IDU epidemic commences.

The transmission parameters have been set to scientifically acceptable values that produce approximately 2.5% HIV prevalence in adults 15 and older by 2030 in the absence of ART assuming a 1995 start to the IDU epidemic. This produces a steadily growing epidemic that passes 0.5% adult prevalence in 2010 and 1% in 2018. The assumptions made in the Scenario II baseline scenario are described later in this Note. The other baselines only involve changing the start years of the epidemic, and in the case of Scenario IV, the condom use in sex work.

ART coverage

ART coverage has been set according to the reported values from WHO and the universal access initiative, starting from 0% coverage in 2000, growing to 4% in 2002, and 5% in 2003. With the

introduction of the "3 by 5" initiative[96], these grew more rapidly in subsequent years to 8% in December 2004, 16% in 2005, and 19% in 2006. It was then assumed that 50% would be reached in 2010 with a more gradual subsequent growth to 80% by 2020. Coverage was stable at 80% after that. Second line therapy coverage was set so that roughly 15% of individuals were on second line therapies by 2020.

Population sizes

The overall population size has been set to 100 million in 2007. The characteristics of population growth, fertility and mortality have been set from the UN Population Division's projections for Asia as a whole under the medium fertility assumption without AIDS. The size of the female sex worker population has been set to 0.4% of the adult female population aged 15 to 49. The client population has been set to 10% of adult male's aged 15 to 49. Injecting drug users are assumed to make up 0.5% of the adult male population, and 2% of adult males are MSM. These values are in the midrange of observed values for Asian countries.

Behavioural inputs – heterosexual

Heterosexual risk behaviours are set as follows. For sex workers, it is assumed they have one client per night and work five days per week. Condom use between sex workers and clients is assumed to be 10% until 1995, then grows steadily to 30% in 2005, remaining steady after that. It is assumed that 5% of the males and 2% of the females have casual sex, with approximately 15 contacts per year with 20% condom use.

Behavioural inputs – injecting drug users

For injecting drug users, behavioural parameters are set to produce saturation HIV prevalence between 50% and 60%. Among the IDUs, 67% are assumed to share with 60% of all injections being shared. It is assumed that they inject 2.5 times per day. One-fifth of IDUs is assumed to visit female sex workers with the same condom use as heterosexual clients.

Behavioural inputs – men who have sex with men

Among MSM, 50% are assumed to have anal sex with a frequency of one anal sex contact every two weeks. Condom use among MSM is assumed to grow steadily from 10% to 50% between 1990 and 2005, and to remain steady at 50% after 2005. Approximately 10% of the men visit male sex workers with the same levels of condom use mentioned earlier. Fifty percent of male sex workers are assumed to have three anal sex contacts per week.

Transmission parameters

The transmission probabilities are set as follows: per injection risk with an infected needle 0.006; per anal sex contact risk for MSM 0.0083; and male-to-female transmission probability in the absence of sexually transmitted infections 0.00154. The ratio of male-to-female-to female-to-male-transmission is set at 3. Cofactors are set to at 30 for the male STI cofactor, 10 for the female cofactor, and 3 for the circumcision cofactor. These are all values that are in agreement with numbers reported in the scientific literature, and in accordance with the country specific values used in fitting epidemics in many countries.

[96] "3 by 5" was a WHO/UNAIDS global initiative aimed at placing three million people living with HIV in low- and middle-income countries on antiretroviral treatment by the end of the year 2005.

Results of the Scenario II Baseline

The scenario II baseline is a proxy for countries that saw their IDU epidemics take off in the mid-1990s. It produces an epidemic that grows gradually from 0.3% in 2007 to pass 1% in 2018 with over one million infections by 2019. Figure 4.1E shows the growth of this epidemic. The parameters have been set so that adult HIV prevalence is 2.5% in 2030. With the projected ART coverage, this produces a steady increase in the number of people on ART from 11 000 in 2007 to 260 000 in 2020. In 2020 approximately 85% of the people are on first-line therapy and 15% are on second line therapy. Because the epidemic is expanding rapidly this almost triples to 815 000 by 2030, at which time 20% of those on ART are on second line therapy.

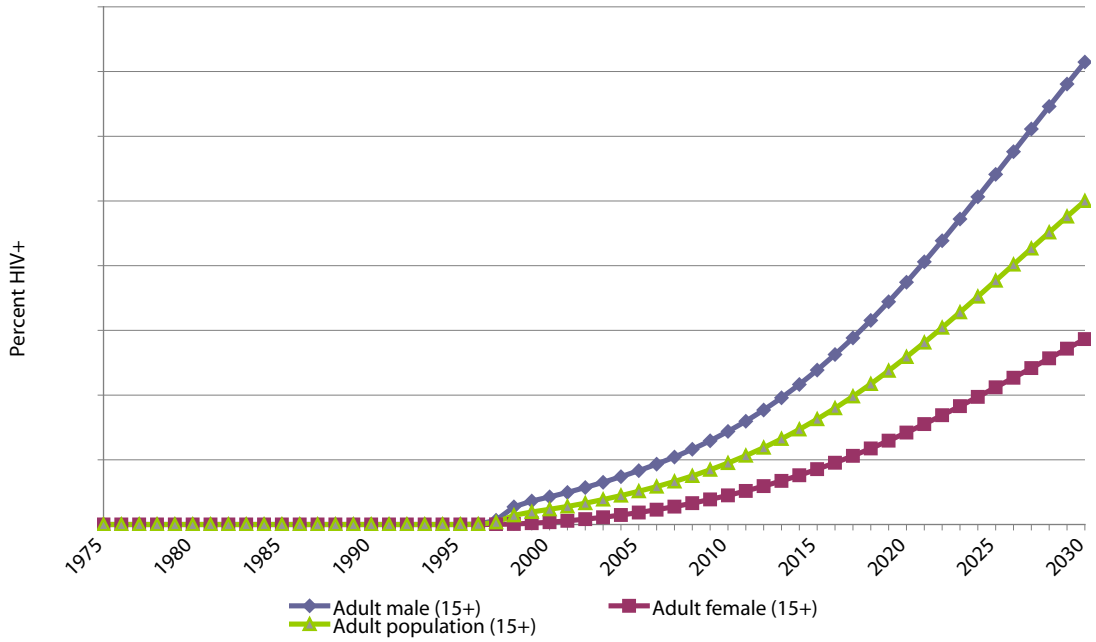


Figure 4.1E: Growth of the epidemic in the Scenario II baseline to 2.5% in 2030

Figure 4.2E shows the growth in HIV prevalence in the various populations. IDUs rise rapidly to about 50%. Sex workers climb steadily to 10% in 2010, 25% in 2020 and have exceeded 40% by 2030. The MSM epidemic is approaching 2% in 2010, but is accelerating and exceeds 10% by 2020, climbing to over 30% by 2030.

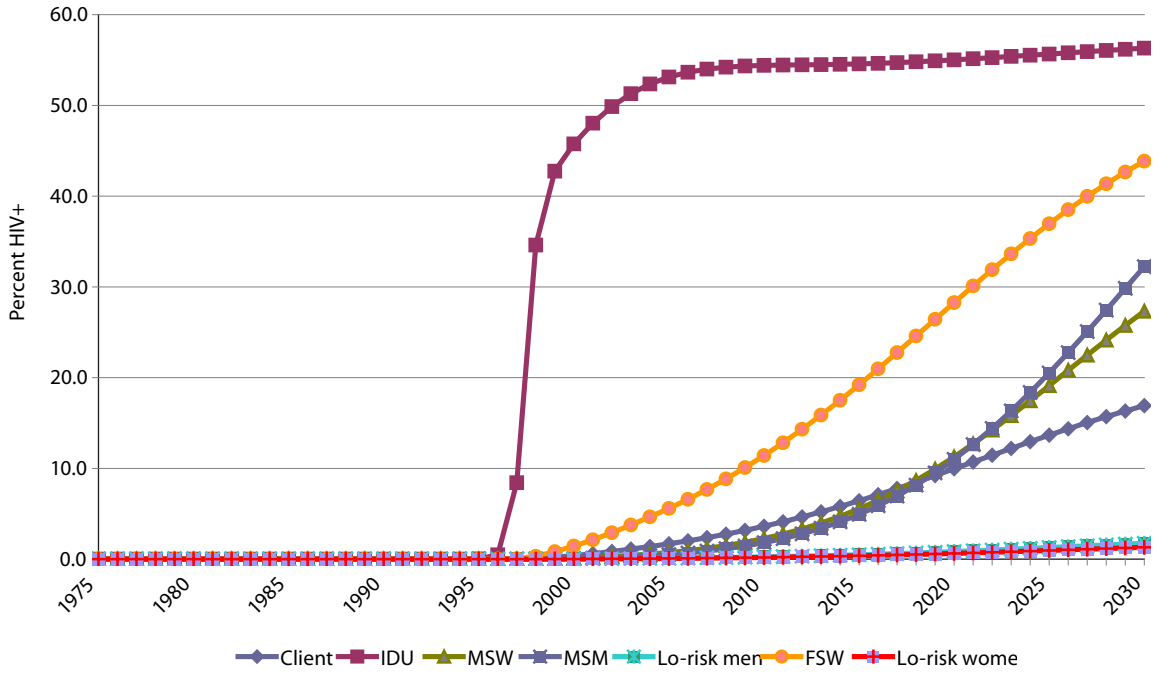


Figure 4.2E: Growth of HIV prevalence (in %) in the populations in the Scenario II baseline.

Figure 4.3E shows the growth in the number of new infections, and in the proportion of due infections in each of the key populations. As expected in an Asian epidemic, clients of sex workers and their wives, low-risk women, dominate the new infections. However, the contribution of MSM to total prevalence grows over time. IDUs dominate in the earliest stages of the epidemic, but in later stages are contributing a roughly equal number of new infections every year.

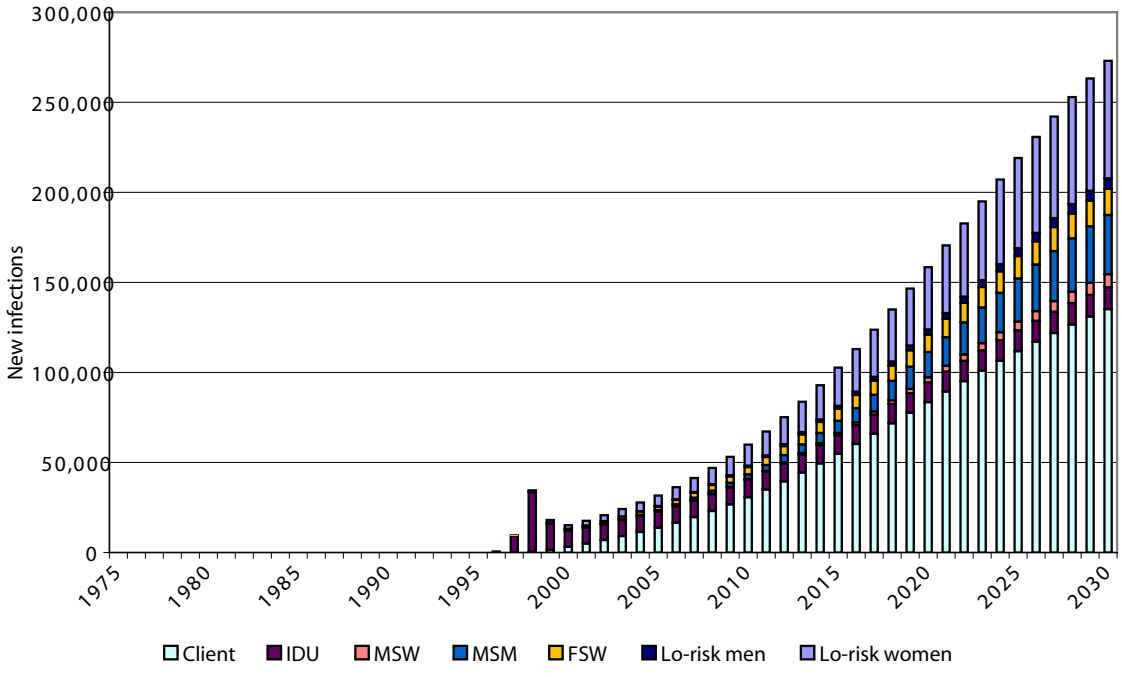


Figure 4.3E: Proportion of new infections in different populations in the Scenario II baseline.

Results of the Scenario III Baseline

The Scenario III baseline starting earlier and being non-intervened produces a more severe epidemic, which looks identical to the Scenario II epidemic for its first 20 years. Having started earlier it grows to higher levels of 3.7% adult prevalence by 2030 (figure not shown – looks basically like Figure 1 but keeps growing for another decade). Prevalence in most risk populations grows to substantial levels (see Figure 4.4E). Both the sex work and MSM components are contributing substantially to the epidemic, while the IDU contribution is substantially smaller as shown in Figure 4.5E.

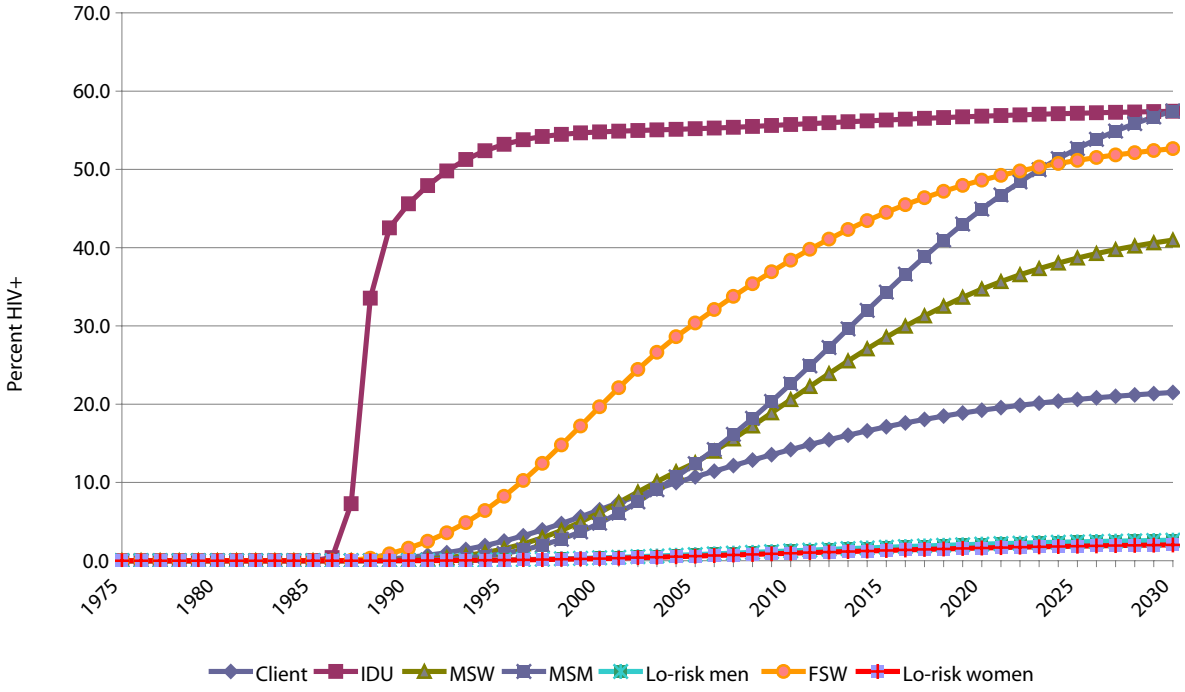


Figure 4.4E: The HIV prevalence in different populations in the Scenario III baseline

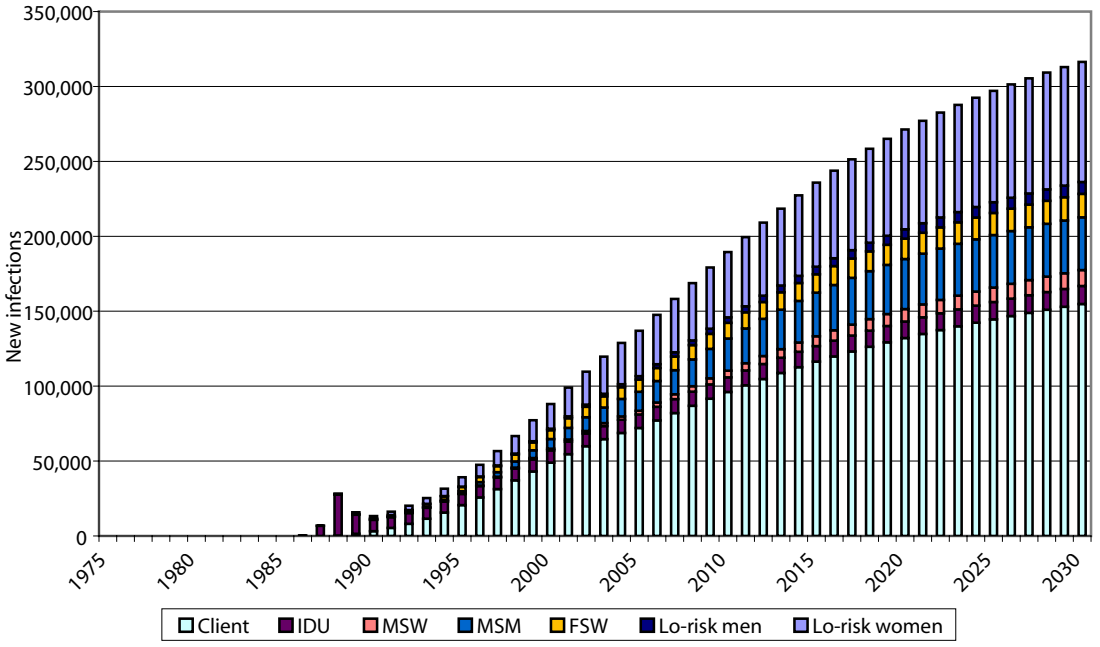


Figure 4.5E: Contribution of different populations to new infections – Scenario III baseline.

The Scenario IV Baseline

In the Scenario IV baseline the sex work component of the epidemic is brought under control in the late 1990s. As a consequence, prevalence starts to fall in the late 2000s, but then starts to rise again (see Figure 4.6E).

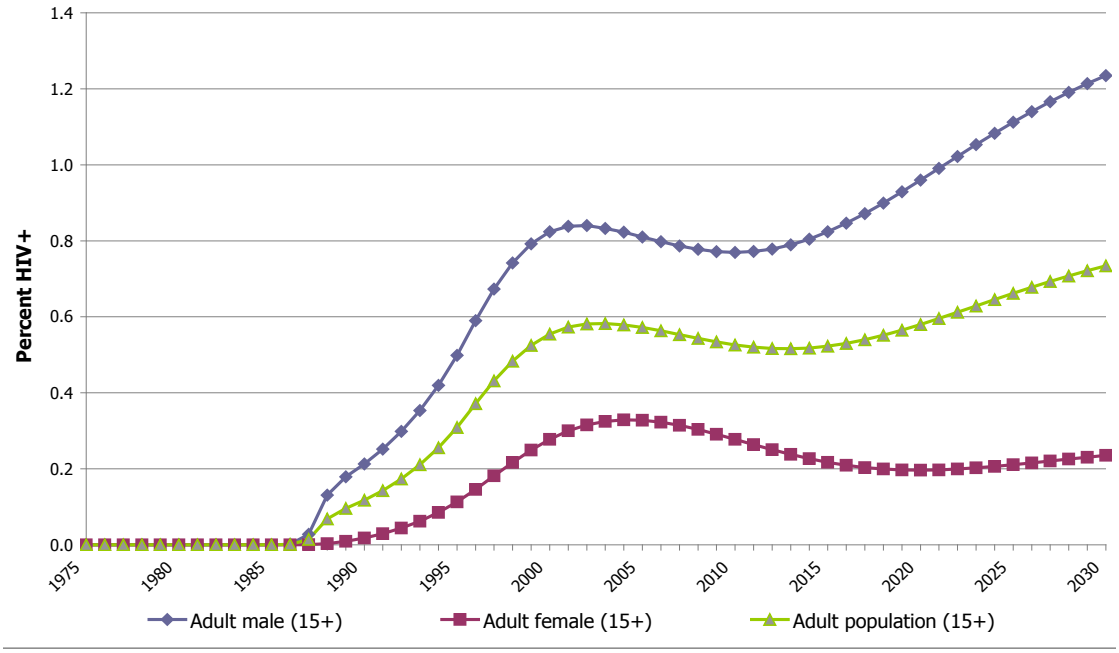


Figure 4.6E: The prevalence pattern changes in the Scenario IV baseline due to intervention

On the face of it, this seems a bit strange, but when one examines the prevalence patterns (Figure 4.7E), one sees a serious drop-off in prevalence in sex workers and clients produced by the intervention in sex work in the mid-2000s. However, prevalence among IDUs remains high and prevalence among MSM and male sex workers continues to grow rapidly.

When one examines the contribution to new infections (Figure 4.8E), the reason for the prevalence rise after 2010 becomes apparent. It is the result of the failure to contain the epidemic among MSM and IDUs. In fact, the major contributor at this point is the MSM population, with wives of clients and other at-risk males and IUDs contributing a steady number of new infections over time.

