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Original Article

## Economic Impact of HIV/AIDS Mortality on Households in Rural Thailand \*

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### Introduction

The number of people infecting from HIV virus as reported to the Ministry of Public Health is increasing steadfastly. Progressive number of AIDS cases as well as people with HIV show the distribution of reported cases of AIDS by year of diagnosis. It was reported the cumulative number of AIDS cases is 15,665 in 31 January 1995. More than 80% (87.09%) of the AIDS cases are in the range of 15-44 years. Male to female ratio is 7.5 to 1. More than 60% are working as common laborer and agricultural workers. About 50% of the reported cases are from the upper northern part of Thailand: Chiangmai, Chiangrai, Lampang, Payao and Lamphun<sup>(1)</sup>.

HIV/AIDS has been realized as a serious, fatal disease affecting a relatively young people and has a great economic impact. An estimate of people with HIV infection and people with full

blown AIDS as made by the National Economic and Social /development Board, the AIDS Division: Ministry of Public Health, the Thai Red Cross, the East-West Center: University of Hawaii, the Institute for Population and Social Research: Mahidol University, based on the assumption that people will not change their behavioral patterns between the years 1993 and the future date specified, shows that the accumulated total of people with HIV infection in the year 2000 will be 1,379,189 while the accumulated total of people with full blown AIDS will be 477,706. The total number of deaths resulting from AIDS up until the year 2000 will be 444,333. An estimate has also been made of the number of babies with full blown AIDS and infected with HIV virus through their mothers. It was found that there will be a total number of 62,783 babies infected with HIV virus through

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their mothers and a total number of 47,417 babies with full blown AIDS in the year 2000<sup>(2)</sup>.

The majority of people suffering from HIV/AIDS fall within 15-44 years age group, which is recognized as the work age period, and include both male and female at a ratio 7.5:1. In that event that people with HIV infection and with full blown AIDS is the head of the household or main income earner for the household and becomes ill and is unable to be self-reliant or work normally then the household's main source of income is lost. This becomes a burden of the household who have to care for the person and accept responsibility for medical and other expenses which are very high beyond what the household, especially the rural household, can bear. Furthermore, the relatives who take care of the patient are required to stop working which means loss of another source of income. The household have to borrow money from neighbors or sell their assets. Members of the household are required to turn to other professions in order to find money to cover household expenses. Those households raising small children or older relatives. School age children are required to leave school at an inappropriate age so that they can work and earn an income to help their household or relatives infected with HIV virus/full blown AIDS or take care of younger siblings and the elderly who are unable to take care of themselves<sup>(3)</sup>.

Unfortunately, the research study or data on the economic aspects of HIV/AIDS are rather scarcities. However, there is hardly any evidence concerning the economic and financial impact on the household of the HIV/AIDS patients despite the fact that the patients' household is the first and the most immediate unit to experience the consequences of HIV/AIDS<sup>(4)</sup>.

### Objective

The main objectives of this research were to identify and assess the economic impact of HIV/AIDS related illness and mortality on (rural)

households in Chiangmai, Thailand and to analyze how the (rural) households that experienced people with AIDS cope economically with the situation.

### Methodology

It is important to know the data (nature, availability and quality) including with extent of economic impact of HIV/AIDS on the household, since it is the first and immediate unit to experience the burden caused by infection of the household member.

A sample of rural Thai household in Chiangmai is selected, interviews were carried out with 116 rural households which had recent experience of an HIV/AIDS death. The selection of households was based on routine voluntary reporting records of HIV/AIDS related deaths from Provincial Health Medical Office, Ministry of Public Health that occurred during 1992-1993. From these records made available to researchers, households were first grouped by their district of origin. Five districts (Mae Rim, San Sai, San Kam Pang, Hang Dong and Fa-ang) with highest number of reported HIV/AIDS related deaths were then selected and their households classified by subdistrict of origin which only subdistricts with at least 3 HIV/AIDS related deaths were chosen for the study. By this criteria, the households were spread across 27 subdistricts (Tambons) in Chiangmai. After that, 116 households with recent HIV/AIDS death in 27 subdistricts of 5 major districts were interviewed by a local public health worker in charge of each subdistrict. A senior public health worker at the district level would supervise and coordinate the survey process in each district. Altogether 28 enumerators, 5 district coordinators and 1 provincial coordinator were employed to conduct this survey during March 1994 with two full days training session on the questionnaires and the interviewing method. Since it was expected that during the interview period, our enumerators might come across the problem of non-cooperation from households, or could

not find the prior selected target households, a list of substitute households was therefore prepared for our enumerators.

