CHAPTER 2

LITERATURE REVIEW

2.1 Malaria Situation and Malaria Control Programme

Malaria is a major vector-borne disease in tropics, undermining the health and welfare of families, endangering the survival of children, debilitating the active population and straining both countries' and people's scarce resources by excessive public health costs, low productivity and impaired growth (WHO, 1993). The ultimate goal of malaria control is to prevent mortality and reduce morbidity. Early diagnosis and prompt treatment is one of the four basic technical elements of Global Malaria Control Strategy.

The Malaria Eradication Programme in Thailand was established in 1964 which was subsequently converted into Anti-Malaria Programme in 1976. This programme achieved satisfactory results in its plan of operation during 1964 - 1981 (Harinasuta 1986). However, since 1979 there has been resurgence of malaria. The Annual Parasite Incidence (API) has shown an increase from 7.1 to 8.9 in 1980 and to 10.6 in 1981. Of the six major factors responsible for persistence and increasing trend of malaria morbidity, social and economic factors in the affected communities are the most important ones. It has been shown that in Thailand malaria control continues to be implemented as a special programme although efforts are being made to involve basic health service personnel in the diagnosis and treatment of malaria and in referring severe and complicated cases to the appropriate institutions (Kondrashin and Rooney 1992).

2.2 Utilization of Health Services

Regarding with the utilization of services or goods, Wanmali (1985) mentioned that the economic status of households influences the pattern of use of services and access to them. How does the pattern of use change? Simply put, higher economic status might mean that a household uses more services, is willing to travel greater distances, and tends to travel less frequently. The last implies trips combining several purposes.This hypothesis was confirmed. Poorer households use fewer services; richer households use more. Some goods and services were required by the households in the study more often than others. And some were used more regularly than others. Similarly, it was also seen that the goods and services used more frequently and more regularly were also available closer to the households. Given these patterns of both service use and provision, both distance and income can influence the frequency of use of services. Income alone does not explain access to services or lack of it.

It has been explained that many patients decided not to attend

their nearest service point, and the major single reason for not attending it was convenience of travel. There are four important conclusions with their available results. Firstly convenience of travel is the primary determinant of patient behavior in seeking attention at a service point which is not the nearest to their home. The second one is when travel is not an obstacle it appears that quality of service and confidence in the service becomes more important. The third one is in relation to these two factors traveling cost is not a major determinant. And lastly if the average total cost incurred by patients in a zone is to be reduced, both the quality of service (speed and satisfaction) and the siting of services should be improved.The latter should be optimized (Kaewsonthi and Harding, 1986). The results to be obtained from present study will reinforce that of their study although the approaches of the studies are different.

Yeneneh (1993) studied on antimalarial drug utilization by women in Ethiopia. It was a knowledge-Attitudes-Practice study. Their finding indicated that more women preferred to obtain antimalarial from government /clinics rather than from other health facilities. Under-5-year-olds were identified as the most malaria vulnerable group and given priority for treatment and severity of illness was the principal determinant in seeking treatment.

An international comparative study of Bice and White (1969) was conducted in populations of Chester, England, Chittenden County, Vermont, and Smederevo, Yugoslavia to explore the factors related to the use of health services. It was analyzed by multivariate techniques. The results showed that level of perceived morbidity accounts for greatest amount of variance of utilization within each area, and that the occupational level of household heads and persons' tendencies to use services are also related to utilization.

They studied the sample size of about 500 to 700 from each area and their dependent variable is use or non-use of physician service within a two week period. The independent variables are age, sex, occupation of head of household, perceived morbidity, availability of regularly source of medical care, private health insurance and index of tendency to use medical services. The data were analyzed by means of Sonquist and Morgan's Automatic Interaction Detector (AID) programme, a multivariate procedure which selects optimal combinations of predictor variables. In conclusion, six of the eight predictor variables accounted for at least 1 per cent of the variance in utilization among persons reporting high levels of perceived morbidity. Three factors, perceived morbidity, occupational levels, and tendency to use medical services index, explained at least one per cent in all three areas.

2.3 Ability and Willingness to Pay

Ability and willingness to finance community programmes is the subject of recent interest in view of scarce economic resources. In an analysis of household surveys conducted in 38 villages in Southwestern Mali, Ainsworth and others (1987) have considered the cash income and cash expenditures in assessing the ability to finance projects to sink

wells for the supply of water for domestic purposes. These parameters can be used in general to assess the ability of the community in financing or paying the user fee for any projects related for the entire community in a given area .

Lavy and Quigley (1993) studied the willingness of low income households in Ghana to pay for the medical care which is provided on payment of service costs. It has been shown that price of the services is the determinant of service utilization. This study while presenting empirical results, highlighted the importance of information on the sensitivity of consumer choice to access, income, price and equality of health care for the evaluation of policy alternatives in the health sector. The analysis is conducted using cross sectional data on the behavior of about 5000 Ghanaian households in response to illness or injury.

