

Chapter I

Introduction



1.1 Background and Rationale

The epidemic of Human Immunodeficiency Virus (HIV) infection has spread worldwide, ignoring national boundaries as well as divisions of age, race, gender, class, sexual orientation, religion and culture. It has become truly global in scope, sparing none of the continents. It can be called our modern pandemic, affecting both industrialized and developing countries.

In the 1990s AIDS has emerged as one of the most serious diseases in the developing world, with consequences which will extend beyond its impact on the health sector.

As of January 1992, 416,681 cases of Acquired Immunodeficiency Syndrome (AIDS) had been reported to the World Health Organization (WHO), with almost one third of these in Africa, although reported cases are generally considered to be an underestimate due to reporting lags, and limited coverage of surveillance systems (Hanson, 1992). WHO estimated that already 1 in every 250 adults in the world is infected, most of them in the developing world. By mid-1994, a cumulative total of over 17 million men, women and children globally were estimated to have contracted HIV infection. WHO estimated that every 24 hours more than 6,000 people become infected. Among them, 2,000 people will be in Asia. By the year 2000, a further 14 to 24 million people worldwide may acquire HIV infection, bringing the total to 30-40 million, and the epidemic is projected to continue well into the next century; 95% of all new HIV infections will be in the developing world. And within 10 years of being infected with the HIV, more than 67% of people are expected to develop AIDS and die within the next 2 years (Geneva Report, 1994).

Worldwide, the number of individuals infected with HIV is expected to increase, and by the year 2000 it is expected that the largest number of new cases will be found in Asia. The center of gravity of the HIV/AIDS epidemic is shifting from Africa to Asia. WHO estimated that about 3.5 million people have been infected with HIV in Asia, and the

cumulative infections in the region are expected to quadruple to more than 10 million by the year 2000. Currently there are two primary foci of HIV/AIDS in Asia: (a) India; and (b) Cambodia, Myanmar and Thailand. It is anticipated that the greatest epidemics of HIV/AIDS will occur in the world's most populous developing countries: China, India and Indonesia. At present, the largest number of cases are found in India, Thailand and Myanmar (World Bank, 1996).

HIV infections are increasing more rapidly in South-East Asia than anywhere else, and extensive spread of HIV infection was not documented until 1988 in this region therefore this is the only area of the world where WHO cannot predict any plateauing of the infection rate. According to the report from SEARO (1995), the estimated HIV positive cases in Myanmar is 150,000 (as of May 1995) (See Table 1.1). It is one of the three top HIV prevalent countries in the South East Asian Region. In the report, it is said that the epidemic of HIV has just begun. It means that these countries are going to meet many problems in the near future.

Table 1.1 : Situation of HIV/AIDS in SEA Countries (as of May 1995)

Country	Reported AIDS cases	Estimated HIV cases
Bangladesh	1	< 20,000
Bhutan	0	< 300
D.P.R. Korea	0	< 1,000
India	1,108	1,500,000
Indonesia	69	34,000
Maldives	2	< 100
Mongolia	0	< 200
Myanmar	475 *	150,000
Nepal	35	< 5,000
SriLanka	48	< 1,000
Thailand	17,844	500,000
Total	19,582	> 2,000,000

Note : * (as of December 1994)

Source : SEARO Report (1995)

In Myanmar, according to the annual reports from the DOH tests for HIV infection were first carried out in 1985. No one was detected as HIV positive until 1988. The first HIV positive case was detected in 1988. Since then, through ad-hoc surveys conducted in various groups

and places around the country, an alarming picture of rapidly increasing spread of HIV infection has been observed.

According to the sentinel surveillance reports, the highest infected group is seen in the intravenous drug users (IDUs) followed next by the Sexually Transmitted Diseases (STD) patients and Commercial Sex Workers (CSWs). The epidemic of HIV infection was first seen in the IDUs, with sharing of contaminated needles and syringes playing a major role in the transmission. Now, with the rise of HIV infection occurring in the STD patients and CSWs, sexual transmission is expected to play a major role in the coming years.

