

## CHAPTER I

### Introduction

Leptospirosis is a disease which is primarily transmitted to human via rodent urine, but many feral and domestic animals have also been implicated as reservoirs. *Leptospire*s enters the human host through skin abrasions, conjunctiva or mucus membranes. Contact with infected animal urine or urine contaminated environment can lead to infection. The disease occurs seasonal and linked with certain occupations for example: farmers or ranchers, abattoir workers, trappers, veterinarians, loggers, sewer workers, rice-field workers, and military personnel. Clinical manifestations vary widely and depend on the susceptibility of the host and the dose of infection. The clinical manifestations also relate to some extent to the serovar of the infecting strain.

Leptospirosis is the public health problem in Thailand because of the large epidemics and large proportion of undetected cases. It is important regarding to the differences in diagnosis between physicians and the differences in availability of laboratory services throughout the country. Thus, the actual burden of the disease can not be estimated.

The World Health Organization recommends the standard guideline for diagnosis of leptospirosis which composes of three parts A) clinical criteria B) very wide risk factors and C) Microscopic agglutination test (MAT) result. This portfolio thesis aims to adapt part B and C. It is focused on the use of specific risk factors,

which had been identified in Thailand as the part of the guideline to use in Thailand. Due to limit of MAT facility in community hospitals, Thailand, Lepto Dipstick Assay is used instead of the MAT

Chapter two is an essay dealing with the issue and defining the problem. In the essay, the problem of leptospirosis epidemic, the changing clinical pattern, the increasing severity of the disease and the problem of the diagnosis with some evidence of previous studies from Thailand are stated. The situation of the ongoing epidemic leptospirosis in Thailand is explained to emphasize the necessity in using screening test to improve the physician's diagnosis and treatment. The previous studies of the sensitivity and specificity of the screening test are also reviewed.

Chapter three is the proposal which aims to adapt the WHO standard guideline by using specific risk factors which had been identified in Thailand by Tangkanakul et al, 1998 as part of the guideline for leptospirosis diagnosis in Thailand. It is intended to determine the prevalence of leptospirosis among patients who presents with fever and to determine the effectiveness of previously identified risk factors in diagnosing the disease and also to use the screening test for diagnosis.

Chapter four is the data exercise to test the instruments in the field situation in order to modify the tools for data collection before the full-scale study through the study area (Nakorn Ratchasima province). The instrument consists of 1) standardized questionnaire 2) Lepto Dipstick Assay testing. The development of standardized questionnaire is based on WHO standard guideline for leptospirosis diagnosis. The

findings from data exercise are used to consider the improvement of the questionnaire for full-scale study.

Chapter five is the presentation slides. Chapter six is annotated bibliography in which key sources of information are listed.