

AIDS in Thailand: Some Preliminary Findings

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Thailand has an AIDS epidemic. How serious is it? How serious might it become? What consequences could it have for the economy and Thai society in the decade ahead?

The nature of AIDS and the AIDS epidemic make these questions important and, at the same time, difficult to answer. This article presents some preliminary results from a TDMI study of AIDS.¹

CHARACTERISTICS OF AIDS AND THE AIDS EPIDEMIC

Three general characteristics of AIDS and the AIDS epidemic can be summarized at the outset:

First, "AIDS" is not a single, distinct disease but rather a complex of illnesses that results from immune deficiency. The causal agent is the Human Immunodeficiency Virus—"HIV." HIV is transmitted by sexual intercourse, by blood contact, and by infected mothers to children during pregnancy or at birth. AIDS is eventually fatal, but the causes of death among AIDS patients vary. Unusual types of pneumonia and cancer are among the leading causes in the United States and Europe. The causes are more diverse among low-income countries. In Africa they include meningitis, tuberculosis, and the syndrome of wasting, recurrent fever and diarrhea called "Slim Disease."² It is too early to know what the leading causes of death of infected people in Thailand will be. But the pattern will have important consequences for health care and health care costs.

Second, there is a long period of latency between the initial HIV infection and the onset of serious illness. In the United States and among middle- and upper-income Africans, the average interval between infection and illness for adults is about ten years.³ During this latent period infected individuals appear healthy, but they can and do infect others. The epidemic thus spreads unobserved and undetected. Some infected individuals are identified through routine blood screenings and through special surveys in which blood tests for the presence of antibodies to HIV are conducted. AIDS cases are confirmed through blood tests once individuals develop illnesses that are associated with previously confirmed AIDS cases. But these people who tested positive for HIV or who were identified AIDS carriers represent only a small proportion of the total number of infected people.

By January 1991, 25,342 Thais had tested positive for HIV through routine blood testing and special surveys. At the same time there were 311 confirmed cases of AIDS, 88 of whom had already died.⁴ But there is no way of knowing with any certainty how many people not tested or diagnosed were also infected.

Third, AIDS epidemics typically advance in waves of infection starting with the highest risk groups, then spreading to the general population. The first wave infects male homosexuals and intravenous drug users (IVDUs). The second wave—via IVDUs—infects female prostitutes. The third wave infects men who visit prostitutes. The fourth wave infects the wives and other sexual partners of these men, and the fifth wave infects the babies of these women.⁵ In the United States and Europe the epidemic is primarily confined to male IVDUs and male homosexuals and their partners. In Thailand, however, all five waves of the epidemic are now visible.

THE CURRENT SITUATION

Every six months, the Ministry of Public Health (MOPH) conducts a "sentinel surveillance survey" in which samples of both high-risk groups and the general population are tested for HIV infection. [Table 1](#) summarizes the results from the first three surveys and partial results from the fourth survey conducted in December 1990. The figures given are unweighted national averages for the groups surveyed.⁶ The numbers of provinces represented are given in parentheses.

The population groups shown in the table correspond to the waves of the epidemic in Thailand. IVDUs are the first wave. Female prostitutes are the second wave. Men seeking treatment in sexually transmitted disease (STD) clinics (many of whom are clients of prostitutes) and blood donors (mostly men, some of whom are clients of prostitutes) represent the third wave. Pregnant women attending ante-natal (ANC) clinics represent both the fourth wave—the partners of infected men—and the fifth wave—the infants of infected mothers. A third or more of their babies will be HIV-positive.

Note however that fewer provinces were sampled in the 1989 surveys. The sampling in 1989 was done in Bangkok and in provinces where HIV infection was expected to be highest. The June 1990 survey sampled all provinces. The December 1990 survey also sampled all provinces, but the results shown in the table are incomplete. Thus, comparisons across surveys are somewhat misleading because of the upward bias of the first survey compared with the second and of the first two compared with the third. Thus, IVDU, blood-donor and ANC rates appear to "drop;" however, this is due to the higher number of provinces sampled in the later surveys.