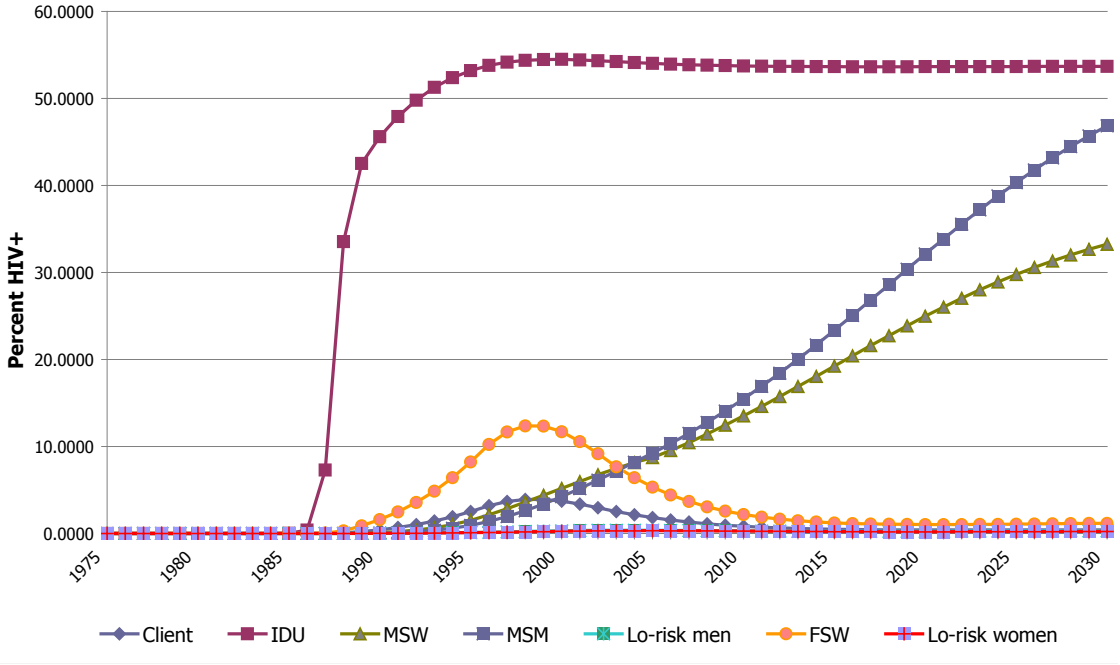


Figure 4.7E: HIV prevalence in different populations in the Scenario IV baseline

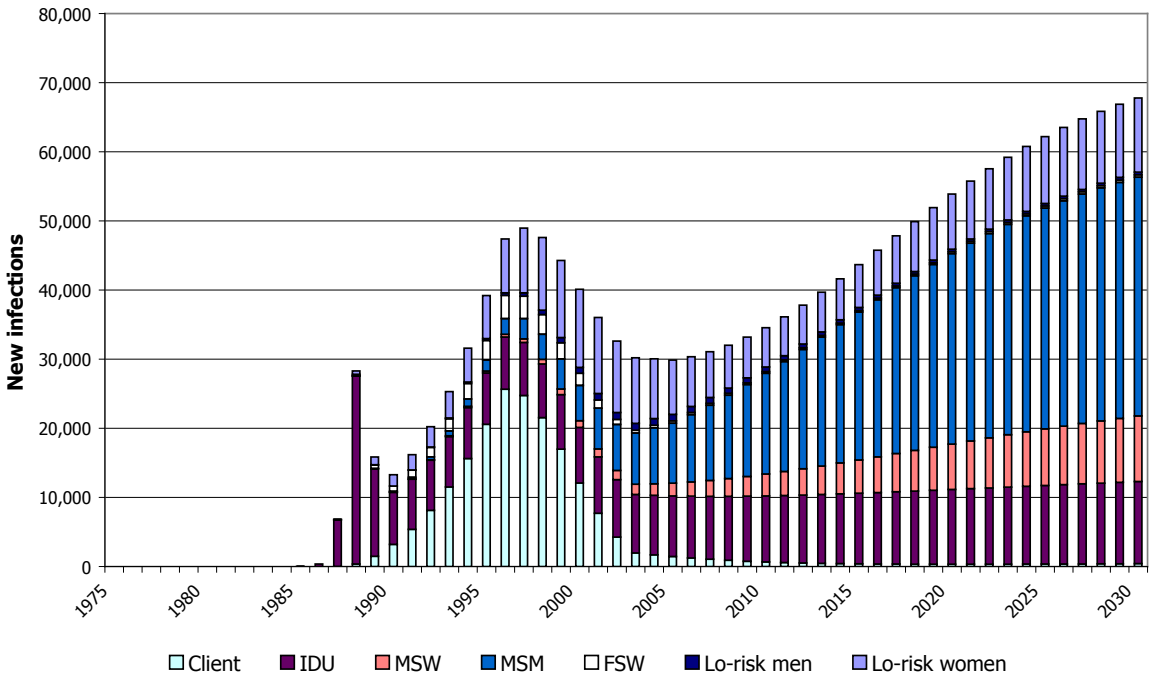


Figure 4.8E: A rising contribution of MSM explains the prevalence increase in Scenario IV.

The Scenario I baseline is really just a scenario to baseline shifted back 13 years. Thus the figures are not presented here.

Most effective packages for these four scenarios

Given the figures for contribution to new infections shown above, there is no change in the most effective packages discussed at the Beijing meeting.

Scenario I. Here the epidemic has yet to take off. As discussed in the meeting, an IDU intervention can delay the heterosexual epidemic substantially. However, it is unlikely to contain the IDU epidemic, so it is necessary to prepare for the heterosexual epidemic with the sex work package. The key components then are:

- Sex work package
- IDU package

Scenario II. In this scenario, which we called the expanding scenario in Beijing, the sex worker client contribution to new infections is by far the largest, and transmission from them to their wives is the next largest source of new infections. MSM are contributing a growing proportion rising to between 15 and 20% of infections, thus some programmes are needed for them. IUDs continue to contribute at a low level. The key components in this scenario than are:

- Sex work package
- Low-risk partner package
- MSM package
- IDU package

Scenario III. Scenario III is really just Scenario II extended out 10 years. Thus the most effective package remains the same as for Scenario II.

Scenario IV. In this scenario, which we called the post-containment scenario in Beijing, the sex work component of the epidemic has been brought under control, and this success must be sustained. However, MSM are now the major contributors to new infections, with IUDs and partners of at-risk males both contributing equally to new infections at a somewhat lower level. The most effective package consists of:

- Sustaining sex work success
- MSM package
- IDU package
- Low-risk partner package

It should be noted that the contribution of these various packages would vary according to their effectiveness. The low-risk partner package, which involves promoting condom use between husbands

and wives, is not likely to achieve more than 30% to 40% success. It would therefore probably be less effective than some of the other packages.

NOTE 4F: GUIDELINES AND STRATEGY FOR COST-SHARING

Because of the high profile of AIDS on the global agenda, many development interventions have been associated with or incorporated into HIV prevention. As a result, activities associated with reducing violence against women and increasing girls' education become the responsibility of the National AIDS Programme.

With current available funds still falling short of what is needed for a comprehensive AIDS response (as identified in the Resource Needs Model), there is a need to identify *how* governments know which interventions, to what extent, and from what source interventions should be funded. This section contains broad guidelines of how to prioritize interventions that are often included under the HIV agenda.

HIV interventions can be divided into two groups, according to their immediate impact on the epidemic and an individual's risk of becoming infected.

Direct interventions reduce immediate risk to becoming infected with HIV. They will have an immediate impact on reducing the incidence of new infections. Examples of such interventions include structural and outreach to improve condom use among sex workers, their clients, and their partners.

Indirect interventions, on the other hand, affect one's susceptibility or vulnerability of entering into risk behaviours or putting one's self at risk of becoming infected. Interventions in this category could include life-skills education to keep youth out of risky behaviours (such as entering into transactional sex and injecting drug use).

Table 4.1F below offers a side-by-side comparison of direct and indirect interventions, including examples of each type of intervention.

Table 4.1F: Table comparing main characteristics of direct and indirect interventions

Characteristic	Indirect interventions	Direct interventions
Overall	Are often related to a greater social/cultural/ environmental change	Are often primarily focused on instilling safe practices but not significant change in societal perspective/views
Impact	Observing impact is much slower process and occurs over a much longer time period	Observed impact and effectiveness are almost immediate
Effectiveness	No clear measures for effectiveness and coverage	Clear measures and standards for indicators of effectiveness and coverage
Longevity	Demonstrate a long-lasting impact (once such changes are instituted and accepted into society, it is very difficult to "undo")	Unclear whether there could be a long-lasting impact or if interventions must be continually re-instilled
Averted Infections	Difficult to attribute directly averted infection	Averts over 90% of infections in Asia
Operational Feasibility	No/few operational interventions/activities known	Clear operational standards and activities identified

Examples	Youth-targeted interventions (including life-skills and general awareness education) Poverty reduction Institutional strengthening for improving access to health care services such as antenatal services; and early detection and treatment of STIs Changing gender norms Reducing sexual taboos Changing norms of homosexuality Discussion against stigma and discrimination Mass media for general awareness Community mobilization General workplace intervention	Sex worker and client-targeted interventions (including STI management, condom social marketing, public and commercial condoms, workplace, and mass media interventions) Harm reduction for IDU MSM intervention Couples counselling VCT PMTCT Special populations Prevention for PLHAs PEP Blood safety/Safe injection Universal precautions

Indirect interventions, although important contextual factors that can affect future vulnerability to HIV, tend to address issues of greater social change. The impact of these interventions on the spread of HIV is very low and often cannot be observed in the short term. Unlike direct interventions, HIV transmission cannot be easily attributed to such broad-based indirect interventions. On the other hand, the immediate and measurable impact of direct interventions may not last, so that these activities must be conducted—or at the very least maintained—year after year in order to ensure the effectiveness and prolonged effect. Over the long-term, then, it is possible that some of these interventions could be as costly as implementation of the indirect interventions that may demonstrate a comparable, though delayed, effect.

Because they have relevance and significance *beyond* HIV, and because the implementation of such interventions often requires a complete transformation of institutions and views in society, it is suggested that indirect interventions are funded and implemented by non-AIDS agencies. For example, the Education Ministry would fund life-skills programmes; the Women's or Social Welfare Ministry should cover the cost of programmes related to changing gender norms and promoting education of women.

Direct interventions demonstrate a clear and measurable link with the reduction of HIV transmission. Such interventions cover a wide range in terms of both cost and effectiveness or impact. Some activities are relatively inexpensive, such as a prevention package for sex workers and their clients; others are very costly, such as antiretroviral treatment, safe injection initiatives, or universal precautions in medical care settings. Effectiveness of interventions may also range from those that avert a majority of new infections, to those that have a very low impact, averting less than 2% of new infections in Asia. If all these interventions are covered, governments could keep infection in Asia to virtually zero. Unfortunately, AIDS budgets are not sufficient even to fund all *direct* resources. It is necessary to prioritize within these interventions when allocating AIDS funding.

This need to prioritize means that direct interventions must be further identified according to their relative cost and impact on reducing the incidence of new HIV infections. Cost-effectiveness analysis has been utilized in many settings to give some relative priority to interventions. The matrix below suggests one method for categorizing interventions based on their cost-effectiveness:

Table 4.2F: A matrix to guide cost-sharing of AIDS-related interventions.

		Costs (per disability adjusted life years (DALY) saved)	
		Low cost	**High cost**
Effectiveness	**High number of DALYs saved**	These interventions will have a high impact on reducing new HIV infections *in the short run* at a relatively low cost. (Examples include sex worker and client interventions, harm reduction for IDU, prevention tools and outreach for MSM)	These interventions are highly effective and may avert infections or death, but they are also costly. (For example, ART)
	Low number of DALYs saved	These interventions have low or unknown (long-term) impact, but are low-cost. HIV catalytic funds possible. (Example: general awareness programmes through mass media)	These are high cost programmes with little direct impact on HIV infection or positive people, and thus should be cost-shared. (Examples include: blood safety, universal precautions, safe injection)

The total is calculated for Asia, applying the standard cost specific to the current scenarios of the country. Finally a cost-sharing formula is worked out based on the outcome of different interventions (e.g. infections averted, deaths averted, disability-adjusted life years saved.)

5
Civil Society

CHAPTER SUMMARY

Ever since the emergence of the AIDS crisis in the 1980s, a variety of civil society groups have played a critical role in shaping national and international policy, running awareness and prevention campaigns and defending the rights of people living with HIV.

In the Asian region, a quick survey of countries that have responded successfully to the AIDS epidemic demonstrates the direct correlation between such success and the presence of vibrant civil societies that are actively interested in national debate and action on AIDS.

The first section of this chapter is based on the findings of a regional stakeholder perception and priority survey carried out in mid-2007 to collect civil society perspectives on how to respond best to the AIDS pandemic in Asia.

The main themes covered by the survey included civil society engagement, HIV-related stigma and discrimination, political commitment, and accountability and transparency. Through this consultation process, almost 500 civil society respondents in Asia contributed to the development of the Commission's recommendations for the region.

The consultation also showed that civil society is calling for more engagement with governments and donors to ensure that accountability is increased at all levels of the response to HIV. Successful mechanisms, frameworks and resource allocation need to include civil society in all stages of development from inception to implementation. Unless all key stakeholders, including people living with HIV and marginalized populations, are included in decision-making, 'Universal Access' and other initiatives will not impact on HIV in Asia.

Some of the other findings include:

- Stigma and discrimination must be addressed at all levels of policy and programming;
- Commitments to HIV funding must be realistic and responsive to the needs of those affected;
- Governments must be willing to contribute to and actively involve civil society in creating accountability mechanisms effectively, improving the quality and accessibility of all HIV services and commodities;
- Information needs to be accessible and understandable to all stakeholders; and

- True recognition of government shortcomings to address HIV and practical effective solutions need to come from within country (as well as receipt of regional and international technical assistance).

The second section of this chapter looks at a case study of the highly successful mass media campaigns to raise public awareness about HIV in the 1990s in Thailand.

While the role of political commitment and the multi-agency response to the containment of the HIV epidemic in Thailand have been widely acknowledged and analyzed, the public information and education campaign remains somewhat of an enigma. This is surprising given that public awareness through a mass communication campaign is the very basis on which other individual interventionist programs are able to work more effectively.

The case study in this section focuses on:

- The key factors and activities that made the campaign a huge success;
- The extent of attribution of behavioural change to mass media programmes;
- The cost of implementing the mass media campaign; and
- The effectiveness of the mass media campaign.

5.1 CIVIL SOCIETY CONSULTATION[1] *Health & Development Networks and Frika Iskandar*

5.1.1 Background

An online Asia regional stakeholder perception and priority survey was launched on 2 July 2007 by Ms Fricka Chia Iskandar, member of the Commission on AIDS in Asia and coordinated by Health and Development Networks (HDN) in Thailand, with support from the secretariat of the Commission and UNAIDS. In addition to collecting as many views as possible, respondents also had the opportunity to nominate themselves to take part in a series of key informant interviews, to further understanding of their opinions and recommendations.

As of 29 August 2007, a total of 478 respondents from 23 Asian countries[2] had completed the online survey. The primary objective of the consultation was to collect civil society perspectives throughout the region in order to strengthen the quality of the Commission's recommendations.

This open and independent civil society online consultation in Asia was the first of its kind to inform a regional recommendation process. The main themes covered by the survey included: civil society engagement, HIV-related stigma and discrimination, political commitment, and accountability and transparency.

5.1.2 Objectives

The objectives of the consultation were to:

1. Create a regional platform for dialogue to help ensure that civil society is involved in contributing to the work of the Commission.
2. Assist the Commission in collecting broader and more in-depth input and opinions from civil society in the region, in order to help shape its major recommendations.

[1] Health & Development Networks conducted the Civil Society Consultation. The methodology and main findings from this process are summarised in the document "When asked, communities answer!" by HDN and Asia-Pacific Network of People Living with HIV/AIDS (APN+)

[2] Asian country list from the United Nations Economic and Social Commission for Asia and the Pacific

3. Help establish links between the work of the Commission, and the current (and past) regional civil society AIDS-related consultations, as well as other processes and opportunities for civil society input and mobilisation around:
   - Regional events, such as the International Conference on AIDS in Asia and the Pacific (ICAAP);
   - Regional preparations for the national UNGASS 2008 evaluation report process;
   - Assessment of progress of the development of national 'universal access road maps', including where possible, specific national HIV- and AIDS-related target-setting; and
   - Other global structures and relevant delegations to the Board of the Global Fund against AIDS, TB and Malaria (GFATM), the UNAIDS Programme Coordinating Board (PCB) and the Stop-TB Partnership Coordinating Board.

5.1.3 Methodology

In June and July 2007, Health and Development Networks prepared and conducted a rapid regional online survey using a web-based questionnaire. Invitations to complete the questionnaire were extended to people living with HIV networks; local and national NGOs, international NGOs, community-based organisations (CBOs), media and journalism groups, academic and educational institutions and private sector companies, as well as individuals not associated with an organisation. The survey announcement was distributed through the channels below, as well as forwarded to personal contacts by members of these networks.

5.1.3.1 Electronic forums

- AIDS India
- The fruitstogo listserve
- Health Gap
- International Congress on AIDS in Asia and the Pacific (ICAAP)
- Partners Thailand
- Positive Living Working Group (PLWG)
- SEA-AIDS
- Stop-TB

5.1.3.2 Networks

- AIDS Society in Asia and the Pacific (ASAP)
- Asia Pacific Council of AIDS Service Organizations (APCASO)
- Asia Pacific Network of People Living with HIV/AIDS (APN+)
- Asia Pacific Network of Sex Workers (APNSW)
- Asia Pacific Rainbow Support Center, Inc. (AP-Rainbow)
- Asian Harm Reduction Network (AHRN)
- Body Positive – New Zealand
- Coalition of Asia Pacific Regional Networks on HIV/AIDS (Seven Sisters)

- Co-ordination of Action Research on AIDS & Mobility (CARAM Asia)
- International HIV/AIDS Alliance
- International Community of Women Living with HIV/AIDS (ICW)
- International Federation of Red Cross and Red Crescent Societies (IFRC)
- International Treatment Preparedness Coalition (ITPC)
- National country-based networks
- Network of Sex Work Projects (NSWP)
- Therapeutics Research, Education and AIDS Training in Asia (TREAT Asia)
- Women's Working Group of APN+ (WAPN)

The survey questions drew upon the content of two previous regional civil society consultation processes and their outcomes:

- The *Civil Society Statement at the conclusion of the 7th ICAAP Conference*, as presented by Periasamy Kousalya (Positive Women's Network of India) on 5 July 2005; and
- *Opportunities and Obstacles to Universal Access of HIV Prevention, Treatment, Care and Support Services* – Report and recommendations of a regional universal access consultation, held in February 2006 in Thailand.

The 16 questions of the survey were designed to:

- Gauge opinions on current HIV-related priorities in the region;
- Gauge opinions of civil society (CS) stakeholders in terms of the importance and relevance of the Commission;
- Identify strategies for further CS alliance-building around HIV-related advocacy; and
- Find out how CS partners and friends would prefer to engage with the Commission and similar processes during the remainder of 2007 and beyond.

The main survey question categories included:

- HIV services and commodities;
- Legislation to address HIV-related discrimination;
- Best practice and interventions for combatting HIV-related stigma; and
- Regional and national mechanisms ensuring accountability among key stakeholder and political commitments made towards the HIV response.

Qualitative in-depth key informant interviews were conducted with various stakeholders in the Asia region prior to, during and after the 8th ICAAP in Colombo, Sri Lanka. These interviews, commissioned by UNAIDS and the ICAAP Local Organising Committee, enriched the survey findings as well as contributed to regional dialogue around current decision-making processes and mechanisms in the response to AIDS in Asia. Limited data is available from these interviews, which are currently being processed.

5.1.4 Survey findings

5.1.4.1 Respondent information

Email address

Each respondent was asked to provide an email address for follow-up and to avoid duplicative responses from the same email address. All email addresses have been kept confidential.

Where do you live?

Table 5.1: Breakup of 478 respondents from 23 countries

India	33%	China	3%
Indonesia	13%	Malaysia	3%
Thailand	8%	Myanmar	3%
Pakistan	7%	Cambodia	2%
Philippines	7%	Japan	2%
Vietnam	7%	Hong Kong	1%
Nepal	5%	Singapore	1%
Bangladesh	3%	Sri Lanka	1%
Afghanistan, Iran, Lao PDR, Mongolia, Taiwan, Turkey, Uzbekistan (each)			>1%

Gender of respondents

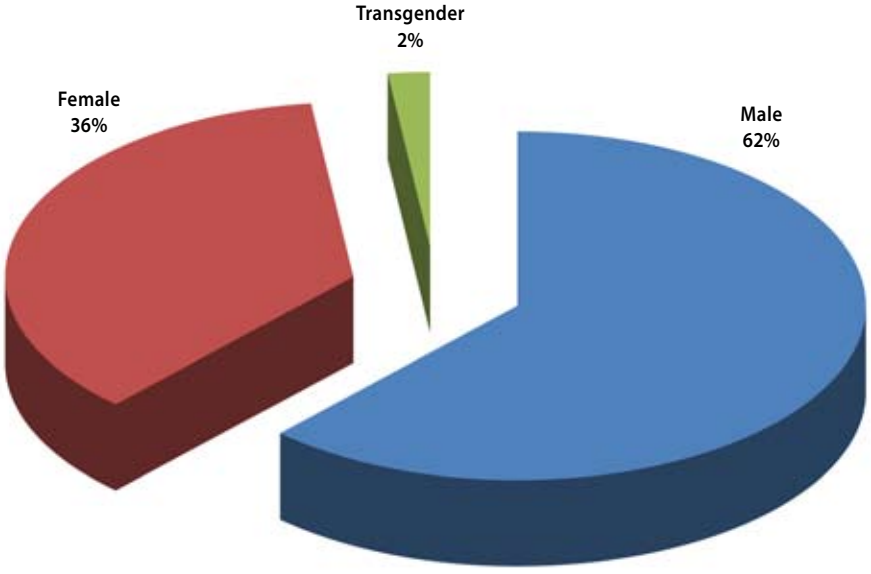


Figure 5.1: Percentage of male, female and transgender respondents

Organisation name

Respondents provided the name of their organisational affiliation, if applicable. Over 300 organisations participated in the survey.