The number of HIV infected persons has been increasing year after year. As of 30 June 1995, 10,421 persons were found to be HIV positive. Among them, 636 were reported as AIDS. The male to female ratio is 7.2 : 1 among full blown AIDS cases as of June 30 1995 (DOH, 1995). Given the current rate of increase in the prevalence of HIV infection in Myanmar, it is anticipated that the number of persons with AIDS will rise sharply within the next 5-10 years. As in most countries, these data do not represent the actual magnitude of HIV/AIDS prevalence in the country as a whole. Although the first case of full blown AIDS case was reported in 1991, it can be clearly known that HIV infection has already spread in Myanmar since the early 1980s since the progression rate of HIV infection to AIDS is about 10 years on average. In other words, the current number of adult AIDS cases reflects the HIV infections acquired a decade ago.

Table 1.2 : Reported AIDS Cases by Age Group (as of 30 June 1995)

Year	0-4	5-14	15-19	20-29	30-39	40-49	50-59	60+	Other	Total
1991				3	2	1				6
1992				21	15	5				41
1993			2	57	64	15	2		2	142
1994	2	1	2	97	128	45	5	4	2	286
1995	1		1	58	81	15	5			161
Total	3	1	5	236	290	81	12	4	4	636

Source : DOH, Myanmar

Prior to 1992, data regarding HIV/AIDS in Myanmar were obtained mainly through surveys conducted in certain areas where activities relating to high risk behaviors are seen to be occurring. The sentinel surveillance program was started in 1992 in 9 townships. At

present sentinel surveillance activities are being carried out in 19 townships.

The number of full blown AIDS cases reported by Regions in Myanmar is depicted in Table 1.3 and Appendix 1. The number of HIV positive cases detected by year is shown in Table 1.4.

Table 1.3 : Number of AIDS Cases by Regions (as of 30 June 1995)

Regions (States and Divisions)	Number of Cases
Yangon Division	308
Thanintharyi (Tenasserin) Division	174
Shan State	94
Mandalay Division	20
Kachin State	13
Sagaing Division	11
Mon State	7
Bago (Pegu) Division	4
Ayeyarwaddy (Irrawaddy) Division	2
Kayin (Karen) State	2
Yakhine (Arakan) State	1
Total Cases (Reported)	636

Source : DOH, Myanmar

Table 1.4 : HIV Positive Cases Detected by Year (as of 30 June 1995)

Year	Number of Cases
1988	1
1989	323
1990	1,034
1991	2,152
1992	1,641
1993	2,001
1994	2,361
1995 (June)	908
Total Cases	10,421

Source : DOH, Myanmar

In Myanmar, HIV seropositivity was mainly found in the 20-39 age group comprising 80 to 85 % of the total positives and about 95 % was found to be in 20-49 age group. In other words, HIV positive cases have mostly been amongst the most productive age groups of both sexes leading to depletion of the labor force, adverse impact on productive and social sector and loss of military strength. Apart from these detected HIV positive cases, there are likely to be many more hidden cases. Most of these HIV infected persons will become full blown AIDS cases sooner or later. And they will create a huge economic burden for the country.

Essentially, the economic burden of any disease is viewed as comprising three elements: the direct cost borne (predominantly) by the health care sector in treating the disease; the indirect cost in lost productivity owing to morbidity and premature mortality; and the intangible costs in pain and suffering caused by the disease. Traditionally health economists estimate the financial burden of a disease by assessing direct, indirect and other intangible costs borne by the person, family and society. Direct costs include the treatment provided by the health centers and hospitals; additional hospital beds and equipment such as gloves and disposable syringes that may be needed; the need to re-train staff in AIDS care and prevention; the cost of treating increasing numbers of patients with TB and other secondary infections; blood screening; and prevention and education campaigns. Indirect costs include the lost earnings of the patient; the cost to the relatives of hospital care; reduced savings for investment; decreased assets such as jewelry, livestock, etc. which are sold off; and indebtedness. In addition, relatives may have difficulties in finding work because of discrimination, and poverty may force families to withdraw their children from school. The reduced national labor force and possible reduction in tourism and investment are also considered. Intangible costs include social discrimination, and the impact of the breakdown of the traditional family structure (Puntularp and Paul, 1995).

In this study, provider (government) direct cost for the treatment of HIV/AIDS patients and the prevention of the spread of HIV infection from HIV positive persons is considered as the economic burden of HIV/AIDS. Since this study is the first economic study about the cost of treatment and prevention of HIV/AIDS in Myanmar and because of the time constraint, this study emphasizes only on the provider perspective. The cost of prevention will only focus on the provider cost which is related to activities which are directly concerned with HIV positive persons.