Three types of household samples were randomly selected from 1) 116 records of households with recent experience of HIV/AIDS mortality that occurred during 1992-1993, 2) 100 records of households with recent experience of non-HIV/AIDS mortality that occurred during 1992-1993 as control group and 3) 108 records of household with recent experience of no death during the period 1992-1994 in the same community (subdistricts) by the enumerators. In addition, to clearly detect the economic impacts of HIV/AIDS on the households, only households with death from HIV/AIDS and non HIV/AIDS of the working aged members will be selected for the study.

The structured questionnaire was used as our main survey tools by interviewing the household head. The data used in the study was cross-sectional and retrospective type. The socioeconomic information were collected for examples: Household socioeconomic background data, health history, migration history/recent migration, work history, causes of death in households, financing of illness, perception of the children and community leader, consumption pattern, children education investment, support of household dependents: Orphans and the elderly, etc. A few open-ended questions were asked to obtain additional qualitative information. Household children were also interviewed to validate the information which obtained from the adults.

A pretest of these questionnaires was carried out in 15 households of one district in Chiangmai province. Revision of these questionnaires was also undertaken before actual interview took place.

The studied data was analyzed by using the descriptive statistics. The standard package computerized program was designed to present in frequency such as number, percentage, Means, etc. Multivariate comparison was also used to

analyzed some specific impact of HIV/AIDS mortality on households with other non HIV/AIDS household.

## **Results and Policy Implications**

### **Socioeconomic Status of Households Experiencing HIV/AIDS Mortality<sup>(5)</sup>**

The study found that the average yearly household income of rural households which had experienced an HIV/AIDS illness and death was 66% of households which had also experienced illness and death, but not from HIV/AIDS; it was equal to 53% of the income of households which had not had a death in recent years. The mean household income of these HIV/AIDS households (HIV/AIDS related death experienced households) was 55,955 (\$ 2,238) per year which was equivalent to average annual income of households in the north. In term of assets holding, nearly all of these households own a house and have land, although the size of land owned may not be very large. One third of the households also have saving. More than half of the households have modern amenities like television and refrigerator. Some though a small proportion also own a car or a truck. About three fourths of the HIV/AIDS death experienced households admitted having debt of an average of 37,921 Baht (\$ 1,516). Most of the debt was used for daily consumption and health care of household members. A few households also used their debt for business investment.

However, the HIV/AIDS related death households had the smallest proportion of heads engaged in white collar jobs (5%) as compared to the non HIV/AIDS related death households (7%) and the non death households (18%). The no death also had a sizable proportion working in the governmental sector (10.2%) as compared to 1.7% among the HIV/AIDS related death households and none in the non HIV/AIDS related death households. The proportion of HIV/AIDS related death households that didnt have certain assets such as a house, saving, motor vehicle,

refrigerator, television, is also larger than the non HIV/AIDS related death and no death households.

***Policy on Welfare Assistance Program for the Poor and Needy***

*AIDS will further impoverish already poor households and turn lower middle income households into poor households. As the poor generally lack collateral, they often have to turn to informal sources of credit with high interest rates. Families suffering from "health shock" and hardship need assistance, in particular those families where the main breadwinner is infected.*

*The government should - as part of its poverty reduction program - consider a special welfare assistance package in the form of food, clothing, or even cash transfer for the most needy. Special subsidies or fellowships for children of HIV/AIDS affected families unable to afford the cost of schooling should also be considered.*

*A special fund, charging no or very low interest, could be set up to provide credit for poor and needy households. They could borrow money to pay for medical treatment and household needs.*