Type of organisational affiliation

43% of the respondents indicated that their organisation was either a national, or a local NGO or CBO.

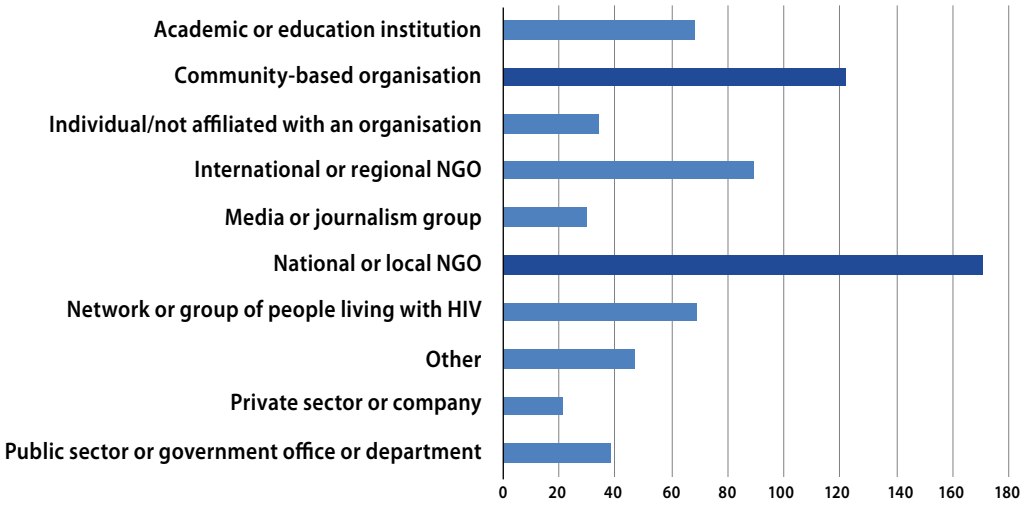


Figure 5.2: Organisational affiliation of respondents

Types of work respondents are engaged in

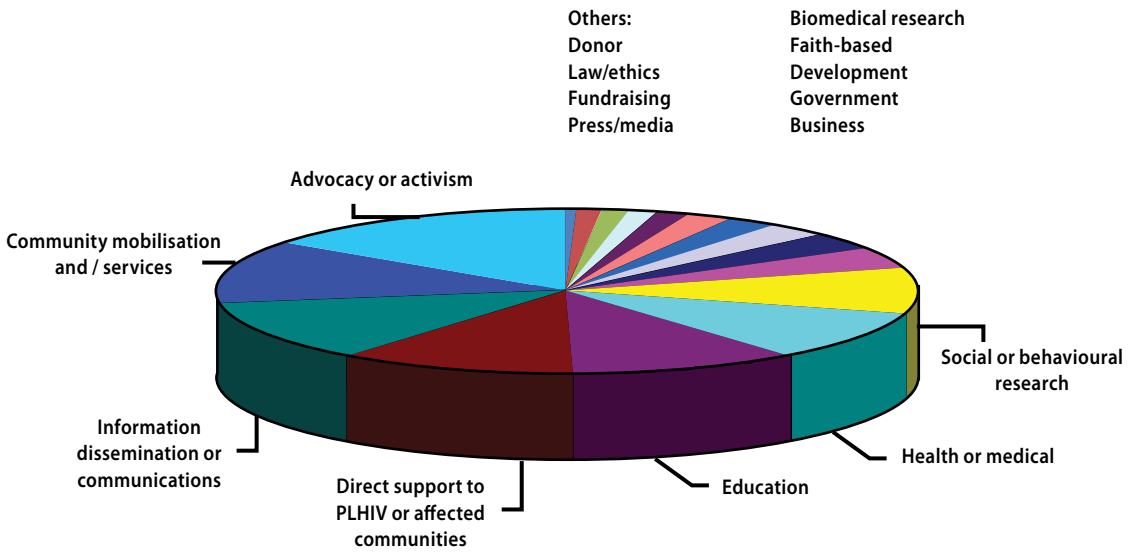


Figure 5.3: Professions of respondents

People indicated that their work included a combination of advocacy and activism (15%), community mobilisation and services (13%), information dissemination and communications (12%), direct support to people living with HIV and affected communities (11%), education (11%), health, medical and clinical (9%), social and behavioural research (8%) and others (21%). Of these, 51% work directly with people living with HIV and their communities.

5.1.4.2 Reducing stigma and discrimination related to HIV

Which of the following interventions do you recommend for reducing HIV-related stigma in your community country?

Respondents ranked the importance of each intervention: 1 being 'not important' to 4 being 'vital, a top priority'.

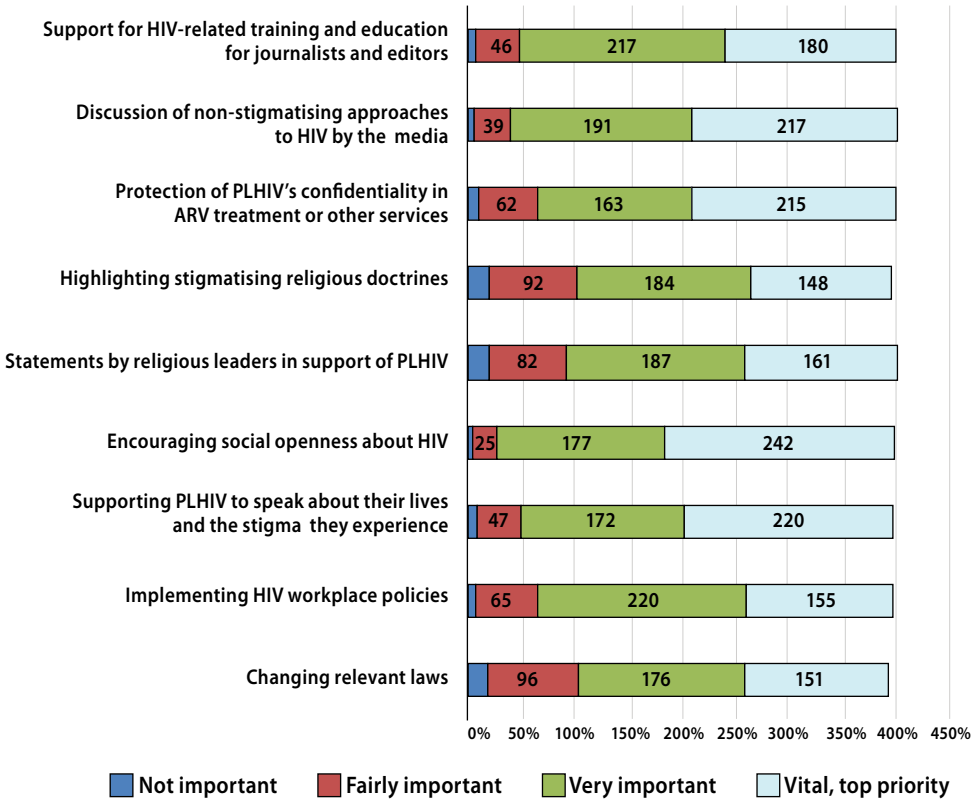


Figure 5.4: Priority interventions for reducing stigma and discrimination

The top four interventions designated as 'vital, top priority' and 'very important' for reducing HIV-related stigma were: encouraging social openness about HIV; supporting people with HIV to speak about their lives and the stigma the experience; discussion of non-stigmatising approaches to HIV by the media; and support for HIV-related training and education for journalists and editors.

Which of the following measures is potentially MOST helpful in reducing HIV-related stigma in healthcare services in your country and/or community? (please choose ONE)

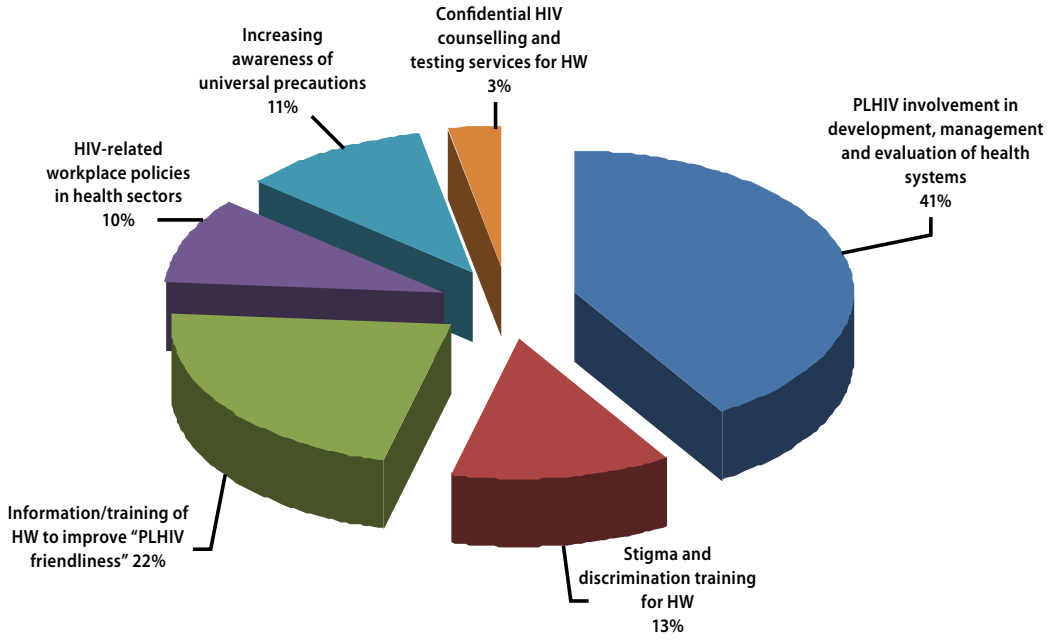


Figure 5.5: Measures required for reducing stigma and discrimination

Overwhelmingly, the involvement of people living with HIV in the development, management and evaluation of health systems (41%) was indicated as the most helpful in reducing HIV-stigma in healthcare settings.

How important are the following measures for reforming laws related to HIV?

Respondents ranked the importance of each intervention: 1 being 'not important' to 4 being 'vital, a top priority'.

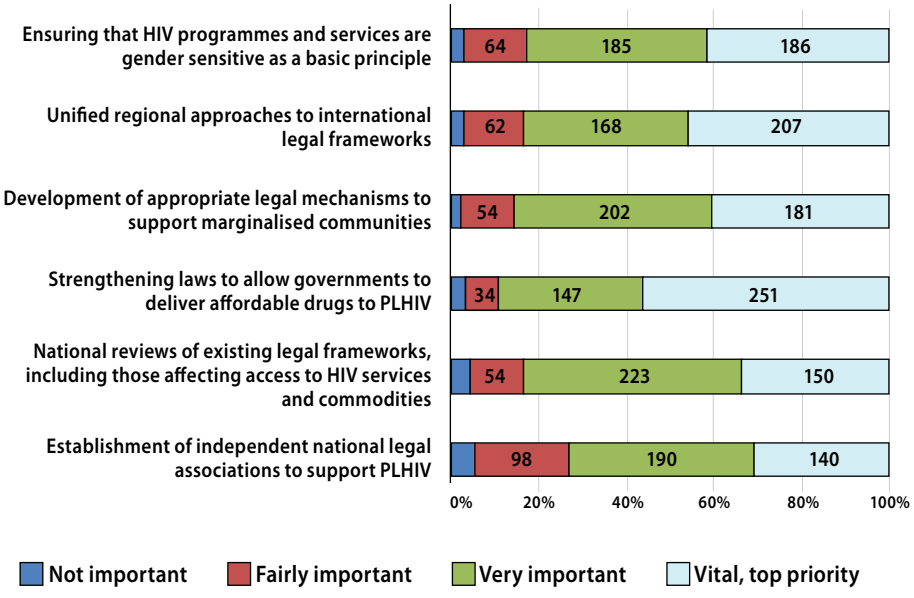


Figure 5.6: Measures for reforming laws related to HIV

Respondents felt that: development of appropriate legal mechanisms to support marginalized communities; and strengthening laws to allow governments to deliver affordable drugs to people living with HIV were the items that were 'very important' and 'vital, a top priority'.

If countries do consider legal reforms, which of the following should be addressed as the MAIN HIV-related priority? (please choose ONE)

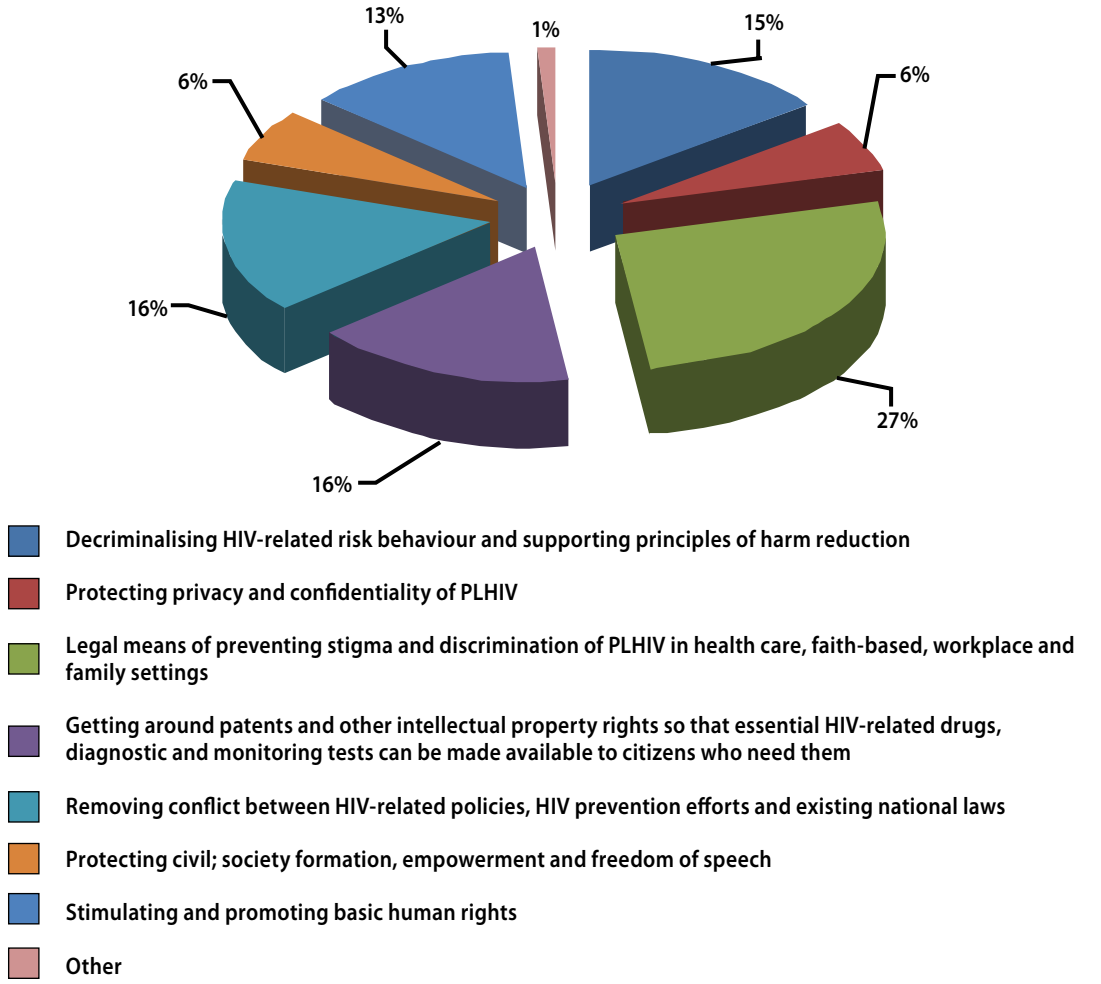


Figure 5.7: Top priority legal reform related to HIV

According to survey respondents the highest priority HIV-related legal reforms are:

- Legal means of preventing stigma and discrimination of people living with HIV in healthcare, faith-based, workplace and family settings (27%);
- Getting around patents and other intellectual property rights so that essential HIV-related drugs, diagnostic and monitoring tests can be made available to citizens who need them (16%); and
- Removing conflict between HIV-related policies, HIV-prevention efforts and existing national laws (16%).

5.1.5 Political commitment to the epidemic, accountability and the need for a regional AIDSWatch body

What are the main reasons for this lack of political commitment to tackling HIV?

Respondents ranked the importance of each intervention: 1 being 'not important' to 4 being 'vital, a top priority'.

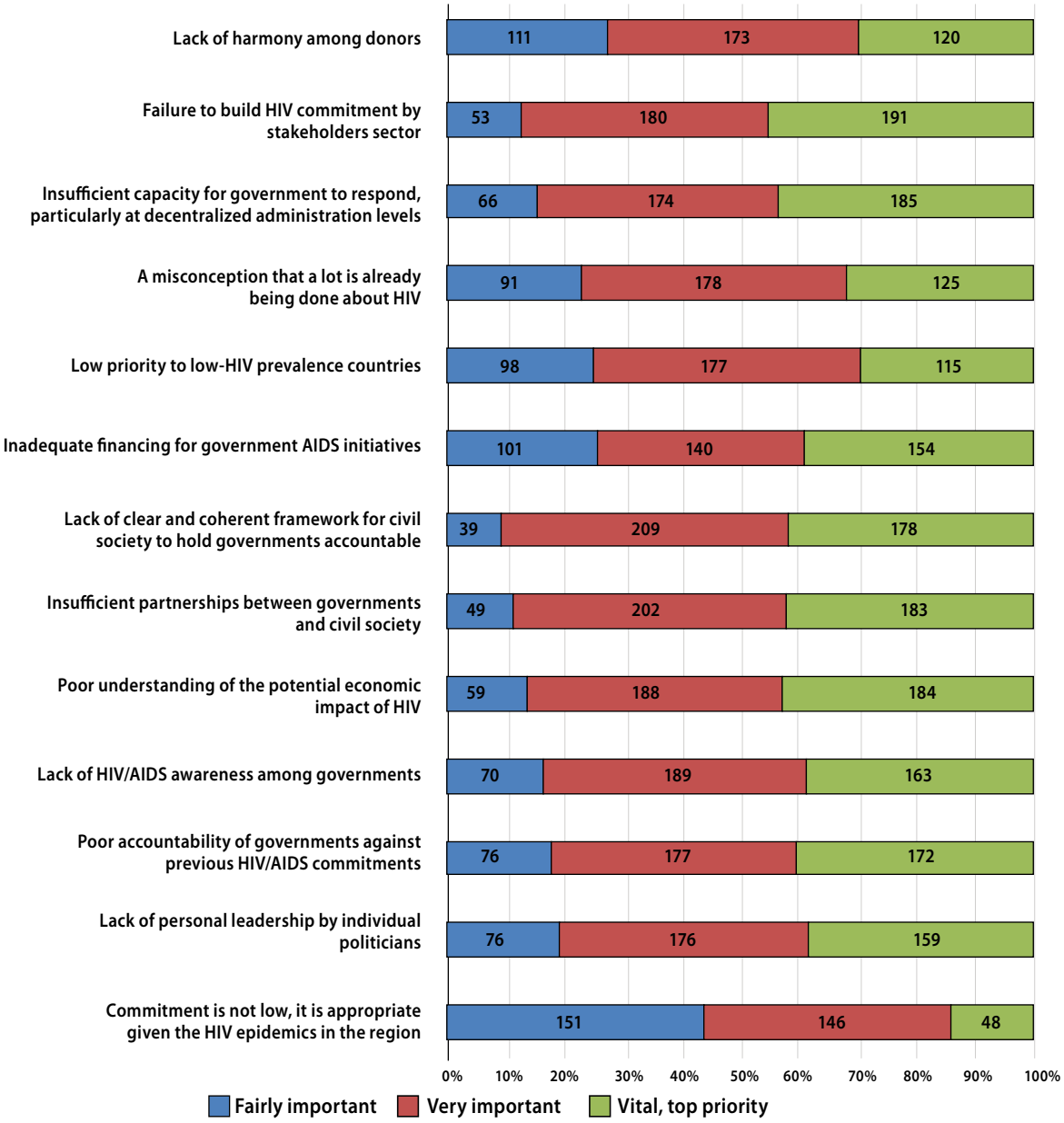


Figure 5.8: Reasons for lack of political commitment for the HIV epidemic

The 'very important' and 'vital, a top priority' responses to reasons for the lack of political commitment question were:

- Insufficient partnerships between government and civil society;
- Lack of a clear and coherent framework for civil society to hold governments accountable; and
- Inadequate financing available for government-led HIV and AIDS initiatives.