A similar study, conducted in Northern Norway (Oslen and Donaldson 1993) on the willingness to pay for public sector health care programmes has focused the relationship between respondents' WTP and their demographic characteristics and attitudes. Comparisons on the WTP values with QALYs gained from each programme have also been made. It has been shown different service programmes have different determining parameters. While sex of the patient has been reported to have significant impact on hip replacement, education level was the determining factor for helicopter ambulance services. Using open ended questions, income was shown to have no effect on their willingness to pay which is the basic economic characteristics for expending to meet the essential requirements.

In contrary to their finding, WTP was shown to have significant association with household income in receiving treatment for chronic lung diseases in Canada (O'Brien and Viramontes's 1993). They concluded that : (i) large variation in WTP responses may compromise this measure's discriminant validity; (ii) there is some evidence of convergent validity for WTP with preferences measured by standard gamble; (iii) there was no evidence of starting point bias; (iv) the test-retest reliability of WTP was comparable to other preference measures. These studies though conducted in developed countries, this approach can be applied to similar studies in developing countries.

Many methods have been followed by different group of researchers to assess their phenomenon. Contingent valuation and traditional economic methods have been followed to estimate the willingness to pay for health care of improved quality in Central African Republic (Weaver and others 1993). The concept of contingent valuation method is the derivation of utility function (Hanemann 1984). A method, developed more recently by Cameron (1988). This method is simpler and easier to interpret the results than the rest as the technique is based on the willingness to pay function. There are several different models based on traditional economic methods and there are many techniques for each model. Current health care expenditure was the basis for traditional economic methods.

It has reported (Weaver and others 1993) that both the contingent valuation method and the traditional economic methods provided valid and reliable estimate of the willingness to pay for pharmaceutical, but not for facility maintenance or knowledge of personnel. They pointed out that the relationship between user fees and quality of care will be central to health care finance in developing countries for several years in the future.

2.4 Costs Incurred by Patients and Patients Behaviors

It has been explained that the costs incurred by malaria patients attending malaria clinics have two components to the overall cost of each malaria case; internal cost and external cost (Kaewsonthi 1988). Internal cost is the cost/case incurred by each operational service. External costs are the costs incurred by patients and relatives attending with a patient. External direct explicit costs are expenditures by each patient in travelling to receive care and in self-prescribed drugs. External direct implicit cost is the time cost of the patient, (working time lost) when travelling to receive care or due to the effects of the malaria infection. Relatives may also incur external costs when attending a clinic with a patient indirect (explicit and implicit). Time cost could be based on minimum wage rate, average local wage rate or average income of patients. (Income may be expected to vary seasonally). Since patients reporting of their income is not reliable, minimum wage rate and average local wage rate are used to determine the time cost of relevant people between the ages of 15 years to 60 years. In their study time cost is based upon the minimum wage rate of 55 Bahts a 6 hour day.

It has been shown by another study about malaria clinic costs at field level. When the total costs of malaria clinics are assigned to clinic patients average costs are approximately 40 Baht/clinic patient and 350-550 Baht/positive case. When total costs of malaria clinics are divided in proportion to the relative time given to clinic patients and to the examination of slides for other services approximate average costs are 7-14 Baht/clinic patient, 103-130 Baht/positive case and 4-6 Baht/service slide. Based upon assumptions concerning production capacity and average costs of malaria clinics, the minimum costs at field level would be approximately 4.4 Baht/clinic patient, 44 Baht/positive case and 2 Baht/service slide (Kaewsonthi and others 1988).

Fungladda and Sornmani (1986) conducted a clinic-based case-control study to investigate social and behavioral factors believed to be associated with malaria occurrence. In their study they mentioned three different types of treatment-seeking patterns of malaria patients. The predominant pattern for malaria patients was that patients went to the malaria clinics after first use of another source. The second most frequent pattern was that patients used the malaria clinics as a first place of treatment, and the third was that they used the malaria clinic for the third treatment. Their results suggested that although self-medication or other alternative methods are not efficacious, they further caused the patients to spend more money for

other sources of treatment.Their finding showed that 15 to 20 patients visiting a malaria clinic each day. Therefore, malaria clinic in malarious areas seemed to be underutilized. The results also showed that only 24 percent of malaria patients used malaria clinics for initial treatment. However, they did not explain about the causes of underutilization for initial treatment.

Although there are many studies about socio-economic aspect of malaria. it is still necessary to conduct further research works related with this area. Harinasuta (1986) pointed out that the social and economic factors seem to play major roles in keeping low persistent transmission of malaria in certain communities especially those residing in and near forested areas, mountains and foothills in the places not far away from Thai- Kampuchea border in East Thailand and Thai-Burmese border in West Thailand. It is suggested that further investigation should be carried out on the social and economic elements in these communities including migratory pattern, their population characteristics and life, social behavior, health belief and practice, malaria prone behaviors, etc. in association with malaria transmission among them. The results to be obtained may lead to the effective control measures of malaria in future.