*Currently, the Ministry of Labour and Social Welfare has a cash assistance program to low wage enterprise workers who are infected by HIV/AIDS and can no longer work. This program is carried out in cooperation with counselors for HIV/AIDS patients in governmental hospitals. A few NGOs also offer similar assistance in specific localities known to have HIV/AIDS widespread.*

**Background Information on Illness and Care of the HIV/AIDS Patients Before death**

The majority of the HIV/AIDS deceased contacted the HIV virus from their visits to commercial sex workers (35%). Injecting drug users narrated for a small proportion of the cases (2.6%). Other causes like engaging in commercial sex worker (1.7%), spouse transmission (2.6%) also narrated for very few cases.

Most of the HIV/AIDS patients were getting ill for the duration of 8 months on average before

death. About 5% died almost immediately after less than one month illness indicating the stage of full blown AIDS, while 12% took longer than one year before death. The longest duration of illness was 5 years but this narrated for only few cases.

More than one method of health care were utilized by households for HIV/AIDS patients. Government hospital was used by most household (97%). Private clinic, local health centers, buying drug from drug store and private hospital were other types of care used by several of the households. It is noted that about 20-23% of the patients were also treated by traditional doctor and traditional medicine (herb). Despite various methods of health care used by households for HIV/AIDS patients, the most frequently used method for most households was attending government hospital. (69%)

About the length of health care, each patient spent about 7 months on average on health care for HIV/AIDS. Two out of the total died of the deceased without care while three were under treatment for more than two years. The longest period of treatment was 3 years. During the period 6 months before death, these patients needed about 3 times (per month) on average of outpatient care at the health care institutions. About 15% of the patients needed outpatient care more than 5 times a month. For those who needed in patient care, the least number of days spent at in-patient ward were 6 days and at the most 7 days on average. However, there were a few cases who spent from 30 to 60 days as in patients for treatment.

However, the comparison of HIV/AIDS and non HIV/AIDS illness and care should be considered with the proportion of non HIV/AIDS patients who were ill for less than 1 month before death was about 35% as compared to only 5% of the full blown AIDS cases. But among the patients who needed medical care and treatment, the HIV/AIDS cases had on average a shorter period of medical care before death than the non HIV/AIDS cases (7 months vs. 9 months) and the visits

of HIV/AIDS cases to hospitals as an out patient during the period 6 months before their death were slightly more frequent than non HIV/AIDS cases. (3 time vs. 2 time per month). The number of days spent at least as an in-patient care of HIV/AIDS cases was also slightly longer than the non HIV/AIDS cases (6 days vs. 5 days).

### **Health Care Policy**

*HIV/AIDS patients' rising demand for health care services at government hospitals has led to demands for increased government spending on HIV/AIDS prevention and care. Other areas are also competing for the health budget, and the government needs to seriously re-consider health financing policy and budget allocation.*

*Shortage of health manpower in government hospitals, especially physicians and nurses, is a serious issue in Thailand. Increasing demand for health care services by HIV/AIDS patients in government hospitals intensifies the problem. Government policy on training health workers, compensation and welfare benefits needs to be considered seriously. To lessen the demand for hospital care services for HIV/AIDS patients which are costly to both the service provider and the consumer, a home - based and community based care system should be considered.*

### **Economic Impact of HIV/AIDS Illness and Mortality on Households**

The economic impact on households to be assessed in this study covers the direct costs or out of pocket expenses of households from having a member falling ill and died of AIDS or AIDS related diseases. These expenses ranged from medical care cost before death, travel cost related to transporting the HIV/AIDS patient to have medical care as well as funeral expenses after death. In addition the indirect costs of illness and death were also assessed covering income foregone of other household members who had to leave their regular work to take care of the patient during illness, income foregone of the sick and

deceased person, income foregone from loss of household production caused by lost labor supply in the family as well as time lost of other member of the households. Other related socio economic impact such as orphan and elderly care problem, social stigmatization and discrimination against HIV/AIDS patients and their family were also examined.

In order to clearly detect the impact of HIV/AIDS illness and death on households, similar impact of non HIV/AIDS illness and death on other households in the same community was also assessed for comparison.