Which of the following steps would MOST help ensure greater accountability of leaders for national responses to HIV? (Please choose up to THREE)

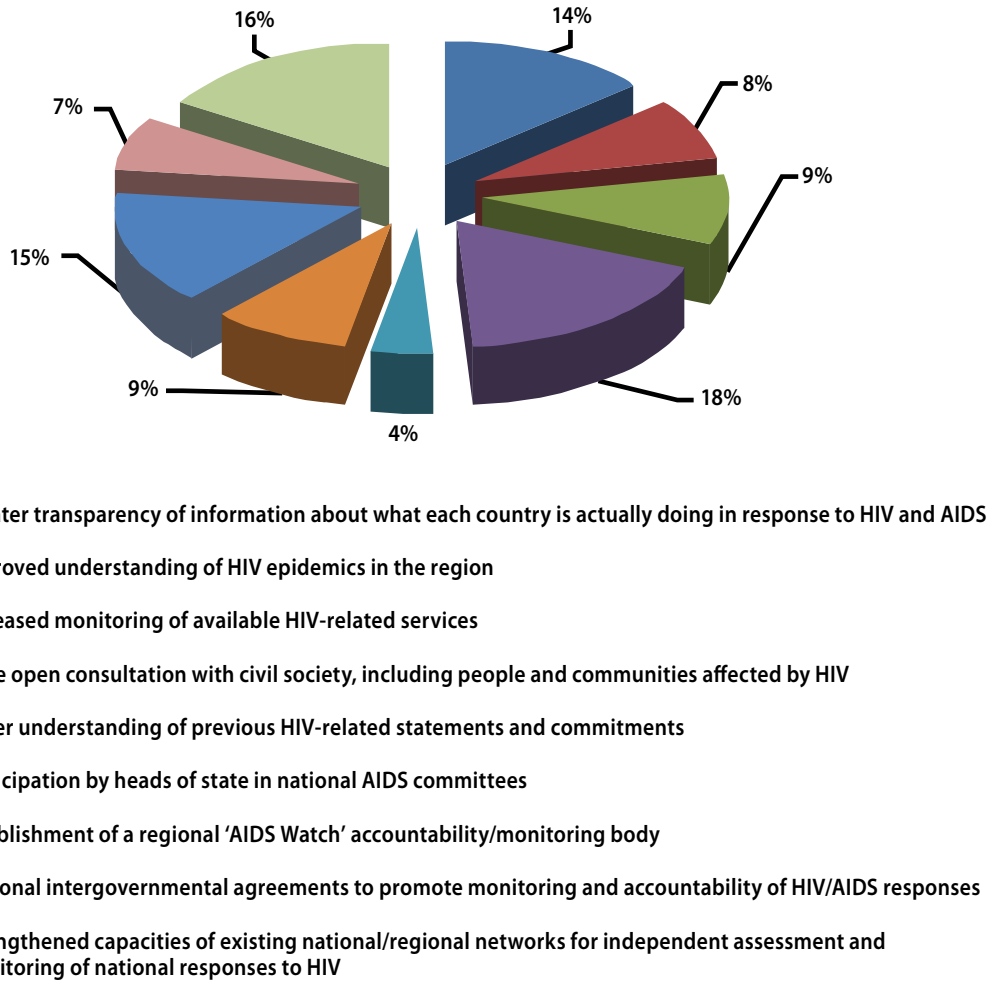


Figure 5.9: Steps that would ensure greater accountability of leaders for national responses to HIV

The three most important steps that would ensure accountability for national AIDS responses:

- More open consultation with civil society, including people and communities affected by HIV (18%);
- Strengthening the capacities of existing regional and national networks for independent assessment and monitoring of national responses to HIV (16%); and
- Establishment of a regional 'AIDSWatch' accountability and monitoring body (15%).

If a regional 'AIDSWatch' or accountability and monitoring body was established, which sector(s) should be subject to increased accountability, and who should manage the 'AIDSWatch' initiative?

A. Which sectors should be subject to increased accountability?

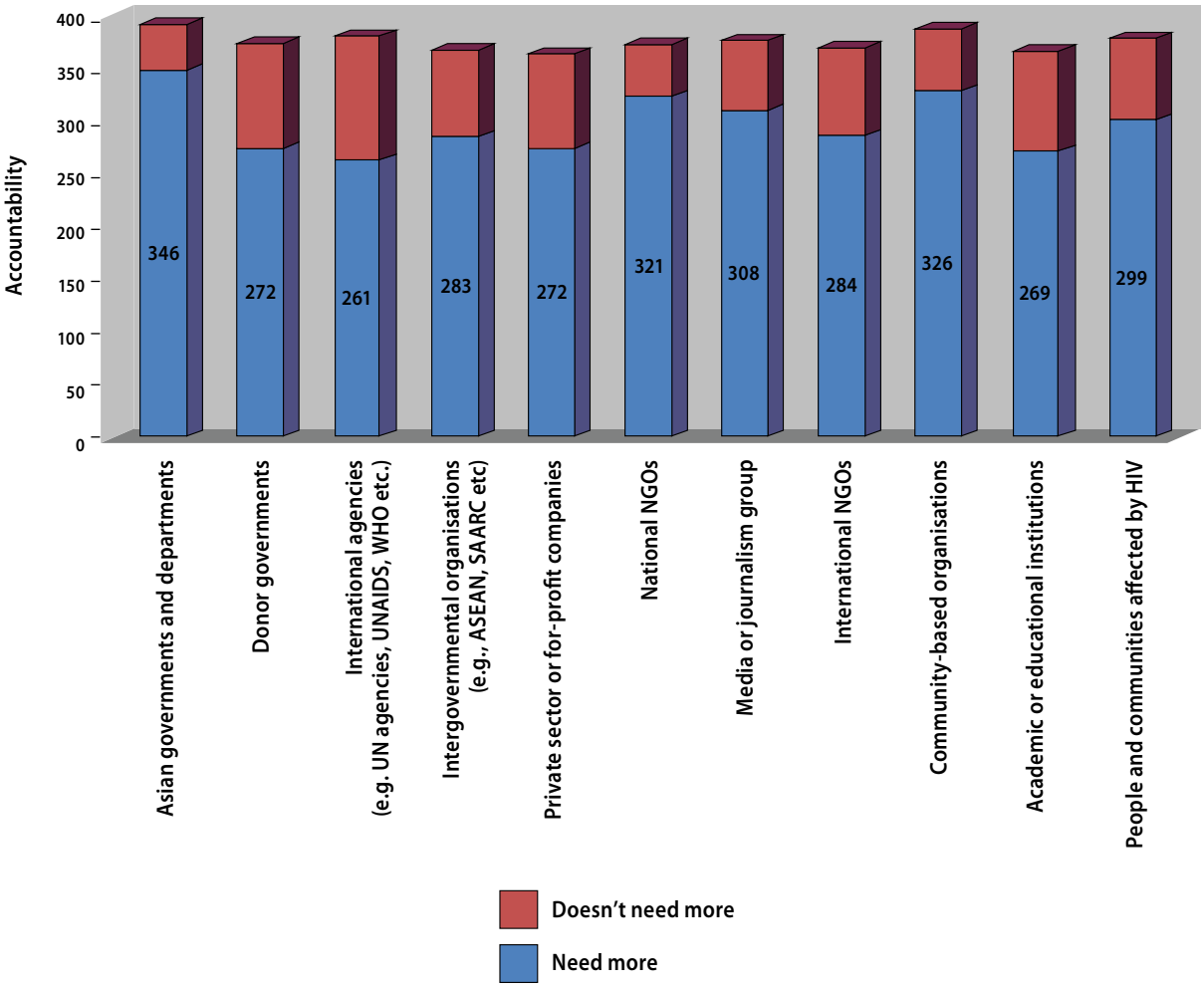


Figure 5.10: Which sector(s) should be subject to increased accountability?

Overall, respondents indicated that all sectors need increased accountability.

Recommendation: Additional data to be collected for clarification. The question itself may have been confusing and needs to be revised for future data collection on this topic.

B. Which sectors should manage the 'AIDSWatch' body?

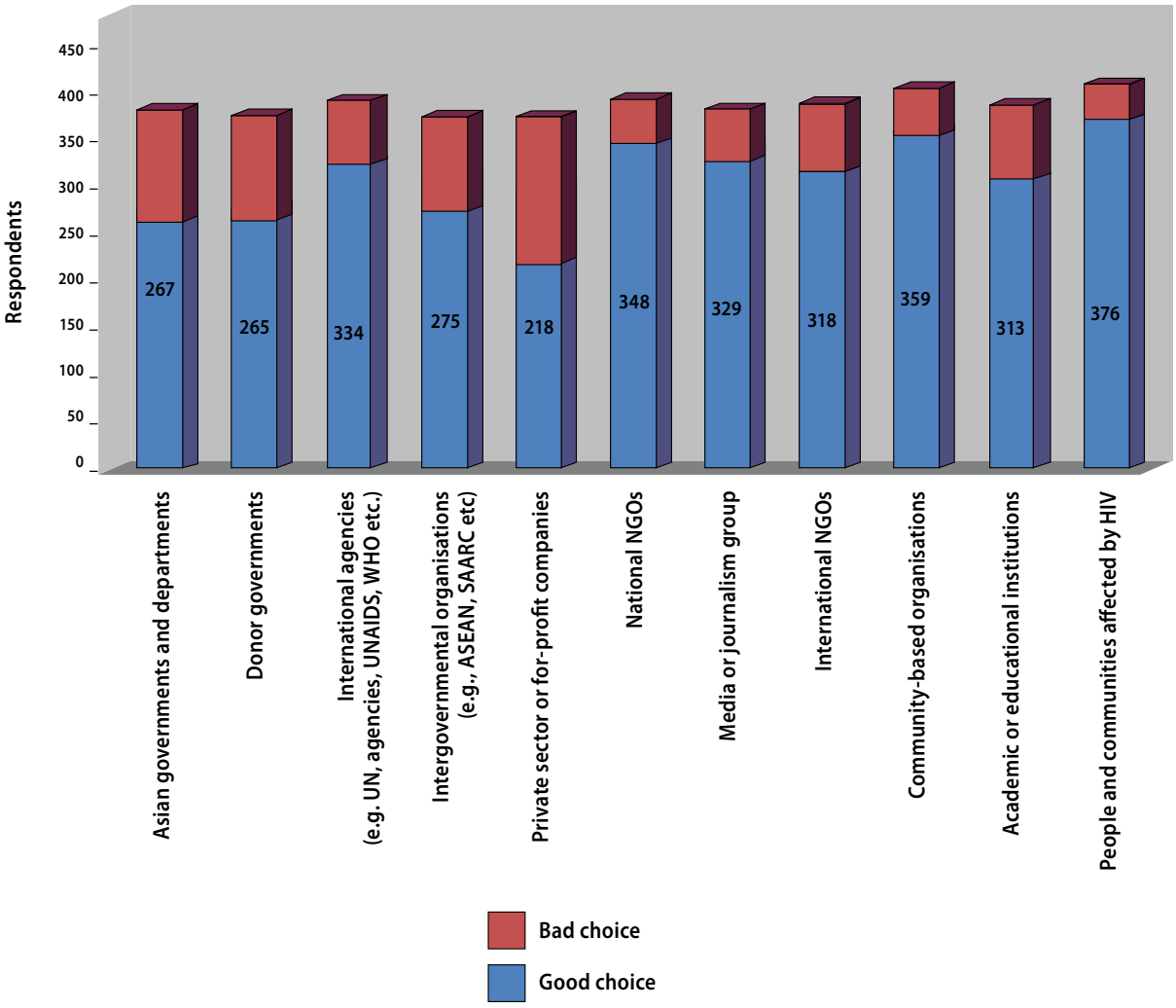


Figure 5.11: Which sectors should manage the 'AIDSWatch' body

Survey respondents indicated that a regional 'AIDSWatch' body should be managed by people and communities affected by HIV, CBOs, national NGOs and international agencies (e.g. WHO and UN agencies including UNAIDS, etc.).

How would you rank the importance of the specific contributions that civil society makes to the HIV response?

Respondents ranked the importance of each intervention: 1 being 'not important' to 4 being 'vital, a unique contribution'.

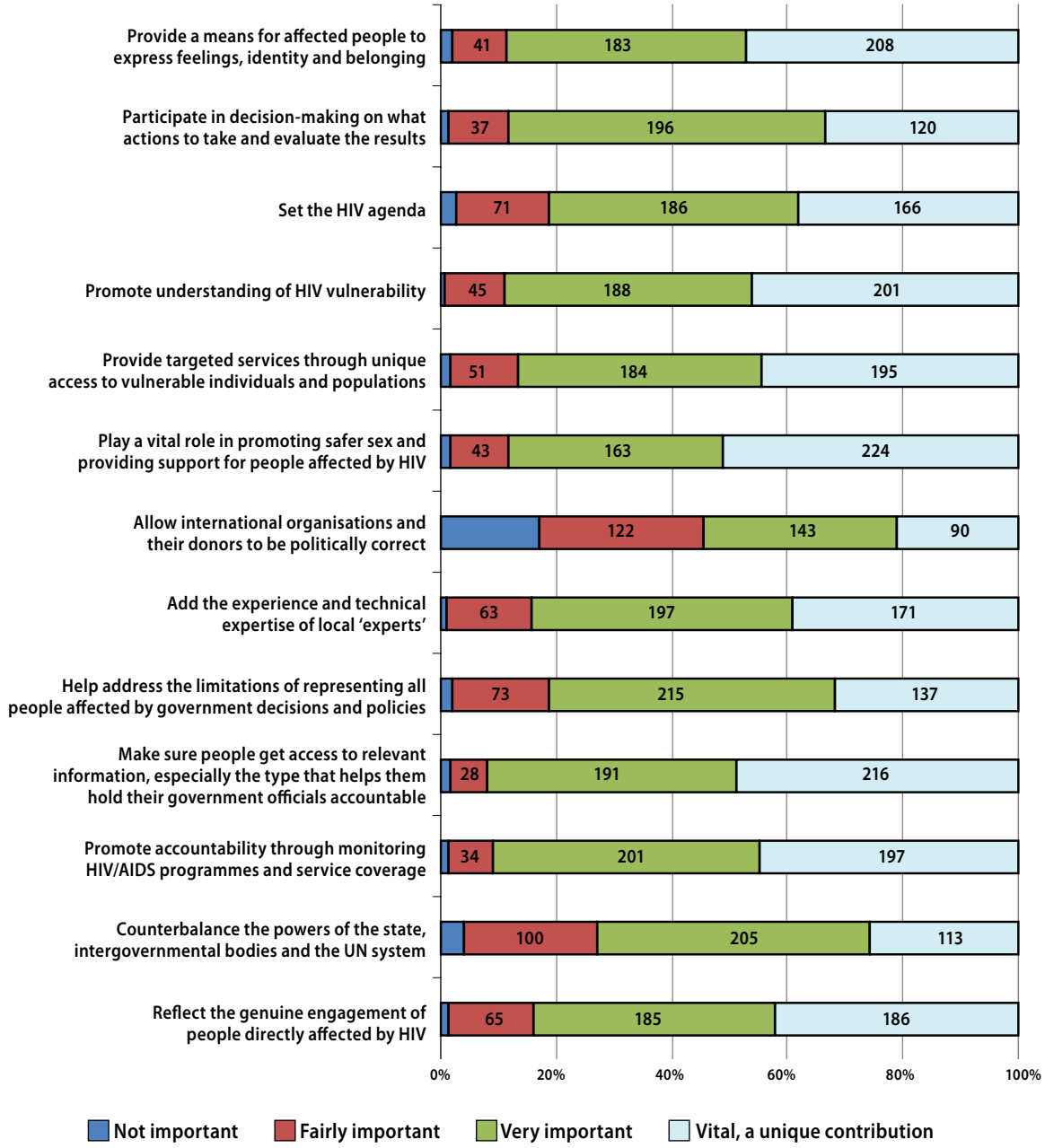


Figure 5.12: Ranking of importance of specific contributions made by civil society

The key roles of civil society in the response to HIV and AIDS in Asia are to:

- Ensure that people receive the necessary information to help them keep their governments and officials accountable for their HIV and AIDS commitments;
- Provide targetted services to the most vulnerable individuals and populations;

- Promote accountability by monitoring HIV and AIDS programmes, and service coverage; and
- Participate in AIDS policymaking and programming, and evaluate those decisions.

5.1.6 Availability of HIV and related services and commodities

What national 2010 coverage targets would you recommend as the most important for stimulating and measuring responses to HIV and TB epidemics?

Respondents ranked the importance of each intervention 1 – Not important to 4 – Vital, a top priority.

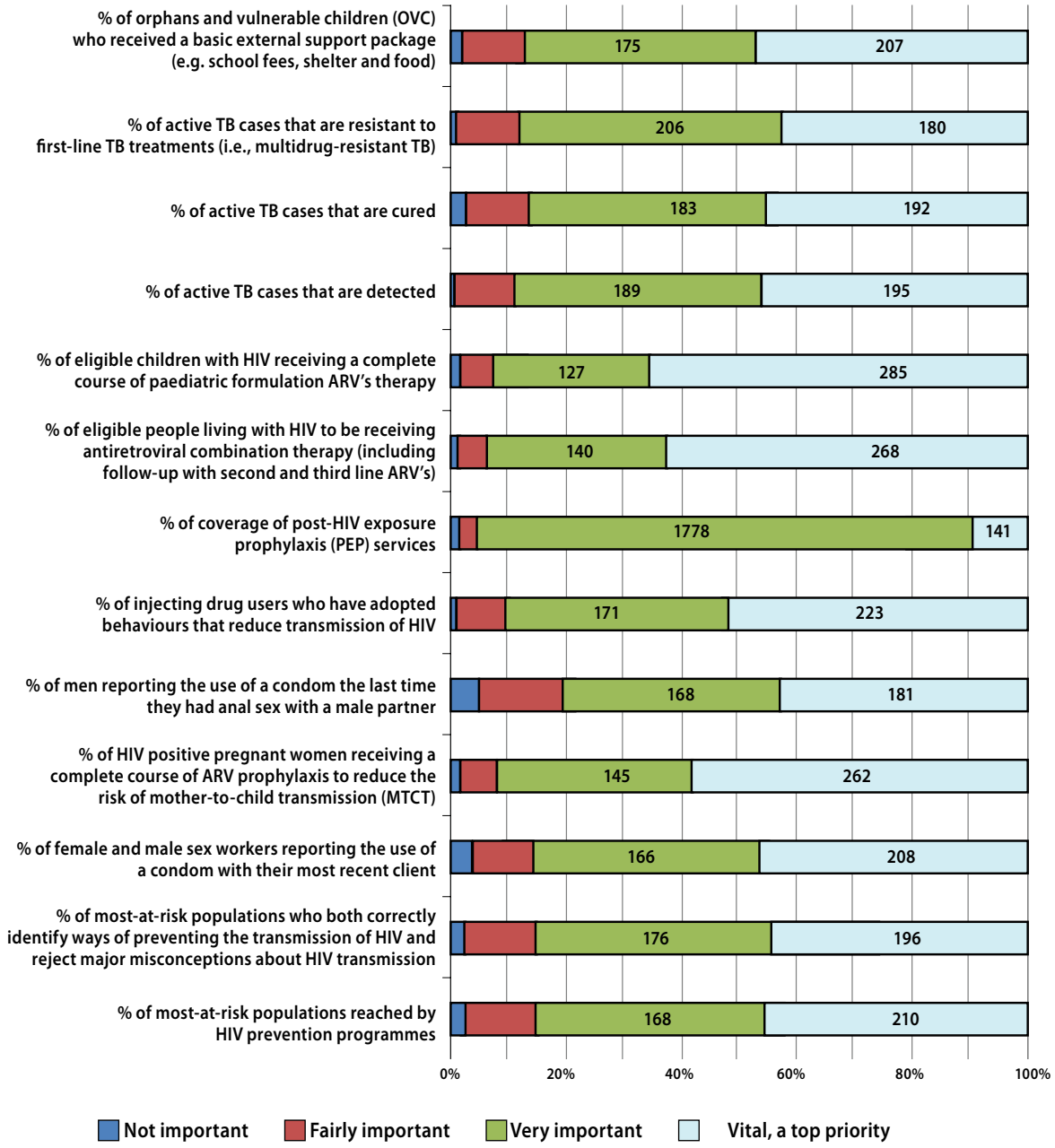


Figure 5.13: Most important national 2010 coverage targets for stimulating responses to HIV and TB epidemics

Indicators which best measure national progress towards or away from 2010 targets:

- Percentage of eligible children with HIV receiving a complete course of paediatric formulation ARV therapy;
- Percentage of eligible people living with HIV receiving antiretroviral combination therapy (including follow-up with second- and third-line ARVs);
- Percentage of injecting drug users who have adopted behaviours that reduce transmission of HIV; and
- Percentage of positive pregnant women receiving a complete course of ARV prophylaxis to reduce the risk of mother-to-child transmission.

The Commission on AIDS in Asia will recommend a set of measures designed to mobilise leaders to adequately respond to the epidemic in the region. What measures would you specifically request the Commission to consider in preparing its recommendations? Why?

Question 16 asked respondents to submit their own ideas and opinions about specific measures that they would request the Commission to consider when preparing its recommendations. Of the 478 respondents, 315 (68%), contributed their unique views about the topics covered in the survey, including other priorities and perspectives for the HIV response in Asia.

Recommendation: These responses provide more in-depth information about civil society's immediate response to the survey. Quantitative analysis adds rich data to the current survey findings.

In-depth follow-up interviews will be used to complement the online survey, and to explore respondents' views in more detail. Please indicate if you are willing to be contacted by email to possibly arrange an in-depth interview with you.

Of the 479 respondents, 385 (81%) agreed to further interviews to expand upon the survey results. These in-depth interviews asked key stakeholders in the region more in-depth questions to further explore the findings from the online consultation. Approximately 100 interviews were conducted prior to, during and post-ICAAP.