It can be clearly seen from the evidence mentioned above that HIV/AIDS will be one of the most serious diseases in the next few years. It can also become a leading killer disease. Like in some other developing countries, in Myanmar it has been totally unknown what the costs of treatment and prevention of HIV/AIDS patients amount to. Without a clear picture of the real costs involved, it is almost impossible to decide how best to use available resources for HIV/AIDS patients, while minimizing the diversion of resources from other parts of the health sector.

There are a number of reasons why there is a need to study the economic burden of HIV/AIDS.

There is at present no cure, no effective vaccine: most people infected with HIV will probably die, and the long incubation period of HIV infection means that the impact of existing levels of infection will continue in the future. The number of persons already infected is large, and a significant portion of the Ministry of Health (MOH) budgets may have been already spent on the care of persons with HIV/AIDS.

A rapid increase in reported AIDS cases in the last few years and the fast rising number of persons found to be HIV positive have raised such great concern among policy makers in recent years that HIV/AIDS cannot be considered merely as a health issue. It could have a substantial impact on social and economic development of the country. This is due to the fact that AIDS affects adults during their most productive years and it is 100 % fatal. Furthermore AIDS does not replace other diseases but adds to their number.

HIV/AIDS is now appearing in all different social classes in the country. AIDS cannot be compared to diseases such as cholera and malaria which currently claim the lives of more people. AIDS reaches further into society than these diseases because (a) it affects people during their most productive years; in which they typically responsible for the care and support of both children and elderly parents and they would normally be least likely to require medical care; (b) transmission of virus generally goes unrecognized; and (c) no cure is available.

A high prevalence of HIV/AIDS threatens the economy, particularly sectors that are highly labor intensive or have large numbers of mobile or migratory workers, such as agriculture, transportation and mining. It has added a heavy burden to health and social sectors.

Financial issues have also become critical across the spectrum of the health care system for HIV/AIDS. The financial implications of the direct costs are considerable; and the indirect costs are harder to measure, they too could adversely affect the economic growth rate of the country. The costs of lost production due to AIDS have been estimated to be 10 to 20 times greater than direct medical care costs.

The government is becoming concerned about the economic consequences of AIDS in the health care sector. Within the health care sector the increase in the number of confirmed AIDS cases has resulted in additional resource consumption in hospitalization and drug therapy. In addition to clinical services for HIV infected patients, costs arise from providing individual counseling and information programs for members of high risk groups, from providing appropriate protection from infection for health care staff, from screening and heat treatment of blood and blood products, and from mounting public health education programs.

Therefore policy makers, planners, health administrators and economists need to know:

1. how many people will become ill?
2. when will they become ill, and how long the illness will last?;
and
3. what will be the likely economic burden of HIV/AIDS,
especially on the health care sector?

Given that in the absence of a cure or effective vaccine, it is clear that AIDS will have a substantial economic and social impact. HIV not only begets personal tragedies but also societal disaster as well. Unlike most infectious diseases which strike down the very young and the very old, HIV/AIDS strikes a deadly blow at men and women in their most productive years. Because of AIDS, the labor force in some countries has been drastically reduced, and much needed professionals - teachers, doctors and nurses, and so on - are in short supply. In some areas, agricultural production has been disrupted. The communities in which many were infected with HIV would have a significant economic burden inflicted on them.

As HIV/AIDS has become a global health crisis; Myanmar, like all other countries in the world, is now having to face the problems of HIV/AIDS.

Up until now, there is no study about costing of direct medical care costs and costs for prevention of the spread of HIV infection from HIV positive cases as well as predicting HIV/AIDS cases in Myanmar. It is very essential to demonstrate the magnitude of the economic burden of AIDS, to justify budgets for prevention efforts, and to plan for the health care of AIDS patients.

1.2 Scope of the Study

In this study only the provider (government) perspective is included and the accounting cost of prevention and treatment of HIV/AIDS cases is emphasized for the calculation of economic burden. Several other costs caused by HIV/AIDS are not included in this study such as the costs of health education for prevention of HIV infections for the whole society, the costs of death (funeral services, mourning rituals), cost of caring for orphaned children, replacement costs for the skilled persons who die of AIDS. This is because of time constraints in preparing the thesis and the limitation of available data. The study aims to show the economic burden of prevention and treatment, for those who are already infected with HIV, incurred by the government in the next 5 years. The ultimate aim is to motivate and help policy makers and decision makers to pay more attention to preventive strategies and to take solid and immediate action to reduce the spread of the HIV/AIDS epidemic.