### **Direct Costs**

#### **Cost of Medical Treatment for HIV/AIDS Illness on Households Before Death**

On average, each household spent about 24,344 Baht (app. \$ 974) on medical treatment for each HIV/AIDS patient. Though this amount seems not very much but it is equivalent to approximately half of average total yearly household income. Four of the total cases spent over 100,000 Baht (\$ 4,000) for treatment. The largest amount spent was 150,000 Baht (\$ 6,000).

Of all this total treatment expense, the largest amount was payment for out-patient and in-patient care at the hospital: 11,025 Baht on average (\$ 441). The second largest amount was on drug purchase at drug stores i.e. 6,051 Baht (\$ 136), followed by private clinic visit of 3,406 Baht (\$ 136), traditional healer visit 2,160 Baht (\$ 86), traditional herb purchase 1,268 Baht (\$ 50) and local health care center treatment 456 Baht (\$ 18).

It is also interesting to note that each traditional healer visit costed much higher than a private clinic visit i.e. 687 Baht vs. 254 Baht. Moreover each drug purchase at the drug store was quite high, indicating that HIV/AIDS treatment is very costly to an ordinary household in rural Thailand.

Comparing HIV/AIDS treatment to non HIV/AIDS treatment, it can be noted that it was more costly for the household to care medically for an HIV/AIDS patient. On average, the total expense for care of an HIV/AIDS patient was about 2,268 Baht (\$91) or about 10% higher than that of a non HIV/AIDS patient. Total expenses paid on drug, traditional medicine, traditional healer visit, and health care center visit, all indicate that HIV/AIDS illness is more expensive for households to treat than non HIV/AIDS illness.

#### Travel Cost

Taking HIV/AIDS patients for treatment also incurred cost to households. On average, each trip costed 178 Baht (\$7). Frequency of trips for medical treatment was approximately 3 times per month. Total travel expense incurred on households to take each HIV/AIDS patient for treatment until death was 1,571 Baht (\$63).

On average, household expenses paid for travel during illness until death between HIV/AIDS related death households and non HIV/AIDS related death households was not much different with the latter slightly lower than the former owing to fewer visits for care.

#### Funeral Cost After Death

Most households arranged between 3-4 days of funeral service for the HIV/AIDS patients which is a common practice in local area of the North. It is noticeable that 10 out of the deceased did not have a funeral service arranged for them, while the other three had only on day service. This situation may be caused by discrimination against the HIV/AIDS victims and their families as well as the lack of money to pay for funeral cost.

On average each household spent about 38,440 Baht on funeral service for the HIV/AIDS deceased. This amount is considered moderate by local standard in rural area of the North. It is also observed that about 17% of the deceased had their funeral service arranged at the cost of more

than 50,000 Baht each (\$2,000). The largest amount spent by one household was 120,000 Baht (\$4,800) which is very high even by the Bangkok standard.

Households with non HIV/AIDS death appeared to spend more money on funeral rituals than the HIV/AIDS death households. The duration of rituals was almost twice longer (6 days vs. 3 days) since they had no problem of community discrimination. The amount spent on these activities was about 20% higher than the HIV/AIDS related death households. (46,850 Baht vs. 38,440 Baht)

#### Indirect Costs

##### Income Loss for Taking Care of HIV/AIDS Patient by Other Household Members

Taking regular care of the HIV/AIDS patients at home as well as taking them for treatment at various health care institutions involved time loss and income loss from work for some of the household members. About 68% of the household members responsible for taking the patients for treatment indicated a loss of income due to leave from work. For most of these members, an all day leave was needed and an average of 121 Baht income per day (\$5) was lost.

Similar loss was experienced by non HIV/AIDS death households, but on average, the amount of income loss for this group was slightly lower than the HIV/AIDS group due to less number of medical visits.

##### Income Loss from Illness and Death of a Member

During the period of illness and medical treatment regular income earned by the sick members were lost by households while health care expenses increased. However, after death, health care expenses of household are generally reduced while income loss still prevails.