5.1.7 Quotes from respondent interviews

5.1.7.1 Stigma and discrimination

- *'I think the journalists or communicators need a lot of training – how to review stigma and discrimination. For example, even journalists in Vietnam sometimes write articles, but they still have words and phrases not very sensitive to PLHIV and make people feel like a kind of social evil.'*
- *'Stigma in healthcare system is one of the most vital concerns in my country. From my experience, just a year ago, I went to see a doctor, and I asked him for ARV treatment. He asked me "Are you a drug user? Were you a drug user?" I said I was" and he said. "ARV is not for drug users." It's a kind of stigma. This needs to change because in the healthcare systems, PLHIV need to work together to deal with prevention, care and treatment programmes.'*
- *'I don't think social openness about HIV has demonstrated enough results. It is not enough. I am not really sure to be honest that it is only social openness if you want to deal with HIV-related stigma, because HIV-related stigma is already there in people's minds, from generation to generation, so we need to do more than just social openness. We cannot really deal with HIV-related stigma with something concrete. To deal with discrimination, we can do something*

concrete, for example, try to make it legalized, and people who discriminate or do violations of human rights, we can try to do something about it. I think that social openness about HIV has demonstrated results a little bit, but it is not enough. People need to be more in touch with PLHIV so that they can have more empathy.'

- *'When I spoke at UNGASS [2006] about stigma and discrimination in the region, you know what happened when I got back to my country? My government complained to me, they said, "You are very young, you should not say that. You should not say that you did not see any achievement or any effort from the government. You did not see that." They said that I was selling my head to the foreigner. It's my life, sometimes they try to control, otherwise they do not open their ears, open their eyes to see and listen to what is the concern from the civil society.'*

5.1.7.2 Legal reforms

- *'Legal reforms are part of enabling environment. If there is no legal support then often things go wrong. Public health is allowing needle exchange programmes but police is just saying that it is illegal and people [are] being arrested. There needs to be a definite underpinning [of] legal reforming and without it things are not going to change; we are not going to scale up the way we really need to for universal access.'*

- *'For marginalised communities, it is now a well-established fact that unless you have a supportive, forward-looking rights-based approach to HIV/AIDS work, it does not work. By rights-based, I mean that a legal regimen where people who are most vulnerable and most at risk can feel safe and feel that their rights are protected, can go ahead and use those protections to access those services that are necessary for HIV prevention. It is not only [about] empowering yourself to protect yourself from HIV, but also [about] accessing information itself [that] becomes a casualty if proper law and systems are not in place.*

- *'In South Asia, in most countries, there is an anti-sodomy law, and there is an abetment law in the penal code. In other words if you are talking about safe anal sex for men who have sex with men, you are actually committing a crime because you are encouraging something which is supposedly a criminal offence. In that structure, [the] health ministry in most of the countries is saying that you go ahead and work on HIV prevention with MSM communities, at the same time the interior or home ministry which controls the police doesn't agree, and continues to target people who are intervening and working for HIV prevention among MSM. There are raids, they are arrested, harassed and at times sexually abused too. How many will feel safe to walk into a MSM support group or drop-in centre to access these services in such an environment?'*

- *'Laws are not adequate in terms of protecting because we need to appreciate the fact that if we have to battle this disease. It is only through empowerment, empowerment through knowledge, empowerment through being able to negotiate safe practices; and these safe practices can only be through inculcation of education, information, that there are laws to protect. If you have laws that don't protect the rights of people who are affected or infected, then AIDS will remain a low-concentrated epidemic.'*

- *'Since ultimately we are interested in lowering the drug prices, so why can't we have a composite trade agreement for supply of drugs for the entire region? The drug companies contracted through this mechanism should be under obligation to set up some sort of facility for manufacturing in respective countries with restriction of investment shares, so you pass technology to that country. So the advantages are: economies of scale, as well as transfer of technology which is all in compliance with TRIPS and it defeats the machination of any country to impose FTAs [free trade agreements] of its own.'*

- *'This shouldn't come from the drug company but should be a programme initiated by the government so that it is in public interest.'*

5.1.7.3 Civil society engagement

- *'In some countries, it may simply be lack of financing where there are partnerships and a clear framework, in other countries it is not the financing, it is just simply an absence of any type of partnership between the civil society and the government. And yet other places where there might be good civil society engagement with lots of other issues, there is no clear framework with the government on how to go about doing HIV-related work in partnership with civil society.'*
- *'What is the landscape against which HIV needs to be tackled? The government is not the sole arbiter of what that landscape looks like. Civil society makes up a large component of where that landscape is, and therefore not to have any planning in partnership with civil society by the government really leads to limited successes. That's one in the planning area.'*
- *'Implementation partners, especially civil society partners, have their own style of functioning. While they are accountable and there should be accountability enforced, accountability shouldn't be taken in exchange of where it is controlled. Control leads to a limitation of the ability of civil society partners to deliver effective programming. In implementation, especially when money comes from the government, there should be enough trust between the government and civil society to know that the outcomes are going to be tackled with the methods, which the civil society knows best, in the context of where the people are living. It cannot be a top-down thing, where somebody in an air-conditioned office in the national capital decides this is the programme that needs to be done because the donors said so. The need felt on the ground will be completely different. And civil society groups that are delivering in care and support or treatment are very alive to that. There should be greater empathy; greater understandings of what those realities are like. There are things imperative to the money attached in terms of accounting, in terms of accountability, in terms of reporting; they cannot be escaped, they have to be addressed. So without making it worse, you have to have greater partnership and implementation, that's all.'*
- *'Who's accountable for what? If the government is moving up money, they should be accountable for moving up transparency. They need to be accountable in making sure that there is enough safeguard in-between while the money moves through the system. On the part of the implementers, civil society implementers, they need to make sure that their noses are clean when they are handling money. But also, it is just not the implementation, the accountability is a function of, it is also an outside function, where civil society partners who are not implementers can look at the implementers on one hand and also the funding mechanism: that is, the government and say, "this is not right". And the output we are getting, the bang we are getting for our buck, is not quite right. There should be significantly be more output for the money being spent. And that's the function that is probably the least played currently by civil society in holding the government and the civil society for it's performance accountable.'*
- *'We have the beginnings in the country coordinating mechanisms [CCM] to which most of the countries are now subscribing to as far as possible to the global fund framework, where civil society is sitting as an equal partner, or at least it is supposed to be sitting as an equal partner, around the table with the government. By being the full partner around that table, it is able to participate in a review of how the money from the global fund – especially in this context – is being applied. By being able to raise its objections and raise its concerns on how the money is being spent, civil society can play an effective role in shaping how the national response to HIV*

and AIDS, TB or malaria might be. That's the beginning of the trend that needs to be expanded. It cannot be in the context of just the Global Fund money. What works for the Global Fund money or CCM money can be made to work for other monies also, whether it is coming from national governments or from international sources. The concerns are the same, the activity on the ground is the same because the population is the same, why cannot the same mechanism been applied? There is a framework of accountability and participation between the civil society and the government.'

- *'There is lack of trust on part of the government of civil society's motives and capabilities. Motives in doing what they are doing and capabilities in terms of delivering. Civil society on its part, double-cross the government, particularly they are suspicious of their tendency to control and to kind of regulate the speech, which comes from the civil society. Civil society in government minds stands there to throw stones but that's not how they always will be. Civil society can be a very constructive partner; nobody understands but sometimes the points they make are very valid ones. If you can get that dialogue going, the dialogue one had hoped that CCM will begin fostering but unfortunately has not. CCMs have got a tendency to go programmatically: "Let's finish this and move on, we have a project to complete, we have got this money to move." It has failed to go beyond that mode to being a platform for dialogue, but I had hoped that would be it! If that cannot be, then we need to find those spaces where governments and civil society can actually have dialogue which enhances confidence on both sides about each other's motives and competencies.'*

5.1.7.4 Monitoring of the AIDS response

- *'What about the first one – intergovernmental organisations – what is their role, because they have so much of other things to do? For example ASEAN, they have other things to concern [them] rather than HIV. It's just a small part in their big visions so sometimes it's hard for them to pay attention, giving the support or financial or whatever efforts.'*
- *'They don't think people living with HIV have enough capacity and have enough skills in monitoring and evaluation as well, and implementing programmes and whatsoever. The other thing is, sometimes in this kind of governance, they still have a kind of stigma and discrimination towards people living with HIV. That's why they don't want to include people living with HIV. They don't want to hear from people living with HIV.'*
- *'There is not enough commitment, and not enough follow-up; not enough pushing from the government and even if they set up the target, the budget is not thought to achieve those targets.'*
- *'Open consultation is important because civil society gets a chance to talk, [about] what they need, what they feel, what they want to be included in the political agenda for HIV. But something more than consultation is needed to make sure what civil society feels [like it] gets included in the agenda.'*

On the main challenges facing existing networks to do independent assessment and monitoring:

- *'By being independent and how to survive without being dependent by [being] neutral, objective, not taking sides to make sure that this body is able to watch accountability of other departments, or other organisations, so this body needs to be accountable to themselves. I think that is a challenge.'*
- *'I don't know how effective involvement regional bodies of government [are], say for example, SAARC.'*

- *'That's why you need to have a common platform, you need to come together, you need to bring in more accountability, more transparency. Everybody sits together, that much of time, that much of commitment, or motivation, everybody has to have.'*
- *'Most of the civil society in the region, their internal capacity is very low especially talking about language barriers and issues. Sometimes they don't understand what is happening at the top, and also the government sometimes isn't aware of what is happening on the ground. And to encourage the meaningful involvement of the civil society, they need to build their capacity before inviting them, allowing them to get involved.'*
- *'Maybe those people didn't understand the role of people living with HIV in the fight against AIDS. Maybe they did not see our value. I think so far I feel that those people regard us as victims. They never see our value, they never see us as part of the key persons to contribute to the fight against HIV.'*
- *'They have to listen to civil society about what is the need and the role where civil society can contribute. They have to open the floor to discussion to civil society and the national networks of people living with HIV. At the same time, the national networks have to improve their organisational development framework.'*
- *'It's not only being open in terms of consultation; it should be often. Open and frequent consultation of civil society, including the people in the very affected communities; not only with HIV, but with TB as well.'*
- *AIDSWatch at the regional level will be helpful to look at accountability and monitoring what is really happening with the HIV epidemic and the programmes within the region. But we have to consider who is going to house the 'AIDSWatch'. Who the persons will be and organisations will be.'*
- *'International NGOs have their own agendas. They should not be part of it. I would rather have the regional networks as part of the 'AIDSWatch'.'*
- *'I don't see any reason why people living with HIV shouldn't be part of 'AIDSWatch'. Maybe they feel that people living with HIV are so vocal and so activist about specific issues and concerns. There may be some perception that people living with HIV are so individualistic they are just looking at their own needs without trying to strike a balance between their needs of the positive community and the other needs of the health programmes."*

5.1.8 Conclusion

The data collected support the following key messages for inclusion in the Commission's recommendations.

5.1.8.1 Civil society engagement

- The AIDS response in Asia needs to integrate civil society involvement at all levels of decision-making. This includes the 'small voices' of marginalized individuals and groups, and those dependently affected by AIDS policies and programmes.
- Governments, planning bodies and other decision-making entities must commit to providing and creating a safe space for civil society to dialogue around national and regional priorities, and provide input.

- Civil society is a multi-sector group that represents diverse experiences and knowledge. Civil society is part of the solution, not a special interest group that has to be placated.
- All people working on HIV are responsible for the wellbeing of those dependently affected by AIDS policies and programmes.
- Validity of voice needs to be considered when eliciting civil society representation and input. A louder voice does not necessarily equate to validity or genuine representation.

5.1.8.2 HIV-related stigma and discrimination

- Stigma and discrimination must be addressed on all levels of policy and programmes.
- The separation of social and behavioural determinants of HIV risk and vulnerability increases HIV-related stigma.
- A human rights approach needs to be adopted across all responses to HIV, focusing on the rights and protection of those affected.

5.1.8.3 Political commitment

- Commitments to HIV funding must be realistic and responsive to the needs of those affected.
- Multi-sectoral collaboration and commitment within governments is necessary for an effective response. Policy and funding must be informed by various sectors and disciplines, not just epidemiology.
- Governments must be willing to contribute to and actively involve civil society in creating accountability mechanisms; effectively, improving the quality and accessibility of all HIV services and commodities.

5.1.8.4 Accountability and transparency

- Information needs to be accessible and understandable to all stakeholders.
- HIV policies and programmes must be monitored by all stakeholders to ensure accountability and transparency.
- There needs to be mechanisms by which all stakeholders can provide comment and review national and regional policymaking processes.
- True recognition of government shortcomings to address HIV and practical effective solutions need to come from within the country, as well as from regional and international technical assistance.

5.2 CASE STUDY OF THE MASS MEDIA CAMPAIGN ON HIV IN THAILAND[3]

5.2.1 Purpose

Taking into account the lack of knowledge in this specific area, this study focused on the following issues:

- The key factors and activities that made the campaign a huge success;
- The extent of attribution of behavioural change to mass media programmes;
- The cost of implementing the mass media campaign; and
- The effectiveness of the mass media campaign.

The study was conducted in two parts. The first part provides a description of the activities that were regarded as the key variables to the successful halt of HIV in Thailand: mass media exposure, workplace interventions, literacy and lastly public education. The second part then empirically examines the relationship between the mass media campaigns and the health behaviours resulting from these campaigns.

5.2.2 Description of key activities

The 1990s media campaign: The AIDS pandemic was first noticed in Thailand in 1984 during the six-year rule of General Prem Tinsulanonda. Despite the early warnings given by NGOs such as the Population and Community Development Association, the initial 'official' response of the Thai government to the emergence of the first AIDS cases was silence due to the fear of public panic and a decline in tourism[4].

News of AIDS among the Thai population was particularly unwelcome in 1987 during 'Visit Thailand Year', a multimillion-dollar campaign to boost international tourism. In addition, most of the AIDS cases reported to the public during 1980s were of Thais who had become positive abroad, allowing the government to dismiss AIDS as a 'foreign' problem. AIDS reported among MSM, sex workers and injecting drug users reinforced the belief that the majority of Thai people should not be concerned with the disease. Against the backdrop of this denial, the PDA, under the leadership of Mr Virivaidya, convinced the then army general to air HIV messages on their four radio and two television stations.

The subsequent change in government in 1991 (under Anand Panyarachun) led to expansion of the mass media programme. During the early 1990s, the government realized that successful prevention of HIV requires a public information and education system. In order to relay the necessary information, HIV and AIDS messages were aired every hour on the country's radio and television stations, and publicised in newspapers and magazines.

[3] Based on a paper *'HIV prevention mass media advertisements and impact on sexual behavior- A study of the 1990s mass media campaign in Thailand'* by Madhurima Sarkar for the Commission on AIDS in Asia

[4] Baltimore Sun, (2002*), 'Fighting AIDS in Asia - In Thailand, the Armed Forces Help Beat Back an Epidemic'*, Page 2; as quoted in Patchanee Malikhao (2005), *HIV/AIDS prevention campaigns from a Thai Buddhist perspective,* Media Development, Vol. 52; Part 2, pages 57-62.

The HIV mass media campaign was initiated by the Population and Community Development Association in 1989, in collaboration with the Thai military, to provide general knowledge about HIV and AIDS to the Thai population, and advocacy for key populations at higher risk facing discrimination due to HIV. The campaign messages were aired on the country's over 500 radio and seven television stations, as well as publicized in newspapers and magazines. General knowledge about AIDS, as well as prevention methods, was provided to the public through four advertisements focusing on previously aired topics. There were three 15-second television advertisements and one 15-second radio advertisement that were aired every hour.

The first television advertisement focuses on sex workers; it emphasises that if a sex worker gets HIV, she or he can be focused on revenge and can pass the virus to a client. Since the intentions of the sex worker are not known, the client must use a condom for protection. The second advertisement focuses on the 'bad guys', or men who did not use condoms and who are now positive. This advertisement emphasizes the social taboo of AIDS and asks the audience to have safe sex in order to avoid a negative image.

The last of the television advertisements focuses on housewives, advising them of the benefits of using condoms since they may not aware of their husbands' sexual behaviours. It also offers tips for women to try and persuade their partners to use condoms. The award-winning radio advertisement presents the monk's chant for the dead (a recognized chant in Thailand) with a voiceover declaring a state of emergency due to AIDS; this provided a ritualistic and religious background recognised by McGuire in her argument that media messages should pay particular attention to 'rituals, symbols and other vehicles' for changing images and for 'shared religious experiences and a sense of community'[5].

In addition to the television advertisements, radio and television broadcasters were also trained to provide information on HIV. At the height of the mass media implementation, the private and government-owned channels were given an incentive whereby a 15-second HIV message could garner a television programme or series 20 minutes more of television time. Prominent members of the Population and Community Development Association, such as Mr Mechai and Dr Praween, were invited onto a number of talk shows as well as other programmes to talk about HIV and HIV discrimination. Later on in the media campaign, HIV advertisements featured film stars as well as other celebrities.

5.2.3 Workplace interventions

The Thai Business Coalition on AIDS was launched in 1993 in response to a study conducted in and around Bangkok in 1992 which indicated that companies were not only aware of the AIDS problem but that 85% of the companies were extremely concerned about the disease. Its objectives were to:

- Mobilise monetary and skills resources from the private sector for HIV prevention;
- Promote the adoption of coherent, non-discriminatory workplace policies; and
- Implement workplace education programmes.

[5] McGuire, M. 2002. Religion: The Social Context. Belmont, CA: Wadsworth Thomson Learning, p 124

The premise of the Thai Business Coalition on AIDS was to provide accurate information about AIDS to businesses in keeping with their 'bottom line'. The Thai Business Coalition on AIDS distributed *AIDS in the Workplace* manuals and provided workplace training seminars. It also provided a forum for managers to share experience and results about how to effectively manage HIV and AIDS in the workplace. The Thai Business Coalition on AIDS also developed a handbook, also called *AIDS in the Workplace*, which served as a guideline of important issues concerning HIV and AIDS policies to be used by businesses and NGOs. The handbook includes the national guideline for HIV testing, as well as case studies that have proven effective in convincing companies to adopt an HIV and AIDS in the Workplace programme.

The Thai Business Coalition on AIDS' strategies for intervention included:

- Use of non-confrontational and non-threatening approaches.
- Use of a compassionate and understanding tone, with human rights discussed as an important secondary issue.
- Use of persuasive case studies illustrating the importance of developing and instituting an HIV and AIDS workplace policy.
    - Use of a top-down approach, arranging initial meetings with high-level corporate staff.
- Not highlighting existing general laws unless they are inherently useful and conducive to business.

5.2.4 Public education

A number of other public education projects took place at the time that the mass media campaign was put into place. While the mass media provided awareness of HIV to the public, these public education programmes were launched in order to change behaviours among the Thai population.

One of the most prominent programmes (one which is still upheld as the pinnacle of progressive response to the AIDS epidemic today) is the 100% Condom Use Programme; an aggressive safe sex campaign targetted at sex workers and their clients, where owners of sex establishments are liable to incur penalties if they allow clients to have sex without a condom. Instead of enforcing prohibition on sex work, authorities provided free condoms, information materials and arrangements for sex workers to have routine examinations at STI clinics, in exchange for every client using a condom while visiting a sex worker.

Other programmes, in conjunction with the mass media, were instituted to create substantive behavioural changes in the population. Among the early approaches were:

- Using taxi drivers to disseminate up-to-date information, services and condoms to clients;
- Enlisting students of Ramkhamhaeng University and Nakhon Ratchasima high school to become youth peers to educate 80,000 youth on family-planning, STIs, and HIV and AIDS; and
- Dedicating special attention to targetted groups such as: fishmongers, Burmese migrant workers and the Thai population along the Thai-Burmese border, individuals affected by AIDS, female workers at industrial factories, villagers and hilltribe people, prisoners and other marginalised populations. Subsequent approaches were highly focused on peer outreach and volunteer advocacy for targetted groups.

5.2.5 Current status of the media campaign

The implementations of mass media messages, as well as various outreach activities, resulted in an extraordinary stream of success between 1992 and 1996. However, the economic crash of 1997 brought the success to a halt. In addition to the economic crisis, the nature of Thailand's HIV epidemic shifted[6]. The United Nations Development Programme reported in 2004 that HIV prevalence was 'unacceptably high' in injecting drug user populations, men who have sex with men, mobile populations and seafarers. Furthermore, high levels of STI and HIV were noted among youth who regularly consume alcohol and use non-injecting drugs.

In recent years, few mass media awareness programmes have been generated and Thai youth in particular are confused about HIV and AIDS[7]. Recent surveys indicate that some young people believe that HIV no longer exists in Thailand. Currently, the predominant approach is to reduce the number of new cases, and the government is focusing on providing drugs and antiretroviral therapy to positive individuals.[8]

5.2.6 Mass media and behaviour change

In response to the decline in funding for mass media interventions and awareness-generating programmes, it becomes important to quantitatively study the behavioural change that the mass media campaign was trying to deliver. Thus, the empirical part of the study focuses on examining the relationship between the mass media campaigns and the resulting health behaviours.

5.2.6.1 The national behavioural survey

The study used one of the national behavioural surveys conducted periodically by the Thai Government in collaboration with the Institute for Population and Social Research (IPSR), Mahidol University. The surveys are used to monitor sexual behaviour within the general population. The available data used in this study were from the 1994 Thailand Behavioural Survey.

A total of 890 respondents completed the survey items over the course of a year. The survey used random sampling to ensure representative sampling. The national survey documents:

- Frequency of sexual intercourse in the population
- Condom use
- Number of partners
- Ownership status of various household objects, and
- Perception of AIDS prevention and treatment in the population.

The survey results have previously guided AIDS policies, as well as evolution of the campaign, and provided important information about the media environment in which the campaign initiatives operate.

[6] UNDP, 2004, *Thailand's Response to HIV/AIDS: Progress and Challenges,* Bangkok: UNDP.