In actuality, the epidemic is progressing at an impressive rate. Increases in prevalence among high-risk groups—brothel prostitutes and males seeking treatment in STD clinics—are high from survey to survey, even with the upward bias of the earlier surveys. Particularly noteworthy are the increases in blood-donor and ANC prevalence between June and December 1990. And regional variations may signal higher average prevalences in the future. For example, in the June 1990 survey prevalence rates among brothel prostitutes in Chiang Mai, Chiang Rai and Phayao were over 40 percent. In the December 1990 survey the ANC rates in Chiang Rai and Phayao were 3.5 percent to 4.0 percent, and the blood-donor rates in Phayao and Chiang Mai were 7.3 percent and 8.0 percent, respectively.⁷

Even allowing for the special characteristics of these northern provinces, the indication is that the epidemic has not peaked—not reached the point beyond which the number of new cases of infection begins to decrease, as high-risk groups become as infected (as "saturated") as they will become and as other people's behavior changes to patterns of lower risk. Only the IVDU population may be close to saturation, and because the epidemic has broken out into the general population so quickly, the behavior of large numbers of people needs to change. The fact that the epidemic has not peaked and that it may not peak for some time has important implications as to how serious it may become in the future.

SCENARIOS FOR THE FUTURE

HIV infection is not observable and is thus not known; projecting future infection from an unknown base is therefore a difficult task. We have chosen to approach this task in a manner that is deliberately very conservative—to make choices of assumptions and data that will tend to understate what the future situation may be. The actual situation may be worse than our scenarios suggest. But barring a sudden and quickly available medical breakthrough, it is unlikely to be better.

We have used a model developed by Chin and Lwanga to construct our scenarios.⁸ The model requires an estimate of the year in which rapid HIV spread began and an estimate of HIV prevalence in a recent reference year.

The year we use for the beginning of the rapid spread of HIV is 1987. The estimated number of HIV-positive individuals we use for the reference year 1990 is 100,000. This number is conservative. It is the

number the MOPH estimated by multiplying the June 1990 ANC rate by an estimated number of sexually active women and multiplying an adjusted blood donor rate by an estimated number of sexually active men.⁹ The same methodology using the preliminary December 1990 ANC and blood donor rates would yield an estimate of more than 200,000 HIV-positive.¹⁰ Thus, the 100,000 estimate cannot be viewed as an overstatement of the number of people infected in 1990.

With these inputs, the model calculates HIV infection, AIDS cases, and AIDS deaths backward from the reference year to the start of the epidemic and forward ten years beyond the reference year, based on the assumption that the average time from infection to AIDS is ten years and from AIDS to death a year and a half. It is possible to modify these assumptions, for example, to assume that people will live less time once infected; and to make the curve of the epidemic fitted by the model steeper. We made no changes in the model's parameters and assumptions. Two scenarios were constructed, using 1993 and 1995 as the peak epidemic years. These scenarios are shown in [Table 2](#).

Given the limitations of the Chin/Lwanga Model for projecting future HIV infection, the important implications of the two scenarios shown in the table are not in the absolute numbers but in the difference between a relatively early peak of the epidemic in 1993 and a peak two years later, in 1995. The differences in the year 2000 between the two scenarios are in the 80 percent range for HIV infection and the 40 percent range for AIDS cases and AIDS deaths. The scenarios suggest that if the peak is in 1993 rather than in 1995, there would by the year 2000 be roughly:

- 800,000 fewer people infected
- 115,000 fewer AIDS cases
- 97,000 fewer AIDS deaths

The importance of vigorous prevention efforts to bring about an early peak of the AIDS epidemic in Thailand is obvious from the comparison between these two scenarios.

PROSPECTIVE DEMOGRAPHIC AND ECONOMIC CONSEQUENCES

Even with a peak in 1993, the effect of the AIDS epidemic will be to increase and redistribute mortality. Deaths from AIDS can be expected to increase among women in their twenties and thirties; men in their thirties, forties and fifties; and eventually, among infants and young children of HIV-positive mothers.

Most AIDS deaths in the next decade, will be of adults in their prime working years. If we assume that the average loss per AIDS death is 20 prime working years (again, a conservative assumption), then the loss by the year 2000 in the 1993 scenario is 5 million prime working years; and in the 1995 scenario, 7 million.

The prospective economic costs of the illness and death of adults of prime working age include the costs of medical care and the product lost to the economy and society that these individuals otherwise would have contributed.

Thus, the AIDS epidemic will alter the Thai economy's performance from what it would have been had the epidemic not occurred. AIDS mortality will decrease the quantity of labor supply. Quality of labor inputs will decline as the increase in AIDS morbidity reduces the stamina and persistence of workers and their motivation to work. It is also likely that household savings will decline as spending on medical care rises relative to disposable income. The country's aggregate investment may be further eroded as the government is required to spend more resources on social and health services to alleviate the socioeconomic impact of the epidemic rather than on productive capital formation. And there may be AIDS-related decreases in foreign tourism and foreign investment. TDRI will estimate some of these costs in detail as the projections of AIDS and AIDS deaths are refined.