On average, family income of the HIV/AIDS death households was reduced by 3,875 Baht (\$ 155) per month. This is in line with the majority of our studied cases who were engaged in laboring work. This amount was equivalent to a minimum wage of one months work (26 days) at that time. About 5% of the deceased earned more than 10,000 Baht a month (\$ 400) which is considered quite high by rural standard.

Apart from the main job, about 14% of the deceased also held supplementary work before illness and death. Their supplementary income was approximately 2,175 Baht per month (\$ 87) raising the total income loss for their family to 6,050 Baht per month (\$ 242) which is not a small amount by rural standard in the North.

Income loss experience of the non HIV/AIDS death households was somewhat smaller than the HIV/AIDS cases. Average monthly income lost from regular work was slightly lower for the non HIV/AIDS households but supplementary job income lost was only half of the HIV/AIDS cases. Altogether income loss of this group averages 4,655 Baht per month (\$ 186) or 76% of the HIV/AIDS group.

#### **Time Lost**

Apart from income loss caused by some household members having to take leave from work to take care of the HIV/AIDS patients, there were also some other household members who did not have regular income, but had to spend time taking care of the patient too. They were for instance children who had to take leave from school for half a day or for the whole day, family workers who took time off from unpaid family work, causing less labor for family production.

The amount of time lost on average was 2 hours 20 minutes waiting time for each treatment at a treatment center, not including traveling time to and from the health care institution.

Non HIV/AIDS death households also had similar experience of time loss but the average

amount of waiting time for each treatment appears much shorter for the non HIV/AIDS households (1 hr. 40 min.). It is possible that discrimination against the HIV/AIDS victims even among medical treatment providers has kept the HIV/AIDS patients to wait much longer compared to other patients.

#### **Impact on Family Labor Supply and Family Production**

The proportion of HIV/AIDS households engaging in family production was about 25% of total households. Agriculture was the predominant activity followed by services, manufacturing, trade and construction.

Serious impact on household production due to lost labor supply from death of a member was experienced by one third of these households. The size of such impact on production was almost 50% causing a serious decrease in household income by almost half. (47%)

As for the non HIV/AIDS death households, although a slightly greater proportion of households (41%) with family production felt a serious impact from death on their labor supply and production level, the size of such impact was almost the same as that experienced by the HIV/AIDS death households. However, the proportion of the non HIV/AIDS death households who felt their income was seriously affected by this production loss (22%) was slightly lower than the HIV/AIDS group and the size of income reduction was also slightly smaller. (45%)

#### **Policy on Labor Shortage**

*There is already a growing concern that Thailand is moving towards a labor shortage economy, even without HIV/AIDS. The reduction of the household labor supply due to HIV/AIDS, the employment of substitute labor, combined with increasing deaths for HIV/AIDS among labor and agricultural workers could lead to a shortage of hired labor in the community.*

### Other Socio-Economic Impact

#### Orphans

Orphan in our study were referred as young children whose father or mother or both died from a deceased. In the HIV/AIDS death households, there were altogether 48 such orphans, of which 30 (or 63%) were taken care of by a living parent. The rest 18 (37%) became the burden of other extended family members (31%) the community and the society (6%).

Households with non HIV/AIDS death experienced more number of orphans (69) due to a larger proportion of the deceased in this group were married men or women. Forty three of these orphans or 63% were also taken care of by their still living parent while 31% were shouldered by their extended family members, and 4% by the community. These proportions were not much different from the experience of the HIV/AIDS households.

#### Elderly

Before illness and death 4% of the HIV/AIDS affected members were responsible for taking care of the elderly, mostly one or two persons, in their households. The majority of these elderly were over 60 years old.

Fewer of the non HIV/AIDS deceased had this burden (27%). This may be due to most of them were married and had established their own household away from their parents. In Thailand a non married son/daughter is usually given the responsibility to take care of the elderly parents.