[7] Praween Payapvipapong, Vice President, Population and Community Development Association, Thailand (2007)

[8] Presentation brief with Mr Mechai Viravaidhya, Chairman, Population and Community Development Association (2007)

5.2.6.2 Hypotheses

This report attempts to document the extent of awareness and exposure to HIV as a result of the mass media campaigns and examines the behavioural changes in the population as a result. Since the data does not contain information on the actual exposure to the campaign, a proxy is derived from ownership of a television and a radio in the population. It is assumed that since the messages were extremely ubiquitous on media channels during 1994, any respondent owning either a television or a radio was exposed to the HIV advertisements. Thus, the main hypothesis for this report is the following:

- Individuals who have a television and a radio are more likely to engage in protective sexual behaviours such as wearing a condom during sex.
- Individuals who have a television and a radio are less likely to visit sex workers than those who have not been exposed to mass media messages.

5.2.6.3 Methodology

The outcome measures used from the survey(s) are as follows:

- Protective behaviours: Protective behaviour measured by condom usage of individuals. The variable was coded as a dichotomous variable measuring the respondents behaviour (wear a condom) with a sex worker during his last visit.
- Visit to a sex worker: A dichotomous variable was created to measure whether respondents visited a sex worker in the last three months.

The independent variables used from the survey were:

- Income: This was measured, again as a binary variable, where a respondent with income less than or equal to THB 5000 were coded as 0, and respondents with an income over THB 5000 were coded as 1, as a higher income was thought to be a protective factor against HIV;
- Age: This was measured as a dichotomous variable, separating the respondents under 20 (coded as 0) and over 20 (coded as 1). A higher age was thought to have a protective factor against HIV;
- Education: This was also measured as a dichotomous variable where graduate school or college was coded as 1, and the rest (elementary, middle school and high school) were coded 0;
- Television and radio: This variable was measured as a binary variable where having a television or a radio was coded as 1, and having neither was coded 0;
- Marriage: This variable was coded as 1 if a respondent was married and 0 if the respondent was not married. Marriage was also thought to be a protective factor against HIV;
- Knowing people with AIDS: This variable measures respondents' interpersonal experience of AIDS and was coded as a dichotomous variable. Knowing another person with HIV was seen as a protective factor against HIV; and
- Knowing people who had died of AIDS: This variable also measures the respondents interpersonal experience with AIDS and was coded as a dichotomous variable where 0 was coded as not knowing anyone who had died of AIDS.

The resulting analyses were based on binary logistical regression analysis using the three outcome variables. The respondents selected were men who have visited a sex worker (even if just once).

5.2.6.4 Results

A comprehensive analysis of the factors and outcome variables are provided in Appendix A. The resulting logistical analyses suggest that the mass media, and the messages relayed through it, play an important role in protecting respondents from behaviours that could lead to becoming positive.

A. Behavioural outcome: Has visited a sex worker in the last three months

Table 5.1 gives an estimated odds ratio for the various factors relating to a respondents visit to a sex worker. The model included the following factors: income, age, ownership of a television and a radio, respondents' marital status, knowledge of others having AIDS and knowledge of another dying of AIDS. Education was dropped from the model since the education, and television and radio variables, seemed highly correlated (r = 0.69).

The Negelkerke R^2 for the model was 88.2%. People owning a television and a radio is a highly significant factor ($p < 0.01$, OR = 9.261) in a respondents' decision to visit a sex worker in the past three months. The analysis suggests that respondents who own a television and a radio are nine times more likely to *not* have visited a sex worker in the last three months. Other factors in the model (income, age, marriage and interpersonal communicative knowledge) were not significant. Marriage was significant at p = 0.10 (OR = 8.184) where respondents who were married were estimated to be eight times less likely to visit a sex worker in the last three months.

B. Behavioural outcome: Use of a condom during the last visit to a sex worker

Table 5.2 presents odds ratios for the following factors: income, age, ownership of a television and a radio, respondents' marital status, knowledge of others having AIDS and knowledge of another dying of AIDS. The analysis shows that having access to mass media channels greatly increases the odds of a respondent using a condom during the most recent visit to a sex worker.

The Negelkerke R^2 for the model was 45%. Analysis of the results suggests that respondents who own a televsion and a radio are estimated to be six times more likely to use a condom during their most recent visit to a sex worker than those who do not own a television or a radio ($p < 0.01$, OR = 6.645). Income, age and knowledge of others with AIDS, or who have died of AIDS, were not significant factors in predicting respondents' use of condoms with sex workers. Marriage, however, was a significant factor in predicting the use of condoms. Respondents who were married were 0.29 times as likely to use a condom; they were 70% more likely to not use a condom than those who were not married, suggesting that marriage may *not* act as a protecting factor in respondents' condom usage with sex workers.

Table 5.2: Logistic regression co-efficients and odds ratios in behavioural outcome: Male client's last visit to sex worker in past three months

Variables in model	Co-efficients	Odds ratio (05% CI)
Income	0.213	1.238 (.3, 5.108)
Age	-1.319	0.267 (.053, 1.343)**
People owning both TV and radio	2.226	9.261 (3.131, 27.392)**
Marriage	2.102	8.184 (0.933, 67.423)*
Know other people with AIDS	1.191	3.29 (0.76, 14.247)
Know other people who died of AIDS	0.696	2.006 (0.181, 22.179)

* $p < 0.10$
** $p < .01$

Table 5.3: Logistic regression co-efficients and odds ratios in behavioral outcome: Male clients, who used condom during their last visit to a sex worker

Variables in model	Co-efficients	Odds ratio (05% CI)
Income	0.613	1.846 (.683, 3.947)
Age	19.575	
People owning both TV and radio	1.894	6.645 (3.357, 13.154)**
Marriage	-1.211	.298 (.153, .582)**
Know other people with AIDS	-0.572	.565 (.297, 1.143)
Know other people who died of AIDS	0.236	1.266 (.510, 3.146)

** $p < .01$

5.2.6.5 Calculating the cost of mass media campaigns

Using the Robinson and Lewis method of cost-effectiveness calculation[9], the relevant indicators of cost are: the number of broadcastings of each campaign per year, production costs and airtime costs.

Production costs for the campaign were:

- Television advertisements (all three): THB 90,000
- Radio advertisements: THB 7000.

Airtime costs for the campaign were:

- Television airtime: THB 3637 (depreciated by 3% to 1994 levels) for 15 seconds across seven channels
- Radio broadcast time: THB 2425 (depreciated by 3% to 1994 levels) for 15 seconds across 500 radio channels
- Frequency of broadcast: 15 seconds every hour, using the formula:

  production costs + airtime cost = total costs.

Total cost for the media campaign for a year was:

(TV = THB 230,040,000) + (radio = THB 10,950,007,000)

= THB 11,180,047,000 (or US $279,501,175).[10]

[9] Robinson, C, Warren, Lewis L Gary (2003). Cost-effective analysis of behaviour change intervention: A proposed new approach and application to Egypt. *Journal of Biosocial Science*, 35(4): 499–512

[10] Exchange rate assumed at US$1= 40 Thai Baht

5.2.6.6 Effectiveness of the mass media campaign

Discussion: This study supports the hypothesis that exposure to the mass media campaign is a significant factor in influencing sexual behaviours. Exposure to mass media significantly decreased the odds of: a respondent visiting a sex worker in the following three months; and a respondent not using a condom during his next visit to sex worker. A more surprising result was that marriage, as a variable, did not exhibit the protective factor that it has been conventionally thought to do.

While these results are powerful and support the call for a change in policy in handling the HIV epidemic in Thailand, the limitations revealed in this study suggest the need for further investigation. The data used for this study are from one point in time (1994); therefore, using this data in predicting future outcomes could be misleading and the effects misconstrued. In addition, the focus of this study was to ascertain the effects a mass media campaign on sexual behaviours. However, the study was limited by the unavailability of a specific variable; therefore the proxy variable of 'owning a mass medium' had to be used – the assumption being that since the television and radio advertisements were broadcast every hour, respondents who owned a television or radio would be aware of the advertisements.

However, given these limitations, it can be argued that mass media messages are the first line of defence in any health campaign and that they can be used to generate an awareness of health risks. While grassroots and community interventions are powerful and effective, they are also expensive and can be limited in reach. Therefore, attempts to curb the HIV epidemic should begin with media outreach and vast public awareness campaigns.

6
Policy

CHAPTER SUMMARY

The emerging data on AIDS in Asia clearly points to the need for ongoing effective prevention efforts that focus on those who are at highest risk of HIV infection. However, evidence shows that this need is not being met and the region's responses are falling behind. The estimated annual number of new infections in Asia has doubled in the past five years; and the coverage of prevention, treatment and impact mitigation services is not keeping up with this growing epidemic.

Part of the problem lies in the fact that policymakers are failing to apply what is already known. A survey carried out in 2005 found low coverage of prevention services: between 1% and 20% only of the most-at-risk populations were benefitting from HIV-prevention services.

The opportunities for effective action that exist are also not being utilised efficiently. For example, appropriate prevention interventions can maintain the treatment burden in Asia well below 1% of the population. This can make universal access to care and ART an affordable reality, saving millions of lives, preserving the benefits of poverty reduction efforts and improving the lives of millions of people.

The first section of this chapter is based on the report of the Candidate Policy Options workshop held in January 2007 in Bangkok, Thailand, to screen key policy options that could boost the HIV response in Asia. These options are not final recommendations but represent some of the key policy measures and interventions that could bring maximum benefits in slowing the AIDS epidemic in Asia and minimising its impact. The options outlined here are a distillation of the more detailed propositions and questions presented and debated by 16 HIV experts from across Asia and other participants during the workshop.[1]

The section is divided into several thematic areas. In each, the policy propositions are outlined, and outstanding research and other questions are described. The areas covered include prevention, treatment and care; impact mitigation; programme structure, strategic information and resources; resource mobilisation and allocation; and human rights.

The second section of this chapter is based on the HIV/AIDS Bill, 2006, which was placed before the Indian parliament for approval in a unique attempt to create a new legal basis for protecting the rights of those living with HIV.

[1] The full report of the Candidate Policy Options workshop can be obtained by writing to rstap@unaids.org

The legislation was drafted by the HIV/AIDS Unit of the Lawyers Collective, a non-governmental organization based in Mumbai, at the request of the country's National AIDS Control Organisation (NACO). It was finalized after two years of consultation with organizations representing all stakeholders: people living with HIV, women, children, workers, employers, health care professionals and government.

The Bill seeks, among other things, to provide legal immunity to providers of HIV-related services as well as beneficiaries such as most-at-risk populations, all of whom are currently subject to legal harassment.

The third section of this chapter gives an example of an important HIV impact mitigation project in Thailand that tackles the difficult issues of fighting stigma and improving livelihoods at the same time for people living with HIV. Developed by Dr Mechai Viravaidhya, Chairman, Population and Community Development Association, well known for his pioneering work on HIV, the project has potential for replication elsewhere in Asia.

6.1 UNDERSTANDING ASIA'S AIDS EPIDEMIC *Secretariat of the Commission on AIDS in Asia*

In spite of a significant investment of resources and political commitment, national HIV epidemics in Asia continue to expand. In the race between the epidemic and prevention efforts, most countries are lagging behind, as the epidemic expands at an ever-increasing rate. Except for a few states in India, Thailand and Cambodia, the epidemic has continued to elude control efforts.

The data points to the need for ongoing effective prevention efforts that focus on those who are at highest risk of HIV infection. If we prevent HIV infections in those at highest risk, we effectively defuse the main catalyst of the epidemic. *However, Asia is not achieving this currently; the region's responses are falling behind.* Home to over 4.9 million people living with HIV, the region's HIV epidemics are growing in most countries. Unfortunately the coverage of prevention, treatment and impact mitigation services is not keeping up with this growing epidemic.

Enough is known about the nature of the HIV epidemics in Asia to guide effective interventions. The epidemics are driven by new HIV infections among the few most-at-risk populations: female sex workers and their clients, men who have sex with men and injecting drug users. Men who buy sex, and the frequency with which they do so, are the main determinant of the scale of the epidemics in Asia. These clients perpetuate the cycle of transmission in paid sex, and also infect other sexual partners (wives and girlfriends).

HIV epidemics among injecting drug users often kick-start and accelerate wider epidemics which then become concentrated around paid sex. In addition, sex between men contributes substantially to the epidemics, partly because a large proportion of men who have sex with men also have sex with their wives and girlfriends.

HIV interventions in each country therefore must be focused on the most-at-risk populations that are the main drivers of the epidemic in that country. Adequate coverage with HIV interventions is the key. Coverage must reach at least 80% of the most-at-risk populations if the epidemics are to be reversed.

We are failing to apply what we already know. A coverage survey[2] carried out in 2005 found low coverage of prevention services: between 1% and 20% of the most-at-risk populations were benefitting

[2] World Health Organisation (2004), *Coverage of Selected Services for HIV/AIDS Prevention, Care and Support in Low and Middle Income Countries in 2003.*

from HIV prevention services. Treatment also falls behind; more than 80% of people living with HIV and in need of antiretroviral treatment (ART) are unable to access it.

Huge opportunities for effective action exist. Prevention is essential if treatment and care is to be affordable. Appropriate prevention interventions can maintain the treatment burden in Asia well below 1% of the population. This can make universal access to care and ART an affordable reality, saving millions of lives, preserving the benefits of poverty reduction efforts and improving the lives of millions of people.

6.1.1 Prevention

6.1.1.1 Common prevention propositions

These provisional policy propositions given below do not exhaust the full range of options available. Rather, they focus on key interventions that can have the maximum impact in preventing HIV transmission. Therefore, they reflect the specific character of Asia's epidemic, which is driven primarily by the transmission of HIV among and between sections of the population who are at especially high risk of acquiring and transmitting the virus, the most-at-risk populations (mainly female sex workers and their clients, injecting drug users and men-who-have-sex-with-men.)

- ✓ Prevention programmes should focus on introducing and *scaling up HIV services to most-at-risk populations*. National governments, civil society, donors, UN agencies and other international bodies should explicitly recognise this priority and align their investment in prevention of HIV among most-at-risk populations accordingly.
- ✓ Community leadership and involvement is vital for the success of such programmes, and must be actively supported.
  - How can community organisations, including those representing most-at-risk populations, be strengthened?
- ✓ Prioritisation and programmes must, as far as possible, be evidence-based but such a requirement should not stand in the way of innovation or ethical imperatives.
- ✓ Adequate financing is vital and should be sustainable. However, prior full-scale funding guarantees need not be a precondition for action in all respects. There are many examples in Thailand and Cambodia where innovative approaches requiring minimal funding have yielded results. Sometimes top-level political commitment to action, along with innovative programming, brings strong results. (e.g. in Thailand and Cambodia).
- ✓ Resource allocation must be prioritised, in line with a focus of prevention efforts on most-at-risk populations.
- ✓ Governments bear the primary responsibility for ensuring effective HIV-prevention programmes are introduced and expanded. Therefore, prevention programmes must be 'government-owned' but programmes and services should be implemented in partnership with, or via. NGOs and other civil society actors.
- ✓ Neither the providers, nor the recipients of HIV-related services should be penalised or prevented from benefitting from such services (including harm reduction), and should be guarded against harassment and victimisation by law enforcement agencies.

- Supportive legislation – or at least the removal or suspensions of legislative obstacles – is vital.
- One approach could be via public health legislation that provides an enabling environment for HIV prevention programmes. Such an approach would regard HIV as an occupational health risk for sex workers, and would seek to protect them (as a category of various marginalised working populations) against unsafe working conditions, occupational hazards and diseases, and discrimination.
    - What might be the content of such legislation be?

✓ Recognise that male circumcision has a strong protective effect (against HIV and other infections), as shown in recent clinical trials.

- What are the main sufficient and essential conditions for circumcision to qualify as a general prevention strategy?

✓ There needs to be stronger investment in national capacity, and a reduction of dependency on international, external support.

✓ Monitoring and evaluation capacity is a vital part of successful HIV programming.

6.1.1.2 Transmission of HIV in paid sex

✓ Enhanced 100% Condom Use Programmes (with strong sex worker community and local authority involvement) should be implemented in all countries in Asia to reduce the transmission of HIV/STIs during paid sex, and from clients to their other sexual partners.

- Most of the core elements of such a programme are known.
    - How can strong sex worker involvement be integrated into such a programme?
    - Such programmes are most effective in reaching establishment-based sex workers. Can and should they also reach non-establishment-based sex workers equally effectively?
    - Is HIV transmission among non-establishment sex workers and their clients intensive enough to warrant a specific focus on this category of sex workers?
- A technical support function can be set up to advise countries on the design and implementation of such a strategy.
- Improve the gathering and analysis of data on profiles, numbers and behaviour of male clients of sex workers.
- Stronger efforts are needed to ensure that law enforcement and other uniformed services are both enablers and beneficiaries of HIV prevention services.

✓ Target identifiable groups of male clients of sex workers, but recognise that these groups differ from place to place.

    - Should male clients be regarded as a ‘core’, most-at-risk group?
    - *How can male clients of sex workers be targeted effectively?*
    - Are mass communication strategies targetting (potential) male clients effective? How can they be improved?

- Should they be targetted via 'workplace-based' prevention programmes? These could focus, in a cost-effective manner, on categories of men who tend to be more frequent buyers of sex (e.g. uniformed services personnel, seafarers, truck drivers, migrant workers etc.).

6.1.1.3 Sex between men

✓ Decriminalise consensual same-sex relations between adults, and expand and enforce civil rights protection for sexual minorities.

✓ Combat homophobia.

✓ Scale up HIV prevention, treatment, care and supporting interventions tailored to the needs of men who have sex with men.

- Additional research and analysis is needed regarding HIV and men who have sex with men in Asia.

6.1.1.4 Injecting drug use

✓ Proven harm reduction interventions, such as opioid substitution treatment, should be available to opioid users on an adequate scale.

- Place methadone and buprenorphine on countries' essential drugs lists.

6.1.2 Treatment and care

Greater access to affordable treatment and care will dramatically reduce the longer-term impact of the epidemic. In order to expand the benefits of antiretroviral treatment more broadly, far larger numbers of persons living with HIV need to know that they are infected with the virus that causes AIDS, so that they can seek timely treatment. Therefore, HIV testing and counselling must be scaled up and improved. At the same time, the barriers to wider provision of affordable antiretroviral treatment need to be removed. Concerted political action and clear financial planning can help achieve this.

6.1.2.1 Counselling and testing

A. Guiding principle

Far greater numbers of people living with HIV must know their serostatus.

B. Propositions

✓ Current voluntary counselling and testing services must be improved and scaled up.

- This will require greater involvement of civil society organisations, especially in expanding coverage among most-at-risk populations.

✓ The routine offer of testing and counselling (also known as provider-initiated testing and counselling) can be considered as an additional approach, but only under strict conditions.

- The benefit of this approach in low-prevalence settings is debatable.
- There are serious concerns that this approach would be used as a form of mandatory testing, especially with respect to sex workers, injecting drug users and men who have sex with men. Safeguards and great care are needed to prevent rights abuses if the provider-initiated testing and counselling approach is adopted.

- Further research is required to determine the evidence-base for the efficacy of provider-initiated testing and counselling, both in terms of prevention, and treatment and care.

✓ Notwithstanding the findings of research into the efficacy of provider-initiated testing and counselling, this approach should only be considered where:

- The level of the epidemic warrants its use.
- Antiretroviral treatment is widely accessible.
- Access to prevention services and commodities are available (e.g. clean needles, condoms etc.).
- Sufficient measures are in place to safeguard confidentiality (perhaps, even anonymous testing) and to protect against discrimination.
- Adequate capacity exists to provide counselling.
  - Should a combination of three options – voluntary counselling and testing, provider-initiated testing and counselling, and 'routine' testing of pregnant women be considered?

6.1.2.2 Antiretroviral treatment

A. Guiding principles

✓ Antiretroviral treatment provision should be equitable and sustainable. The goal must be universal access.

- What are the ethical implications of ensuring equitable and affordable access to treatment for people living with HIV, while not doing to for all others with life-threatening diseases?

✓ Second-line antiretroviral drugs should be accessible to those who require them.

- What steps must be taken to ensure that second-line drugs become affordable?
- What policy steps are required to ensure affordable scaled-up treatment within five years (including second-line drugs)?

✓ Careful financial planning is required in order to achieve this.

- Should a means-tested subsidy system be adopted?
- What might the main criteria be?
- Can the administration and management of such a system be integrated into an existing system?

✓ Scale-up of antiretroviral treatment and care (and treatment of opportunistic infections, such as TB) constitutes a major challenge to health systems, and requires significant changes in how they operate.

- What are the major improvements and changes that need to take place?

B. Propositions

✓ It is necessary, realistic and cost-effective to integrate treatment into existing health systems.

- How can this be achieved in ways that enhance access of those most-at-risk who might not usually use public health services?
- How do we address the special needs, including discrimination issues, of most-at-risk populations?

✓ One of the financing mechanisms for second-line treatment could be a cost-sharing scheme.

- This would require examining and determining the financial requirements, country-by-country, designing appropriate operational and administrative systems and development of subsidy criteria for ART and related expenses (e.g. diagnostic testing etc.).

✓ A regional political response should be mustered in Asia to ensure that patent-related and other obstacles blocking the importation or production of new generic drugs, including drugs for ART, are removed.

✓ UN agencies should be more proactive in advocating for compulsory licensing and other opportunities for the wider and more affordable provision of essential drugs (including ARVs) to be used, and in highlighting the obstacles hindering the use of those opportunities.

✓ Universal access to treatment and care requires the strengthening of existing health systems (from procurement and management systems to delivery and monitoring of treatment adherence, etc.).