1.3 Research Questions

Primary Research Question

What is the economic burden of HIV/AIDS in Myanmar in the next 5 years?

Secondary Research Questions

1. What are the baseline, medium and high intervention scenarios¹ of HIV/AIDS for the next 5 years in Myanmar?

¹ A scenario is an outline for any series of events, real or imagined.

- Baseline intervention scenario means scenario constructed by the present interventions against HIV/AIDS leading to the situations in which resulting HIV prevalence growth rate is 3.0% and years to reach constant growth is 10 years.
- Medium intervention scenario means scenario constructed by some more interventions against HIV/AIDS leading to the situations in which resulting HIV prevalence growth rate is 2.0% and years to reach constant growth is 7 years.
- High intervention scenario means scenario constructed by the some more interventions against HIV/AIDS leading to the situations in which resulting HIV prevalence growth rate is 1.0% and years to reach constant growth is 5 years.

2. How many HIV positive cases and full blown AIDS cases will there be in the next 5 years?
3. What are the components of cost in each intervention activity in each scenario each year?
4. How much is the total cost for each scenario each year?
5. How much is the total cost for HIV/AIDS prevention and control for the next 5 years?

1.4 Objectives

General Objective

This study aims to estimate the economic burden of HIV/AIDS in Myanmar for the next 5 years

Specific Objectives

1. To identify the baseline, medium and high intervention scenarios of HIV/AIDS for the next 5 years in Myanmar
2. To predict the total number of HIV positive cases and full blown AIDS cases for the next 5 years
3. To identify the components of cost for each activity in each scenario
4. To calculate the total cost for each scenario each year
5. To estimate the total cost of HIV/AIDS prevention and control for the next 5 years

1.5 Benefits of the Study

It is expected that this study will highlight the huge burden of HIV/AIDS for the government to combat this disease and convince the decision makers and policy planners to put more emphasis on prevention and to find alternative ways of financing for the care of AIDS patients. Other possible benefits would be:

a. The costing module explored in this study can be used not only for the calculation of cost of treatment of HIV/AIDS patients but also for other diseases. This costing module is meant for calculation of unit cost or average cost per unit of output of hospital care (i.e. per patient or per patient day or per admission or per visit etc.).

b. Knowledge of Epimodel can also be applied in future studies for projection of HIV/AIDS cases, especially for pediatric cases and the

cost of treatment of AIDS with tuberculosis (TB) as Epimodel includes a child module and a TB module.

c. Unit cost of different cost items can be compared and the percentage of the cost of each item to the total cost can also be calculated and this can help the health planners to find the ways to allocate the resources efficiently.

1.6 Limitations of the Study

As this study is a methodologic one, the results obtained from the study can not be quoted or cited and it can not reflect the real situation. The other possible limitations of the study would be:

a. Since this study emphasizes the need to convince the government to justify the budget for prevention and control of HIV/AIDS and to find alternative ways of financing for this program, the estimate of the economic burden of HIV/AIDS includes only provider (government) cost. Consumer and the society costs are not included but these costs can be much more than the provider costs.

b. There are still limitations in Epimodel as projecting the future spread of HIV is very difficult, since HIV/AIDS is very much related to socio-economic status and behavior.

c. Time constraints and limited data will also reduce the value of the study.

1.7 Organization of the Study

This thesis consists of 6 chapters. In chapter I, the situation and the problems of HIV/AIDS in Myanmar, Asia and the world are described. The reason to study the economic burden of HIV/AIDS, the scope of the study, the research questions and the objectives of the study, possible benefits and limitations of the study are also presented in this chapter. Chapter II describes some relevant information about the country profile of Myanmar. Chapter III presents some issues on epidemiology and natural history of HIV/AIDS, modeling for projection of HIV/AIDS, costing methodology and studies about projections and costing of HIV/AIDS. Chapter IV discusses research methodology, Data analysis, interpretation and some discussions on the results are described in Chapter V. Finally, discussion, conclusions and policy recommendations, and recommendations for future studies are presented in Chapter VI.