#### *Policy on Orphans and Elderly*

*Orphan and elderly care will become a greater problem in the future in the rural community if HIV/AIDS is still spreading widely. Extended families will not be able to care for everyone affected. Orphanages for infected babies should be established in badly affected communities. These should be set up and supported by a government fund. NGOs caring*

*for orphans should also be supported and encouraged. Elderly people left alone by HIV/AIDS also need help in the form of free medical care, nursing homes or home visits from nurses and social workers.*

#### Social Stigmatization and Social Discrimination Against HIV/AIDS Victims and Their Families

In Thailand HIV/AIDS is very much feared by the general public. This is partly explained by the public campaigns against HIV/AIDS which have mainly stressed death and fear of death caused by the deceased. Although there has been some recent change in public campaign strategy by shifting away from creating fear of the decease to creating compassion towards the HIV/AIDS victims and learning how to live with them, social stigma and social discrimination against the HIV/AIDS victims and their families are still a widespread problem in Thailand. In our study, questions related to this issue were posed on households who admitted having HIV/AIDS death experience to find out the nature of discrimination on these households.

Fifty eight percent of the HIV/AIDS households admitted knowing that the deceased member died of AIDS or AIDS related complex. The rest stated they did not have such knowledge or did not respond.

Coinciding with the above answer, similar proportion of households (58%) indicated that most of their neighbors knew the actual cause of sickness and death in their households by observation while 11% tried to keep this a secret from their neighbors, and 11% were known only among relatives and a few others. Among young children of HIV/AIDS households, about one third did not know the real cause of death of their households member.

About 48% of the HIV/AIDS households admitted having suffered from social discrimination which was directed towards the



infected person. In addition, other household members (15%) were also stigmatized and discriminated. The most common discriminating practice was avoiding to have any association with the infected person and his/her family. This includes the prohibition of their children to play with children of the affected households. Community discrimination was also extended to their children being forced to leave school and households forced to move out of the community. Employment discrimination ranged from being forced to leave the job for employed to no buyer at family store, employees quitting as well as no order from previous customers for household having their own economic activities.

Despite death of the infected persons, these discrimination practice were still carried out against the households and their other member though with a lesser degree than before.

#### ***Policy on Human rights***

*Social discrimination against HIV/AIDS infected persons and their families is widely practiced in rural Thailand. This is in part due to the style of government campaigns against HIV/AIDS, which create fear of people with HIV/AIDS among the public.*

*Discriminating practices against people with HIV/AIDS and their families intensify the socio-economic strain on households. It is possible that the fear of being discriminated against may discourage some infected people from coming forward for early treatment so that the disease can be stopped from spreading to others.*

*The human rights of HIV/AIDS patients need to be protected. Ways of safeguarding the confidentiality of health records should be developed and implemented, to allow HIV-infected people to continue working while their health is good.*

#### ***Policy on Campaigns***

*While the campaigns are very effective with 96% of rural households under study receiving*

*the campaign message - some proportion of the households (10% - 15%) still have incorrect knowledge of how the disease is spread.*

*The Thai government's awareness campaigns are considered very effective. However a small proportion of households still have incorrect knowledge about how the disease is spread. Without the correct information and a change in attitude, attempts to develop a home-based care system for the infected may face hostility from other household members and the local community.*

*The campaign information should be re-designed to show more compassion toward the victims of HIV/AIDS and to encourage them to continue living a normal life with their families.*

#### **Household Coping Strategies During HIV/AIDS Illness and After Death**

The above analysis of economic impact of HIV/AIDS illness and death on the affected households indicates that the cost burden placed upon these households, both direct and indirect, was quite substantial. Moreover, the impact caused by HIV/AIDS death appears to be greater than death from other causes in the community.

To cope with the situation, rural households used various strategies, which each had a different impact:

More than half (52%) of the households reduced consumption by an average of 41%. From this reduction, 29% of households felt a serious impact on their welfare while 23% felt a small impact.

60% of households spent all their savings to medical care costs.

19% of households sold assets ranging from land, vehicles, jewelry to livestock.

11% of households borrowed money to meet medical care costs and maintain household consumption.

One third (35%) of households with agricultural production felt a serious impact from

the illness and death of a family member due to HIV/AIDS. About half of family production (49.4%) was lost from lost labor supply, leading to 47.5% reduction in family income.