- State and civil society capacity to provide treatment, both for HIV *and* opportunistic infections, must be strengthened.

ARV treatment programmes should incorporate nutritional and food security components.

6.1.3 Impact mitigation

As Asia's epidemic continues to grow, ever-larger numbers of people are being affected by HIV. The poor among them are least able to endure the associated hardships. Increased spending on healthcare and the loss of labour and income (when breadwinners become ill and die) threatens to push lower-income households (deeper) into poverty. Therefore, mitigating the epidemic's impact is also an important element of Asian country efforts to achieve the Millennium Development Goals.

A. Guiding principles

✓ Wider access to antiretroviral treatment in itself mitigates the impact of the epidemic and should be a fundamental element of any impact mitigation strategy.

✓ A narrow, HIV-specific approach to impact mitigation is not ideal. It is more cost-effective and beneficial to integrate or 'mainstream' HIV impact mitigation programmes into wider livelihood support efforts.

✓ However, AIDS-related discrimination does warrant special action, e.g. where women widowed by AIDS suffer particular discrimination and rights violations.

- What kind of situations would warrant special action?
- What types of policy measures can be most effective in such cases?

✓ The impact of AIDS is not only material.

- How can other types of impact – such as discrimination in accessing employment, credit or education services – be countered?

B. Propositions

✓ Discrimination against people living with HIV or those affected who try to access credit through financial systems should be removed; laws and regulations should be established to prevent such discrimination.

✓ Establish a long-term (until 18 years of age, adulthood) child-support cash transfer system that strengthens the capacity of families and communities to safeguard the wellbeing of orphans and vulnerable children within a family environment.

✓ Introduce policy adjustments to ensure that orphans and vulnerable children have access to a comprehensive range of social services, including health and nutrition, education, shelter, psychosocial and legal support.

- The aim is not to achieve full, expansive support in one step. Policy changes are needed to introduce catalytic support that would enhance and broaden the coverage of current forms of income and services support in order to reach the most vulnerable orphans and children.
- This would include special attention to afford children living with HIV access to antiretroviral medicines and other forms of treatment and care.
- Where antiretroviral treatment is not yet universally accessible, priority should be given to children and mothers living with HIV.
    - Are there countries in Asia which currently lack state support for vulnerable children? In such instances, what start-up or catalytic programmes should be introduced?
    - How do we expand support to orphans and vulnerable children where programmes do not exist? Can this be achieved via those existing, and how?

6.1.4 Programme structure, strategic information and resources

Despite the increases in AIDS funding in recent years, current resources are inadequate for an effective HIV response.

6.1.4.1 Resource mobilisation and allocation

A. Guiding principles

✓ HIV services are still competing for scarce resources. It is necessary to develop criteria for setting priorities.

✓ Cost-effectiveness should not be the sole or overriding measure.

✓ The burden of health spending borne by the poor must be reduced.

✓ Address demand-side constraints to help reduce health system inequities.

✓ Reliance on external funding should be reduced.

B. Propositions

- ✓ A priority-setting framework should be designed. It would divide services into a package of essential core services (highly cost-beneficial interventions such as HIV prevention for most-at-risk populations) and a larger package of recommended non-core services.
  - Which services should be regarded as core services?
  - What criteria should be used to determine the package of core services?
  - Should such a package group together prevention, treatment and care, and impact mitigation services? Or, should separate core services packages be determined for each of those areas?
  - How can a standard package be designed in such a way that it is easily adaptable to fit with the epidemiological realities in each country?
  - It is vital to target the 'right' groups (e.g. if freelance sex workers have much lower client turnover than establishment-based sex workers, should the former be a priority target for interventions?)
- ✓ All Asian countries should agree to implement the core services package within a specified timeframe.
- ✓ Introduce sustainability plans (to reduce or eventually phase out reliance on external funding).
  - In some countries, significant fiscal responsibilities (but not necessarily fiscal powers) are devolved to subnational levels (state, province or district). These realities must be incorporated into these propositions.
- ✓ Determine an appropriate mix of domestic and internal resources for funding the core and non-core service packages.
  - What criteria should guide such an exercise?
  - Should prevention services be regarded as primarily a domestic funding responsibility, for example?
- ✓ Develop new public-private partnerships for the financing and managing of HIV services.
- ✓ Policies are needed to reduce the burden of health spending on the poor, lessen financial risks and limit fragmentation.
  - A large share of health spending (including HIV spending) is borne by the poor. In Asian countries with the largest HIV burdens, out-of-pocket spending accounts for 60–80% of health spending, for example.
  - One approach would be to integrate HIV services into existing risk pooling mechanisms (social or private insurance schemes, health equity funds, etc.).
  - An additional approach would be to pool HIV-specific resources into 'HIV Funds' which can then be managed to purchase services and commodities more effectively.
- ✓ Demand-side subsidies should be introduced to limit factors that discourage or prevent people from accessing health services, such as transport costs, opportunity costs (loss of income), etc.
  - What kinds of demand-side interventions can be effective for most-at-risk populations in terms of accessing testing and counselling, treatment and care?

- Explicit criteria could be used for subsidising the poor (such as paying into health funds, paying insurance premium vouchers, providing exemptions, etc.).

6.1.4.2 Strategic information

Surveillance provides vital information that should guide HIV responses. In Asia, this information is uneven. Only six countries are systematically capturing and analysing information on their epidemics, and none are gathering reliable information about the coverage of their HIV responses.

A. Guiding principle

Countries must strengthen their domestic capacity to manage their own strategic HIV information systems.

B. Propositions

✓ Each head of state must demand an annual briefing on rigorously gathered and analysed HIV data and estimates (including estimates of AIDS-related deaths, patterns and trends in HIV transmission by risk group, coverage of services, resource-tracking, etc.).

- Which categories of information are 'strategic' and essential?
- How can we ensure that governments act on this information? Put the information into the public domain, and ensure that the data is analysed by civil society institutions.

✓ Task regional and country-level technical groups (involving most-at-risk populations) with generating this information.

- Where strategic information systems and capacity do not currently exist, what kinds of phased approaches should be adopted?
- Which HIV surveillance, information gathering and analysis responsibilities can be adopted by which existing institutions?
- How can the resources of non-state institutions (academic and 'private') be enlisted?

✓ The implementation of the various aspects of the HIV response must be monitored.

- Should 'AIDS watch' bodies be established to monitor the HIV response, including human rights matters related to it? Or, should such functions be assigned to various other existing institutions or organisations?

6.1.4.3 Multisectoral response

A. Guiding principle

✓ In low-prevalence settings such as Asia, the core HIV response should be largely health-focused.

✓ Highly visible commitment from heads of state is vital.

✓ Where possible, HIV services should be mainstreamed into the activities of various sectors.

✓ Some coordination is required of non-health sector roles and activities in the HIV response.

- Are there comparative studies on this in Asia?

B. Propositions

✓ Determine which sector involvements are essential in the response.

- This would be guided by the priority actions or the core service package that is to be implemented. Under most circumstances, the most important sectors would be Health, Social Welfare or Social Development, Police or Law Enforcement and Finance.

✓ Avoid creating top-heavy new structures such as National AIDS Commissions.

- Under what conditions a new coordinating mechanism should be created?
- Where should it be located? This might depend on the critical functions that require coordination, for example, policy coordination should probably be at highest political level (the Prime Minister's or President's Office). For knowledge generation, it is perhaps best located in the Ministry of Health or in a statistics body.
- What about countries with strong devolution of power and autonomy to states and provinces?

✓ Effective coordinating mechanisms for mainstreaming HIV interventions should be determined.

- Responsibility for coordinating mainstreaming can be added to the mandates of existing institutions.
- Coordination should occur at different levels, not only centrally.
    - What does such a coordination role entail?

6.1.5 Human rights and other cross-cutting issues

Key imperatives relating to human rights, gender concerns, etc. are integrated into the various guiding principles and propositions in the other thematic areas. In addition, further research is to be conducted in order to refine those elements. Additional issues relating particularly to human rights and discrimination are listed here.

A. Guiding principle

✓ Ensure the greater involvement and representation of communities in HIV responses.

B. Propositions

✓ Introduce laws to protect women against domestic violence (including rape within marriage).

✓ Introduce a comprehensive anti-discrimination law (including rights of healthcare workers to protection against infection) addressing promotion of consensual testing and preservation of confidentiality (including partner notification).

6.2 MODEL HIV LEGISLATION: A CASE STUDY *Anand Grover*

6.2.1 Introduction

Protecting and promoting the rights of people living with HIV, as well as those affected by the epidemic, is central to creating an environment whereby stigma, violence and inequity are reduced, if not eradicated. The creation of a non-discriminatory environment based on the principles of human rights is also probably the best public health strategy in controlling the spread of HIV.

However, it is well known that in many countries around Asia there is rampant discrimination against people living with HIV, in health, employment, education and access to various facilities. This is all apart from the continuing stigma associated with HIV both within the family and in wider social settings.

While some progress has been made to ensure the basic human rights of those infected or affected by HIV, mainly through raising of public awareness, these rights are seldom enshrined in national laws. Existing legal remedies have been mostly ineffective and often the prevailing legal systems even go counter to universally accepted norms regarding the rights of people living with HIV.

In this context, the HIV/AIDS Bill, 2006 was placed before the Indian parliament for approval in a unique attempt to create a new legal basis for protecting the rights of those living with HIV. The legislation was drafted by the HIV/AIDS Unit of the Lawyers Collective, a non-governmental organization based in Mumbai, at the request of the country's National AIDS Control Organisation (NACO). It was finalized after two years of consultation with organizations representing all stakeholders: people living with HIV, women, children, workers, employers, health care professionals and government.

The Lawyers Collective undertook a comprehensive examination of legal developments around HIV in other parts of the world to create the basis for the draft legislation for India. This was done while keeping in mind the specific nature of the epidemic in India and the local cultural, social and economic context.

The substantive provisions included in the draft HIV/AIDS Bill, 2006 address the issues of discrimination, disclosure, informed consent, access to treatment and obligations of the state towards those living with HIV.

It also provides a grievance redressal mechanism, in particular, through the innovative concept of the Health Ombudsman, to be appointed in every district of the country to hear cases of HIV-related discrimination and ask for audits. Individuals also would be permitted to approach courts directly without contacting an ombudsperson, according to the draft Bill.

The HIV/AIDS Bill, 2006 is currently under consideration of relevant Indian ministries as also by the Indian parliament.

6.2.2 Selected chapters from the proposed HIV/AIDS Bill, 2006:

THE HIV/AIDS BILL, 2006

A Bill to provide, keeping in view the social, economic and debilitating effects of the HIV epidemic in India, for the prevention and control of the HIV epidemic in India, the protection and promotion of human rights in relation to HIV/AIDS, for the establishment of National, State, Union Territory and District Authorities to promote such rights and promote prevention, awareness, care, support and treatment programmes to control the spread of HIV, and for matters connected therewith or incidental thereto.

Whereas the spread of HIV/AIDS is a matter of concern to all, and

Whereas there is a need to prevent and control the spread of HIV/AIDS, and

Whereas there is a need to protect and promote the rights of those who are HIV-positive, those who are affected by HIV/AIDS and those who are most vulnerable to HIV/AIDS in order to secure their human rights and prevent the spread of HIV/AIDS, and

Whereas there is a need for effective and accessible care, support and treatment for HIV/AIDS, and

Whereas there is a need to protect the rights of healthcare providers and other persons in relation to HIV/AIDS, and

Whereas the Union of India has signed various treaties, agreements and declarations relating to HIV/AIDS, the protection of rights of those who are HIV-positive, those who are affected by HIV/AIDS and those who are most vulnerable to HIV/AIDS in order to secure their human rights and prevent the spread of HIV/AIDS, including the International Convention on Civil and Political Rights, the International Convention on Economic, Social and Cultural Rights and the United Nations General Assembly Special Session Declaration of Commitment on HIV/AIDS, and

Whereas it is necessary to give effect to those treaties and declarations under Article 253 of the Constitution of India.

BE it enacted by Parliament in the Fifty-sixth Year of the Republic of India as follows:

CHAPTER I

PRELIMINARY

1. Short title, extent and commencement.

(1) This Act may be called the HIV/AIDS Act, 2006.

(2) It extends to the whole of India.

(3) It shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint.

2. Definitions. — In this Act, unless the context otherwise requires, —

(a) "AIDS" means Acquired Immune Deficiency Syndrome, and is a condition characterised by a combination of signs and symptoms, caused by HIV, which attacks and weakens the body's immune system making the HIV-positive person susceptible to other life threatening conditions, or as may be defined by the National HIV/AIDS Authority from time to time;

(b) "Appropriate Government" means

(i) the Central Government in the case of the territory comprising the whole of India,

(ii) the State Government in the case of territory comprised in a State,

(iii) the Union Territory Government, in the case of territory comprised in a Union Territory having its own legislature, and

(iv) the Central Government, in the case of other Union Territories;

(c) "capacity to consent" means an individual's ability, determined on an objective basis irrespective of such individual's age, to understand and appreciate the nature and consequences of a proposed healthcare service, treatment, intervention, procedure or research, or of a proposed disclosure of HIV-related information, and to make an informed decision concerning such service, treatment, intervention, procedure or disclosure:

Explanation:– In determining the capacity to consent of an individual, the following factors may be considered: whether or not they are responsible for their own financial care or that of their family or dependants and whether or not they are living on their own;

(d) "children affected by HIV/AIDS" means persons below the age of 18 years who are HIV-positive, or have a parent or guardian who is HIV-positive, or have lost a parent or guardian to AIDS or live in households fostering children orphaned by AIDS;

(e) "court" means a civil, criminal or revenue court and includes any tribunal or any other authority, constituted under any law for the time being in force, to exercise judicial or quasi-judicial functions;

(f) "discrimination" includes any act or omission including a policy, law, rule, practice, custom, tradition, usage, condition or situation which directly or indirectly, expressly or by effect, immediately or over a period of time:

(i) imposes burdens, obligations, liabilities, disabilities or disadvantages on, or

(ii) denies or withholds benefits, opportunities or advantages, from, or

(iii) compels or forces the adoption of a particular course of action by, any person or category of persons, based on one or more HIV-related grounds.

Explanation:– HIV-related grounds are:

(i) HIV status, actual or perceived; or

(ii) actual or perceived association with an HIV-positive person; or

(iii) actual or perceived risk of exposure to HIV infection; or

(iv) any other ground where discrimination based on that ground (1) causes or perpetuates or has a tendency to perpetuate systemic disadvantage in respect of a category of persons, (2) undermines human dignity or (3) adversely affects the equal enjoyment of a protected person's rights and freedoms in relation to HIV/AIDS;

(g) "domestic relationship" means a relationship between two or more persons who live or have lived together in a shared household, when they are related by consanguinity, marriage or through a relationship in the nature of marriage, adoption or are family members living together as a joint family;

(h) "healthcare provider" means an individual whose vocation or profession is directly or indirectly related to the maintenance of the health of another individual including any physician, nurse, paramedic, psychologist, counsellor or other individual providing medical, nursing, psychological, or other healthcare services of any kind;

(i) "HIV" means the Human Immunodeficiency Virus;

(j) "HIV/AIDS Authority" means a National, State, Union Territory or District HIV/AIDS Authority, as the context requires, constituted and established under Chapter XI of this Act;

(k) "HIV-positive person" means a person who tests positive for HIV with a confirmatory HIV test;

(l) "HIV-related information" means any information related to the HIV status of a person including:

(i) information related to or concerning the undertaking, performing or result of an HIV test; or

(ii) information related to or concerning the HIV or HIV antibody status of a person; or

(iii) information related to or concerning the care, support or treatment of a person; or

(iv) any other private information concerning a person, collected, received, accessed or recorded in connection with an HIV-related test, HIV-related treatment or HIV-related research or the HIV status of a person; or

(v) information which may identify such person; or

(vi) any information relating or connected thereto;

(m) "HIV status" means the actual or perceived presence in a person's body of HIV or symptoms of AIDS;

(n) "HIV test" means a test to determine the presence of the antibody or antigen of HIV, or of HIV infection;

(o) "HIV-related test" includes an HIV test and tests to determine the presence of conditions related to HIV;

(p) "IEC" means information, education and communication;

(q) "informed consent" means consent given, specific to a proposed intervention, without any force, undue influence, fraud, threat, mistake or misrepresentation and obtained after disclosing to the person giving consent adequate information including risks and benefits of, and alternatives to, the proposed intervention in a language and manner understood by such person;

(r) "institution" means any person carrying on systematic activity by co-operation between two or more persons in the previous twelve months, in one or more places with functional integrity, for wages, consideration or otherwise, for the production, supply or distribution of goods or services with a view to satisfy human wants or wishes.

Exception: 'Institution' shall not include any seasonal agricultural operation;

(s) "partner" means a spouse, *de facto* spouse or a person with whom another person has a relationship in the nature of marriage;

(t) "person" includes an individual, a Hindu Undivided Family, any other family, a company, a firm, an association of persons or a body of individuals, whether incorporated or not, in India or outside India, any corporation established by or under any Central, State or Provincial Act or a Government company as defined in Section 617 of the Companies Act, 1956, any body corporate incorporated by or under the laws of a country outside India, a co-operative society registered under any law relating to co-operative societies, a local authority, and every other artificial juridical person;

(u) "prescribed" means as prescribed in the Rules under this Act;

(v) "protected person" means a person who is:

(i) HIV-positive; or

(ii) actually, or perceived to be, associated with an HIV-positive person; or

(iii) actually, or perceived to be, at risk of exposure to HIV infection; or

(iv) actually or perceived to be, a member of a group actually or perceived to be, vulnerable to HIV/AIDS.

(w) "reasonable accommodation" means the alteration of policies, practices, or procedures or the modification of or adjustment to a job or work or other environment or the way things are usually done that enables an HIV-positive person who is otherwise qualified to enjoy equal benefits and privileges of the programme, service, or activity, or to perform the essential functions of a job or to fulfil the requirements of an educational programme or course as a similarly-situated person who is not HIV-positive and includes job restructuring, part-time or modified work or education schedules, or reassignment to a vacant position.

(x) "Regulations" means Regulations under this Act;

(y) "significant risk" means:

(i) the presence of a significant risk body substance; and

(ii) a circumstance which constitutes significant risk for transmitting or contracting HIV infection; and

(iii) the presence of an infectious source and a non-infected person,

or as may be defined by the National HIV/AIDS Authority from time to time.

Explanation 1: "Significant risk body substances" are blood, blood products, semen, vaginal secretions, breast milk, tissue and the following body fluids: cerebrospinal, amniotic, peritoneal, synovial, pericardial and pleural.

Explanation 2: "Circumstances which constitute significant risk of transmitting or contracting HIV infection" are:

(i) sexual intercourse including vaginal, anal or oral sexual intercourse which exposes an uninfected person to blood, blood products, semen or vaginal secretions of an HIV-positive person;

(ii) sharing of needles and other paraphernalia used for preparing and injecting drugs between HIV-positive persons and uninfected persons;

(iii) the gestation, birthing or breast feeding of an infant when the mother is an HIV-positive person;

(iv) transfusion or transplantation of blood, blood products, organs or other tissues from an HIV-positive person to an uninfected person, provided such blood, blood products, organs or other tissues have not been tested conclusively for the antibody or antigen of HIV and have not been rendered non-infective by heat or chemical treatment;

(v) other circumstances not identified above during which a significant risk body substance, other than breast milk, of an HIV-positive person contacts or may contact mucous membranes including eyes, nose or mouth, non-intact skin including open wounds, skin with a dermatitis condition or abraded areas or the vascular system of an uninfected person. Such circumstances include but are not limited to needle-stick or puncture wound injuries and direct saturation or permeation of these body surfaces by the infectious body substance.

Provided that "significant risk" shall not include:

(i) exposure to urine, faeces, sputum, nasal secretions, saliva, sweat, tears or vomit that does not contain blood that is visible to the naked eye;

(ii) human bites where there is no direct blood to blood, or blood to mucous membrane contact;

(iii) exposure of intact skin to blood or any other blood substance;

(iv) occupational settings where individuals use scientifically accepted universal precautions, barrier techniques and preventive practices in circumstances which would otherwise pose a significant risk and such barriers are not breached and remain intact.

(z) "State" shall have the meaning assigned to it under Article 12 of the Constitution of India.

(za)"universal precautions" means infection control measures that prevent exposure to or reduce the risk of transmission of pathogenic agents including HIV and includes education, training, personal protective equipment such as gloves, gowns and masks, hand washing, and employing safe work practices.

3. General Declaration of Principles and Interpretation.

(1) Any person applying this Act must interpret its provisions to give effect to:

(a) The letter and spirit of the Constitution of India, the provisions of which include the guarantee of equality, life and personal liberty and the freedoms of speech, expression and movement;

(b) Compliance with international law obligations including treaty obligations in terms of, amongst others, the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights, the International Covenant on Civil and Political Rights, the United Nations General Assembly Special Session Declaration of Commitment on HIV/AIDS and the Convention on the Elimination of All Forms of Discrimination against Women and customary international law; and

(c) The Preamble of this Act, thereby fulfilling the spirit, purpose and objects of this Act.

(2) In the adjudication of any proceedings, which are instituted in terms of or under this Act, the Court shall apply the principle of purposive interpretation and in balancing rights, shall follow the principle of the least restrictive alternative.

(3) In the adjudication of any proceedings, which are instituted in terms of or under this Act, the following principles shall apply:

(a) The expeditious processing of cases, which facilitates participation by the parties to the proceedings;

(b) Access to justice to all persons in all judicial and other dispute resolution fora;

(c) The use of corrective or restorative measures in conjunction with measures of a deterrent nature; and

(d) The development of special skills and capacity for persons applying this Act in order to ensure effective implementation and administration thereof.

