CHAPTER 5

CONCLUSIONS AND DISCUSSION

1. Conclusions

During the study period, there were 960 confirmed HIV/AIDS positive cases. A study was conducted in the five border provinces (Songkhla, Satun, Pattani, Yala and Narathiwat). The cases arose from registry reports classified by province and year, gender, age group are HIV/AIDS status.

The aim of this thesis is to identify and describe trends in the incidence of HIV/AIDS in border Southern Thailand provinces, using statistical models. The statistical methods include computation of incidence rates, crude odds ratios and odds ratios adjusted age effects using the Mantel-Haenzel method of adjustment for confounders. Models are based on logistic regression. The results are compared, in terms of the effects of the explanatory variables being assessed, as well as the goodness of fit of the different models.

The preliminary analyses reported in Chapter 3 for the incidences show the pattern of the epidemic of HIV/AIDS in the five border provinces of Southern Thailand over a six year interval. The rates are presented separately for HIV and AIDS, and for each of the two methods of transmission. It was found that HIV/AIDS incidence of female cases in Songkhla, Yala and Pattani generally increased during the study period, with peaks in the year 1995. In male cases the patterns in the two provinces were homogeneous, the incidence increasing until 1995 and dropping in the year 1996.

The odds ratios plots show clearly that the pattern of HIV/AIDS incidence has changed over the years. In 1991 no differences was found between the five provinces. However by 1993, Songkhla had a higher incidence that all of the other provinces. By 1994, Satun had caught up to Songkhla, and by 1995, Pattani had also joined Songkhla and Satun. This pattern persisted in 1996, with the epidemic occurring later in Yala and Narathiwat.

Comparison of crude odds ratios with age-adjusted odds ratios for each gender, it was found that the crude odds ratios and age-adjusted odds ratios were only slightly different in value. This result indicates no confounding with respect to age group.

In Chapter 4 the logistic regression models are fitted, thus allowing for all the explanatory variables. The result shows that the deviance from this model was not high, and the p-value indicated a good fit. Reanalysis fitting the year-province interactions, it was found that the deviance had decreased, but this decrease was not quite statistically significant for the females. The standardised residuals are plotted against normal scores, indicating some large residuals. However the high residuals were due to the poor approximate to normality rather than to any deficiency in the logistic model.

2. Discussion

Evidence based on HIV/AIDS surveillance points to the recent nature and rapidity of the HIV epidemic in Southern Thailand, beginning with the striking increase in transmission due to sexual intercourse in 1991. Four years later the numbers of infected people had peaked in the year 1995.

Secondary and tertially sexual intercourse spread of HIV into female prostitutes and then their male customers had also occurred rapidly (although preliminary genetic evidence suggests that the epidemics due to IVDU and sexual intercourse may be causally related)

The HIV experience might be summarised as follows: rapid spread first in sexual intercourse, followed by IVDU, transmission to female prostitutes, then into the low-risk non-prostitute wives and girlfriends of those men in the general population. Reports from nearby countries in Asia suggest that, much informal migration occurs between adjacent regions of Thailand, Laos, Myanmar, China, and India. Illegal social behaviour, such as injection of illicit drugs and male patronage of prostitutes, occur similarly in these countries and appears to be resulting in a similar pattern of HIV spread.

Although the annual number of reported AIDS cases in Southern Thailand had increased during the period 1991-1995, large geographical variation may be observed after stratifying the data by region and province of residence. On everage, the AIDS incidence rates are found to be higher in Northern than in Southern Thailand.

According to our analysis, crude national data do not provide an accurate description of the epidemic, in different areas of the rigion. Classifying cases according to their place of residence, which we considered as a good proxy of the place of life and thus of the place where risk behaviour occurs, is fundamental for performing detailed analyses of epidemics. Further analysis, based on age-specific incidence rates, allows more accurate comparisons to be conducted on data from provinces whose population may have different risk patterns.

In this study, several limitations and possible biases should be discussed. First, the reliability of the AIDS case definition has been questioned, and other non-clinical outcomes have been proposed for monitoring surveillance trends (Michelozzi, 1989). Furthermore, the case-definition was updated several times during the study period. In Southern Thailand, the impact of these changes was not probably relevant and may not have affected the incidence curves. However, misclassification of transmission category could be a problem.

HIV infection among females in Satun and Narathiwat is still increasing, bou these groups are not known in detail. Further study on their occupations, hometown, income, and educational background should be performed.

3. Prevention based on research

As in other countries, there is a dearth of carefully controlled research documenting the effectiveness and impact of HIV prevention programs in Thailand on the course of the HIV epidemic. The major barriers to such research are difficulty in identifying suitable control populations not exposed to the intervention in question, inability to distinguish the effects of multiple interventions instituted simultaneously. With high rates of turnover in male and female prostitutes, and perhaps among IVDU, continuous and ongoing education programs, condom-promotion schemes, and efforts

to stop needle-sharing will be required to reach a constant stream of newcomers into these professions and habits. A large proportion of sexual intercourse must must be targeted specifically in major, professionally-designed and evaluated efforts to increase condom usage: in the mass media, in primary and secondary schools before they reach the age of sexual activity, and in the workplace afterwards.