15% of school aged children were withdrawn from school and sent to work to help restore family income. Since compulsory schooling in Thailand is 6 years, children aged 12-15 years are most likely to be affected.

16% of households left orphans. Though 83% of orphans were taken care of their extended family, the rest - 17% - became a community burden and were care for in orphanages.

Nearly half the households had an elderly care problem. Although the extended family could assist 41% of the elderly, 57% were left to take care of themselves and 2% ended up in orphanages and temples.

### Conclusion and Discussion

The following conclusions can be drawn about the economic impact of HIV/AIDS mortality on rural households. It is summarized below:

1. Rural households affected by HIV/AIDS related illness and death were mainly the poorest group in the rural community. Increased expenses on health care and other related cost during illness, as well as income lost during illness and after death, were major causes of household resource drain in order to cope with the situation. Thus the already poor households will become more impoverish while the lower middle income group will be turned into the new poor households. A large proportion of the households were seriously affected by reduction of household consumption in order to cope and many turned to borrowing to finance increased health care expenses. Since the poor generally lacks collateral, informal sources of credit with high interest rate is generally used, their poverty is thus intensified. The average yearly household income of the HIV/AIDS death experience households was about 66% of

households experiencing death from other causes and equaled to 53% of the no death experienced households. If the 1988 World Bank poverty line of \$ 275 per person per year for rural areas in Thailand was adjusted by rural price index for March 1994 for 3 persons average households member, about one fourth of our HIV/AIDS households would be below the poverty line. This proportion was greater than 20% of the non HIV/AIDS death households and 15% of the no death household in the community.

2. Economic impact of HIV/AIDS death on the affected households of rural Chiangmai province measured in terms of direct and indirect costs per death were quite substantial. These financial costs per HIV/AIDS death were also greater than non HIV/AIDS death that occurred in he community during the same period

The direct medical care cost per each HIV/AIDS patient until death was 24,344 Baht, which was around 10% higher than the 22,075 Baht direct medical care cost of a non HIV/AIDS patient. However, when adding other direct costs of travel and funeral services, the total direct costs of non HIV/AIDS death became 70,258 Baht (\$2,810), almost 10% higher than the 64,355 Baht (\$ 2,574) total direct cost of an HIV/AIDS death. This gap between the two was due to a much larger funeral expense paid by the non HIV/AIDS death household. This expense item was around 38,440 Baht for an HIV/AIDS death and 46,850 Baht for a non HIV/AIDS death which was about 22% higher.

The indirect costs of an HIV/AIDS death were around 49,040 Baht in the first year for the deceased without supplementary work, and 75,140 Baht for those with supplementary job. These costs for a non HIV/AIDS death were somewhat lower: 44,184 Baht with only regular work and 56,616 Baht including supplementary job, or about one third less than an HIV/AIDS death.

Thus in all, the total direct and indirect costs of an HIV/AIDS death in the first year were approximately 139,495 Baht (\$ 5,580), which about 8% greater than the total cost of 128,818 Baht (\$ 5,152) of a non HIV/AIDS death.

Considering that an average AIDS at death of an HIV/AIDS deceased was 30 years old with 30 loss work year as compared to 40 years old average age at death and 20 loss work years of a non HIV/AIDS deceased, it is no doubt that the total loss to and HIV/AIDS death household would be very substantial and much greater than death from other causes in a household. An attempt to calculate the total cost per death of a household for the deceased with regular income before illness with a 5% discount rate indicates that an HIV/AIDS death would cost a household 781,696 Baht (\$ 31,268) which is much higher than the 622,702 Baht (\$ 24,908) per death from other causes. If supplementary work income is included, an HIV/AIDS death would cost the household 1,255,646 Baht (\$ 50,226) as compared to 777,552 Baht (\$ 31,102) for a non HIV/AIDS death

3. Investment in children's education of households was reduced owing to the need to restore household income. Although in our study, this proportion of households may seem rather small (3%), it is mainly due to the number of young children of school age in our study is also small. (8 between 6-11 years old; 5 between 12-15 years old and 15 over 15 years old). Since compulsory schooling in Thailand is 6 years, it means that the children aged between 12-15 years old or over will be those likely to be affected by household reduction in education investment. Hence the withdrawal of 3 children from school to enter market work represents 15% of the total children concerned which is not a small proportion.