(4) In the application of this Act, the following shall be recognised and taken into account:

(a) The existence of systemic discrimination and inequalities, particularly in respect of gender, sexuality, class, disability, religion, race, caste, sex and place of birth in all spheres of life as a result of past and present discrimination, including that brought about by patriarchy; and

(b) The need to take measures at all levels to eliminate such discrimination and inequalities.

CHAPTER II

PROHIBITION OF DISCRIMINATION

4. Prohibition of Discrimination.

(1) No person shall be subject to discrimination in any form by the State or any other person in relation to any sphere of public activity including:

(a) Denial of, or termination from, employment or occupation unless in the case of termination:

(i) a person, who is otherwise qualified, in the written assessment of an independent healthcare provider qualified to make such an assessment, poses a significant risk of transmission of HIV to other persons in the workplace, or is unfit to fulfil the duties of the job; and

(ii) the employer is unable to provide reasonable accommodation due to undue administrative or financial hardship and the employer shall along with the letter of dismissal provide a written statement to such person stating the nature and extent of such hardship.

Provided that if the employer fails to provide such written statement, it shall be presumed that there is no such undue administrative or financial hardship;

(b) Unfair treatment in, or in relation to, employment or occupation;

(c) Denial or discontinuation of, or unfair treatment in, healthcare services;

(d) Denial or discontinuation of, or unfair treatment in, educational services;

(e) Denial or discontinuation of, or unfair treatment with regard to, access to, or provision or enjoyment or use of any goods, accommodation, service, facility, benefit, privilege or opportunity dedicated to the use of the general public or customarily available to the public, whether or not for a fee including shops, public restaurants, hotels and places of public entertainment or the use of wells, tanks, bathing ghats, roads, burial grounds or funeral ceremonies and places of public resort;

(f) Denial or discontinuation of, or unfair treatment with regard to, the right of movement;

(g) Denial or discontinuation of, or unfair treatment with regard to, the right to reside, purchase, rent, or otherwise occupy, any property;

(h) Denial or discontinuation of, or unfair treatment in, the opportunity to stand for or hold public or private office;

(i) Denial of access to, removal from, or unfair treatment in, a State or private institution in whose care or custody a person may be;

(j) Denial of, or unfair treatment in, the provision of insurance unless such unfair treatment is based on and supported by actuarial studies;

(k) Isolation or segregation of a protected person;

(l) HIV testing as a pre-requisite, for obtaining employment, or accessing healthcare services or education or, for the continuation of the same or, for accessing or using any other service or facility.

Explanation:– Without prejudice to the generality of the provisions of this Act, Schedule I to this Act is intended to illustrate and emphasise some instances of unfair treatment, which are discriminatory, in order to address and eliminate such treatment and assist persons in interpreting their experiences and treatment.

(2) Nothing in this Act shall prevent the State or any other person from taking measures for the protection, benefit or advancement of protected persons including the greater involvement of HIV-positive persons.

5. **Prohibition of Hate and Discriminatory Propaganda.** — No person shall, publish, propagate, advocate or communicate by words, either spoken or written, or by signs or by visible representations or otherwise against any protected person, or group or category of protected persons, in general or specifically, anything or disseminate or broadcast any information, or publish or display any advertisement or notice, that could reasonably be construed to demonstrate an intention to be harmful or to incite harm, promote or propagate hatred, or which is likely to expose protected persons to hatred, discrimination, harm or physical violence.

6. **Prohibition of victimisation.** — No person shall subject, or threaten to subject any other person or persons to any detriment on the grounds that such person or persons have taken or intend to take or are believed to have taken or intend to take any of the following actions:

(a) make a complaint under this Act,

(b) bring proceedings under this Act against any person,

(c) furnish any information, or produce any documents to a person exercising or performing any power or function under this Act,

(d) appear as a witness in a proceeding under this Act,

(e) assert their rights or the rights of any other person under this Act, or

(f) allege that a person has done an act that is unlawful by reason of a provision of this Act.

CHAPTER III

INFORMED CONSENT

7. **Right to autonomy.** — Every person has the right to bodily and psychological integrity including the right not to be subject to medical treatment, interventions or research without that person's informed consent.

8. **Informed Consent for HIV testing, treatment and research.**

(1) Subject to the provisions of this Act, no HIV-related test or HIV-related treatment of a person or HIV-related research involving a person, shall be undertaken or performed except with the informed consent of that person or that person's representative in accordance with sub-section (2) below.

(2) The informed consent of a person's representative shall be taken only in the following circumstances:

(a) where the person has died, from that person's partner or relative or administrator or executor;

(b) where in the case of an HIV-related test or HIV related treatment:

(i) the person is under the age of 12 years, from that person's parent or legal or de facto guardian or next friend;

(ii) the person is between the ages of 12 and 16 years and, in the written assessment of the concerned healthcare provider lacks the capacity to consent, from that person's parent or legal or de facto guardian or next friend;

(c) where in the case of HIV-related research, the person is below the age of 18 years, from that person's parent or legal or de facto guardian or next friend;

(d) where, in the written assessment of the concerned healthcare provider, the person lacks the physical or mental capacity to consent, from that person's partner, or relative or legal or de facto guardian;

(e) in an emergency situation, where the person is unconscious, or otherwise unable to give informed consent, from that person's partner, or relative or legal or de facto guardian;

(f) in clauses (a) to (e) above, where a representative of the person is not available to give informed consent, or in clause (e) above, in the opinion of the healthcare provider, is not acting in the best interest of the person, then the same shall be taken from an authorised representative of the concerned institution or an independent healthcare provider.

Provided that where informed consent is given by a person's representative under sub-clause (2)(b), (c) and (d) best efforts shall be made to involve the person for whom informed consent is being given in the informed consent process and where informed consent is being given by the representative under sub-section (2)(e) the person for whom informed consent is being given shall as soon as possible be informed of the decision.

(3) Informed consent taken under sub-section (1) or (2) shall be recorded in writing.

Provided that where a person is unable to give informed consent in writing, informed consent may be taken verbally from that person and a contemporaneous record of such informed consent shall be entered into records maintained in the regular course of business by the person taking the informed consent.

(4) The National HIV/AIDS Authority shall within 180 days of its constitution and establishment notify counselling protocols that shall be applicable to all persons including counselling protocols for HIV tests, HIV related tests, HIV-related treatment and HIV-related research and counselling protocols for children who are HIV-positive including how such children should be involved in the informed consent process and how and who should disclose their status to them.

(5) Every institution involved in HIV-related testing, HIV-related treatment or HIV-related research shall follow counselling protocols for women and children to ensure they have access to conducive settings that facilitate their individual decision making for HIV-related testing, HIV-related treatment or HIV-related research.

(6) Informed consent for an HIV test shall be valid only when the person being tested is provided pre-test and post-test counselling in accordance with the Regulations.

Provided that where a representative of the person is giving informed consent such representative shall also receive counselling.

(7) Informed consent for HIV-related treatment shall be valid only when the person who is to be administered the treatment, and such person's representative, in case the informed consent is being given by a representative under sub-section (2), is explained the risks and benefits of the proposed treatment, including the nature of HIV/AIDS, the treatments available for it, the alternatives that may be available, the stages when they can be administered, their duration, their side-effects, the likely expenses and the adherence requirements of such treatment.

(8) Informed consent for HIV-related research shall be considered valid only when the potential research subject, and such person's representative, in case the informed consent is being given by a representative under sub-section (2), is comprehensively informed of the aims, methods, sources of funding, any possible conflicts of interest, institutional affiliations of the researcher, the anticipated benefits and potential risks of the study, the discomfort it may entail and the right to abstain from participation in the research or to withdraw consent to participate in the research at any time without any adverse consequences.

9. Exceptions to Informed Consent for an HIV-related test. — Informed consent for an HIV-related test is not required in the following circumstances:

(a) when an HIV-related test is ordered by a court;

Provided that no court shall order an HIV-related test to be carried out either as part of a medical examination or otherwise, unless the court:

(i) determines by an order that the carrying out of the HIV-related test is necessary for the determination of issues and in the interest of justice in a matter before it; and

(ii) ensures that the person being tested receives pre-test and post-test counselling and that the HIV-related information of that person is not disclosed except in accordance with the provisions of this Act;

(b) for HIV-related testing in the procuring, processing, distribution or use of a human body or any part thereof, including organs, tissues, blood, semen or other body fluids for use in medical research or therapy or for transplantation, transfusion to, or artificial insemination of persons;

Provided that if the test results are requested by a donor prior to donation, then the donor will be referred to a Voluntary Counselling and Testing Centre and shall not be entitled to the results of the test unless the donor has received post-test counselling from the Voluntary Counselling and Testing Centre;

(c) for epidemiological or surveillance purposes where the HIV test is anonymous and unlinked and is not for the purpose of determining the HIV status of a person;

Provided that persons who are subjects of such epidemiological or surveillance studies shall be informed of such studies in accordance with the Regulations.

10. HIV Testing.

(1) Notwithstanding any law for the time being in force, no person shall be subject to an HIV test except in accordance with the provisions of this Act.

(2) Subject to the provisions of this Act, no HIV test may be recommended or performed except:

(a) for the voluntary determination of the HIV status of a person; or

(b) if it is medically indicated for the appropriate treatment or care and in the best interest of the person being tested.

(3) An HIV test may be performed only by:

(a) A Voluntary Counselling and Testing Centre; or

(b) A pathology laboratory, either independent or attached to a healthcare institution; or

(c) A blood bank licensed under the law for the time being in force.

Provided that the Central Government shall, within 360 days of the commencement of this Act, formulate and notify Regulations for the recognition of Voluntary Counselling and Testing Centres and pathology laboratories by the concerned HIV/AIDS Authority which shall provide inter alia the requirements for recognition and the time period within which a decision on recognition shall be taken and existing Voluntary Counselling and Testing Centres and pathology laboratories shall, within 90 days of the notification of such Regulations apply for such recognition and from the date of such notification only recognised Voluntary Testing and Counselling Centres, pathology laboratories and blood banks shall perform HIV tests.

(4) A person who seeks to voluntarily determine their HIV status and who wishes to remain anonymous shall have the right to do so, and to provide informed consent in writing by using a coded system that does not link their individual identity with the request or result of the HIV test.

(5) Any person marketing or selling technologies for self-testing of HIV shall do so only in accordance with the Regulations.

CHAPTER IV

DISCLOSURE OF INFORMATION

11. Right to Privacy. — Every person has the right to privacy.

12. Disclosure of Information.

(1) Notwithstanding anything contained in any law for the time being in force, no person shall be compelled to disclose HIV-related information or any other private information concerning themselves except when a court determines by an order that the disclosure of such information is necessary for the determination of issues and in the interest of justice in a matter before it.

(2) Notwithstanding anything contained in any law for the time being in force, no person shall disclose or be compelled to disclose HIV-related information or any other private information of another person, imparted in confidence or in a relationship of a fiduciary nature, except with the informed consent of that person or a representative of the person as specified in Section 8(2).

Provided that where the relationship is of a fiduciary nature, informed consent shall be recorded in writing.

Provided further that all HIV-related information shall be presumed to have been imparted or received in confidence unless otherwise shown.

(3) Informed consent for disclosure of HIV-related information or private information is not required in case the disclosure is made:

(a) by a healthcare provider to another healthcare provider who is involved in the provision of care, treatment or counselling of a person, when such disclosure is necessary to provide care or treatment in the best interest of that person; or

(b) by an order of a court when it determines by such order that the disclosure of such information is necessary for the determination of issues and in the interest of justice in a matter before it; or

(c) in suits or legal proceedings between persons, where the disclosure of such information is necessary in the initiation of such proceedings or for instructing counsel; or

(d) in accordance with Section 13; or

(e) if it relates to statistical or other information of a person that could not reasonably be expected to lead to the identification of that person; or

(f) in accordance with the Regulations under Section 15.

(4) Any person to whom disclosure is made under this Chapter is prohibited from making further disclosure except as provided in this Chapter.

(5) Any person to whom disclosure under sub-section (3)(e) is made shall not use such information to identify the person to whom it pertains or present it in a manner whereby such identification is possible.

13. Partner Notification. — A healthcare provider who is a physician or a counsellor, may inform the partner of a person under their direct care of such person's HIV-positive status only when:

(a) the healthcare provider bona fide and reasonably believes that the partner is at significant risk of transmission of HIV from such person; and

(b) the HIV-positive person has been counselled to inform such partner; and

(c) the healthcare provider is satisfied that the HIV-positive person will not inform such partner; and

(d) the healthcare provider has informed the HIV-positive person of the intention to disclose the HIV-positive status to such partner; and

(e) such disclosure to the partner is made in person and with appropriate counselling or referrals for counselling.

Provided that the healthcare provider shall have no obligation to identify or locate the partner of an HIV-positive person.

Provided further that no criminal sanction or civil liability shall arise against a healthcare provider for the disclosure or non-disclosure, as the case may be, of confidential HIV-related information to a partner in accordance with Section 13.

Exception: The healthcare provider shall not inform a partner, particularly in the case of women, where there is a reasonable apprehension that such information may result in violence, abandonment or actions which may have a severe negative effect on the physical or mental health and safety of the HIV positive person, their children or someone who is close to them.

14. Duty to prevent transmission. — Every person who is HIV-positive, is aware of such status and, has been counselled in accordance with this Act or is aware of the nature of HIV and how it is transmitted, shall take all reasonable measures and precautions to prevent the transmission of HIV to others which may include adopting strategies for the reduction of risk or informing in advance any sexual contact or person with whom needles are shared of that fact.

Exception: There shall be no duty to prevent transmission, particularly in the case of women, where there is a reasonable apprehension that the measures and precautions may result in violence, abandonment or actions which may have a severe negative effect on the physical or mental health and safety of the HIV-positive person, their children or someone who is close to them.

15. Data Protection. — Every institution that records or stores HIV-related information of a person shall, within 180 days of the commencement of this Act, formulate and implement data protection measures in accordance with the Regulations, to ensure that such information is protected from disclosure.

Explanation: Data protection measures shall include procedures for protecting information from disclosure, procedures for accessing information, particularly in exceptional circumstances, provision for security systems to protect the information stored in any form and mechanisms to ensure accountability and liability of persons in the institution.

16. Prohibition on publication. — No person shall print, publish, broadcast or in any manner release HIV-related information or private information of a person without the informed consent in writing of such person.

CHAPTER V

PROMOTION OF STRATEGIES FOR REDUCTION OF RISK

17. Strategies for Reduction of Risk.

(1) Not withstanding anything contained in any law for the time being in force,

(a) the implementation or use of any strategy for reducing the risk of HIV transmission; or

(b) the provision or possession of any tool or paraphernalia for reduction of risk of HIV transmission, or any act pursuant thereto, shall not, in any manner, be prohibited, impeded, restricted or prevented and shall not amount to a criminal offence or attract civil liability.

Explanation: Strategies for reducing risk of HIV transmission means promoting actions or practices that minimise a person's risk of exposure to HIV or mitigate the adverse impacts related to HIV/AIDS including:

(i) the provision of information, education and counselling services relating to HIV prevention and safe practices;
(ii) the provision and use of safer sex tools, including condoms, lubricants, female-controlled barrier methods, and safe drug use paraphernalia, including clean needles, syringes, bleach and other appropriate sterilising equipment accompanied by information on their use;
(iii) drug substitution, drug maintenance and needle and syringe exchange programmes in accordance with sub-Section 2; and
(iv) the provision of any strategy for reducing risk of HIV transmission including those contained in (i), (ii) and (iii) above to persons below the age of 18 years who in the opinion of the provider of strategies for reducing risk of HIV transmission have the capacity to consent to such strategy.

Illustrations

(a) A, supplies condoms to B, a sex worker or to C, a client of B. Neither A, nor B, nor C can be held criminally or civilly liable for such actions or be prohibited, impeded, restricted or prevented from implementing or using the strategy.

(b) M, an intervention project on HIV/AIDS and sexual health information, education and counselling for men who have sex with men provides safer sex information, material and condoms to N, a man who has sex with other men. Neither M nor N can be held criminally or civilly liable for such actions or be prohibited, impeded, restricted or prevented from implementing or using the intervention.

(c) X, an intervention providing registered needle exchange programme services to injecting drug users, supplies a clean needle to Y, an injecting drug user who exchanges the same for a used needle. Neither X nor Y can be held criminally or civilly liable for such actions or be prohibited, impeded, restricted or prevented from implementing or using the intervention.

(d) R, an intervention programme for children living on the streets and K, a counsellor in a school, provide sexual health and safer sex information, education and counselling, material and small-sized condoms to S, a child living on the street and L, a student in school, respectively. Neither R, S, K nor L can be held criminally or civilly liable for such actions or be prohibited, impeded, restricted or prevented from implementing or using the intervention.

(2) No person shall implement a drug substitution or drug maintenance or needle and syringe exchange programme unless such programme is implemented in accordance with the Regulations.

(3) Any information obtained or maintained in records by a person implementing a drug substitution or drug maintenance or needle and syringe exchange programme or any other strategy for the reduction of risk of HIV transmission shall be considered to be private information for the purpose of Chapter IV of this Act.

(4) (a) No public servant, including a law enforcement official shall arrest or detain, or in any manner harass, impede, restrict or otherwise prevent any person implementing or using strategies for reduction of risk of HIV transmission in accordance with the provisions of this Act.

(b) A public servant who violates the provisions of sub-section (4)(a) shall be subject to misconduct proceedings under the relevant Act including the relevant Police Act and the report of such misconduct shall form part of the confidential records of such public servant.

6.3 NATIONAL POSITIVE PARTNERSHIP PROJECT: A CASE STUDY[3]

Mechai Viravaidhya

6.3.1 Proposed hypothesis

A nationwide 'Positive-Partnership Project' (PPP), preferably in a franchising model, that can reduce HIV-associated poverty and lessen stigma. This is to be done by providing NGOs with the funds to support partnerships between HIV-positive or HIV-affected persons and non-affected persons in order to start a local business. Public funding for this scheme would be dispersed to district or local-level authorities, in line with the HIV prevalence burden in various areas.

6.3.2 Theoretical Framework

Reduced income due to poor health and increased expenditures that result from AIDS increases the poverty burden by impoverishing affected families. HIV infections mostly occur among people who are in their most productive years, often resulting in the loss of family breadwinners. The disease affects the poor in greater numbers while at the same time increasing their poverty. An alleviation approach based on the economic empowerment of such affected persons and families has proved to be effective in three respects:

1. Participating in income-generating activities increases available resources for affected families.
2. The involvement of HIV-negative partners in the businesses helps create role models for the community, and act as HIV/AIDS advocates to reduce stigma.
3. Additional income can ensure sustained access to antiretroviral treatment and keep the person healthy, which helps them sustain income levels.

The scheme would, therefore, also enable persons to access treatment and care services that improve their health, prolong their lives and increase their productivity—which in and of itself mitigates the epidemic's impact.

6.3.3 Evidence

The approach has been successful in Thailand, and is documented as a UN Best Practice, where the Population and Community Development Association (PDA), a leading NGO, has provided resources to partnership pairs of HIV-affected and non-affected for starting small businesses. Each pair receives a loan of US$ 600 as seed money. The investment is usually sufficient to set up a small business, and a similar loan is then provided to the pair every 2-3 years. The program has a remarkable success rate. Over 80% of the loans are repaid (most of the remaining 20% of defaults are due to illness or death of the HIV-positive person).

6.3.4 Generalizability and coverage

As a nationwide scheme, PPP has the potential to achieve wide coverage.

6.3.5 Possible adverse outcomes

Interruption of funding leading to collapse of business in its initial phase

[3] Presented at the Candidate Policy Options workshop by Dr Mechai Viravaidhya, Chairman, Population and Community Development Association

6.3.6 Feasibility

This is based on an average cost that can be estimated as either US$ 250 per partnership (including a US$ 200 loan to a partner and another 25% for administrative and training costs) or as high as US$ 600 per partnership in cases where the HIV-positive person requires extra funds for ART.

Given that this scheme would follow the model program in Thailand, the loan would be repaid, thus providing funding for future positive partnerships as well. Couples with proven creditworthiness can graduate from the PPP and go on to apply for regular bank loans.

The approach is politically acceptable because it functions in support of the poverty reduction (also the United Nations Millennium Development Goals).

On the operational front, governance weaknesses, sporadic corruption and shortages of capacity among local NGOs would need to be addressed. One attractive option, which is yet to be attempted, would be to steer funding for such a scheme through the corporate social responsibility arm of a financial institution or business group, which would then channel the funds to NGOs.

6.3.7 Recommended policy

Each government in Asia should establish and ensure support for a compulsory economic empowerment-based impact mitigation policy based on mandatory partnerships between HIV-negative and HIV-positive or HIV-affected persons. We can also consider extending new partnerships to other marginalized groups such as the disabled, widows, orphans, the elderly, ex-prisoners, and former sex workers.

6.3.8 Reference

UNAIDS (July 2007), The Positive Partnerships Program in Thailand: Empowering People Living with HIV. UNAIDS Best Practice Collection.

Authors contributing to the Technical Annex[1]

Anita Alban, PhD is a leading health economist based in Copenhagen and has worked extensively on resource need, cost effectiveness, unit cost of interventions and socio-economic impact related to AIDS, both for Asia and at global level.

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Eric Cunningham is a Master's student at the University of Hawaii who assisted in collecting and organizing papers and documents and in extracting behavioral indicators and key information from that extensive database.

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1 This is not an exhaustive list of all those who contributed to the Technical Annex

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