4. Household labor supply is reduced causing household production to decline and consequently

household income and welfare decrease. Although the number of households seriously affected may not be very large (35%), the size of the impact is quite considerable (49.4% production loss; 47.5% income loss) owing to most of the deceased were in their prime working age (21-40 years). The reduction of household labor supply for family production, the employment of substituted labor by households as well as the increasing number of death from HIV/AIDS among laborer and agricultural workers could lead to shortage of hired labor in the community.

Although our study could not reveal this picture owing to the scattered nature of our studied cases in various districts and subdistricts, there is currently in Thailand a growing concern if Thailand is moving towards a labor shortage economy even without HIV/AIDS. With HIV/AIDS illness and death this issue deserves a greater consideration.

5. Orphan and elderly care will become a greater problem in the future in the rural community if HIV/AIDS is still spreading widely. Although an extended family system may help easing part of the problem, a large proportion of the elderly are already being left to look after themselves (57%) while only a small proportion (2%) can be looked after by the community. Similarly, not all orphans can be taken care of by their extended family. Our study shows that 17% of the orphans became the community burden.

6. Social discrimination against HIV/AIDS infected persons and their families are widely practiced in Thailand. This may be mainly due to the existing campaigns against HIV/AIDS emphasize greatly death from the disease, thus causing fear among the public. Discriminating practices against HIV/AIDS infected persons and their households intensify the socio economic strains on these households. It is possible that fear of being discriminated may discourage some HIV/AIDS infected to come forward for early

treatment so that the disease can be stopped from spreading without intention to others.

7. Our analysis of health care method used by households to treat HIV/AIDS patients indicate an increasing demand for government resources for hospital care. Since almost all the HIV/AIDS patients attended government hospital for care for the duration of 7 months on average, 3 times per month for out patient care and at least 6 days of each in-patient care per month (during the period six months before death), the issues of health manpower, hospital beds, medical supplies and other requirements for hospital management deserve serious consideration.

8. Traditional medicine (herb) and traditional healer were moderately received by HIV/AIDS affected households (20% - 23%). The cost of each traditional treatment is however not cheap. The effectiveness of traditional medicine in

healing HIV/AIDS is often advertised openly in the media, leading to fraud and deceit among the already poor households.

9. The Thai government campaigns against HIV/AIDS are considered very effective. The message get across 96% of rural households in the upper North under study. Television, radio and community intercom are the most three effective media channels to transmit the information. However, some proportion of these households (10% - 15%) still have incorrect knowledge of how the disease is spread. The incorrect information leads to various discriminating practices against the HIV/AIDS infected and their families and their refusal to have any association with the disease victims. Without the correct information and a change in this attitude, an attempt to develop a home based care for the infected may face a barrier from other household members and the local community.

## REFERENCES

1. AIDS Division, Ministry of Public Health, Thailand. HIV/AIDS situation in Thailand: update 31 January 1995. (Mimeograph).
2. The NESDB Working Group, Bangkok, Thailand.. Projections for HIV in Thailand 1987-2005: An application for EpiModel. The NESDB Report, 1994. (Mimeograph).
3. AIDS Division, Ministry of Public Health, Thailand. HIV/AIDS situation in Thailand: a comprehensive perspective and 1994 update Report to National AIDS Committee February 1995. (Mimeograph).
4. Gertler PJ. AIDS and family: economic consequences and policy responses in Asia. Study on the Economic Implications of the HIV/AIDS Epidemic in Selected DMCs: Inception Workshop, Manila, Philippines, September 8-10, 1993.
5. Pitayanon S, Kongsin S, Janjareon, Wattana S. Economic impact of HIV/AIDS mortality on households in Thailand. Study on the Economic Implications of the HIV/AIDS Epidemic in Selected DMCs: Final report, October, 1994.