PATIENT'S DELAY FOR SEEKING CARE AT HEALTH CARE FACILITY AMONG PULMONARY TUBERCULOSIS PATIENT IN PURSAT PROVINCE, CAMBODIA

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Thesis
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ABSTRACT

A cross-sectional descriptive study aimed to study the patient's delay in seeking care at health care facilities among pulmonary tuberculosis patients, to describe socio economic characteristics of respondents, enabling and reinforcing factors, and to identify the association between patient's delay and those variables. This study was conducted among new smear positive pulmonary tuberculosis patients living in Pursat Province, Cambodia within the period of January 01-31, 2009. 207-purposive selected respondents were interviewed by using structured questionnaires.

Patients who delayed were 48.05 percent and mean patient's delay was 7.04 weeks with standard deviation of 6.11. Main reasons for not coming to TB health care were: 57.54 percent of the respondents used a drug store as their health care provider; and 59.78 percent of patients didn't know where to go when they got sick or ill. These factors were associated with patient's delay ($p<0.05$).

62.01 percent of the respondents had a fair level of knowledge about TB and 79.33 percent had a high level of perception. 81.08 percent of those with a moderate level of perception had delayed behavior. Perception was associated with delay ($p<0.01$).

87.71 percent of the respondents lived within 5 kilometers of a health center and spent less than 30 minutes for traveling. Distance and traveling time were related to the delay ($p<0.05$).

The reasons for comino to TB health center were: 96.09 percent of the respondents came due to symptoms becoming worse; and 79.33 percent came because of conveniente. These factors were associated with the delay ($p<0.05$).

75.42 percent of patients got information from VHSG, 61.45 percent from mass media. Source of information about tuberculosis was associated with the delay.

Based on results, it is recommended to expand TB services to peripheral level, promote TB awareness among the general population through provision of health education and health promotion, and conduct an awareness campaign in communities especially at risk.

KEY WORDS : PATIEN'S DELAY / TUBERCULOSIS / DOTS
PREDISPOSING FACTOR / ENABLING FACTOR /
REINFORCING FACTOR

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LIST OF ABBREVIATIONS

AIDS	:	Acquired Immune Deficiency Syndrome
BK	:	Bacilli of Koch
DOTS	:	Directly Observed Treatment, Short course
HC	:	Health center
HIV	:	Human Immune Virus
IEC	:	Information, Education and Communication
MDR	:	Multi Drug Resistance
MOH	:	Ministry of Health
NTP	:	National Tuberculosis Control Program
OD	:	Operational District
PPM	:	Public-Private Mix
PHD	:	Provincial Health Department
RH	:	Referral Hospital
TB	:	Tuberculosis
VHSG	:	Village Health Support Group
WHO	:	World Health Organization

CHAPTER I
INTRODUCTION

1.1 Rationale and justification

Tuberculosis is the leading killer among people with weakened immune system mainly HIV-infected and chronic disease people. 6 million people die every year due to HIV/AIDS, Tuberculosis and Malaria; of those, nearly 2 million deaths are due to tuberculosis [1]. Up to 98 percent of TB deaths are in the developing countries where affected mostly vulnerable such as the poorest, malnourished, and young adult in their most reproductive years.

In many countries, to become sick with TB can impose a tremendous economic burden on individual and household income. While TB patients' household were often in debt after TB diagnosis and treatment. Patients' direct cost can be covered over 10 percent to 20 percent of their annual income. If the major financial supporter is a male who dies fro tuberculosis, the economic cost of illness may fall on young widow with child-rearing responsibilities.

Some countries especially in developing ones, TB is still highly stigmatizing. Most of them, particularly women, might be ineligible for marriage, and rejection by their spouse and families. TB is often linked in people's minds with HIV co infection, which might compound a person's fear of isolation and rejection. This situation implied that their children could not continue their education or that they move to an urban area to find a job or both. Girl, especially, are often taken out of school in order to help at home, to take care for sick relatives or find paid work outside. These children may never come back to school and will be permanently disadvantaged for the rest of their lives.

Cambodia is one of 22 countries in the world with high tuberculosis burden. At present, the tuberculosis incidence rate of all form is estimated at 508 per 100,000 inhabitants, that of smear- positive pulmonary form at 225 per 100, 000 populations, and the estimate of death rate is 95 per 100,000 population in 2007. These rates are also the highest in the Western Pacific Region [2].

The World Health Organization, Western Pacific Region, urged their member countries to strengthen the capacity of national tuberculosis control program, to mobilize resources to support the program to achieve the global objectives. First, to treat successfully 85 percent of all detected smear positive cases, and second, to detect 70 percent of such cases.

There are approximately 2 300 new cases of pulmonary tuberculosis occurred every year. Among those, there are only 60 percent (1,390 cases registered and reported in year 2007 in Pursat Province, Cambodia) went to public health services to be checked and made diagnosis as tuberculosis, and got a proper treatment with the national regiments [3].

The diagnosis was based on direct smear examination and the remarkable abnormality or lesions are strongly suspected to be tuberculosis on the chest X-ray. Regarding these figures, most of cases identified as (++) or (+++) positive-smear, or serious aspects with fibrosis lesions on the x-ray films. These mean that they got infection and allowed tubercle bacilli surviving in the lung field for many years. Those patients become infectious sources and spread tuberculosis germs to other people surrounding and community.

On the other hand, it is also difficult to be cured, because of some of those patients who came to health facilities with serious symptoms mainly dyspnea or hemoptysis and it usually associated with other diseases: HIV/AIDS, diabetes or fungus infections.

With the efforts, the achievements in maintaining high cure rate over 85 percent and case detection rate at 60 percent reported in 2007 in Pursat Province. This

means that the burden of tuberculosis would remain and other interventions to accelerate the decline would continue to be necessarily needed.

Regarding to situation and burden of tuberculosis in the region as well as in Cambodia mainly the incidence in Pursat province, this study would try to understand the factors which influenced in prolonging or keeping patient delay for finding out proper services. These determinants should focus on socio-demographic and economic characteristics, knowledge and perception of patients, and availability and accessibility to TB information and services.

1.2 Research questions

1.2.1 What is the magnitude of patient delay for seeking care at health facilities among pulmonary tuberculosis patients?

1.2.2 What are the factors influenced or associated with the delay of patient in seeking health care for TB treatment?

1.3 Research objectives

1.3.1 General objective

To study the factors related to patient's delay for seeking care at health facilities for treatment among pulmonary tuberculosis patients living in Pursat Province, Cambodia.

1.3.2 Specific objectives

1. To examine the delay in seeking care at health facilities for treatment among pulmonary tuberculosis patients.
2. To describe the predisposing factors (socio-economic characteristics, knowledge, perception of patient on TB disease), the enabling factors (availability and accessibility of TB service), and the reinforcing factors (sources of information encouraging patient utilize TB service).

3. To identify the association between patient delay and predisposing, enabling and reinforcing factors

1.4 Conceptual framework

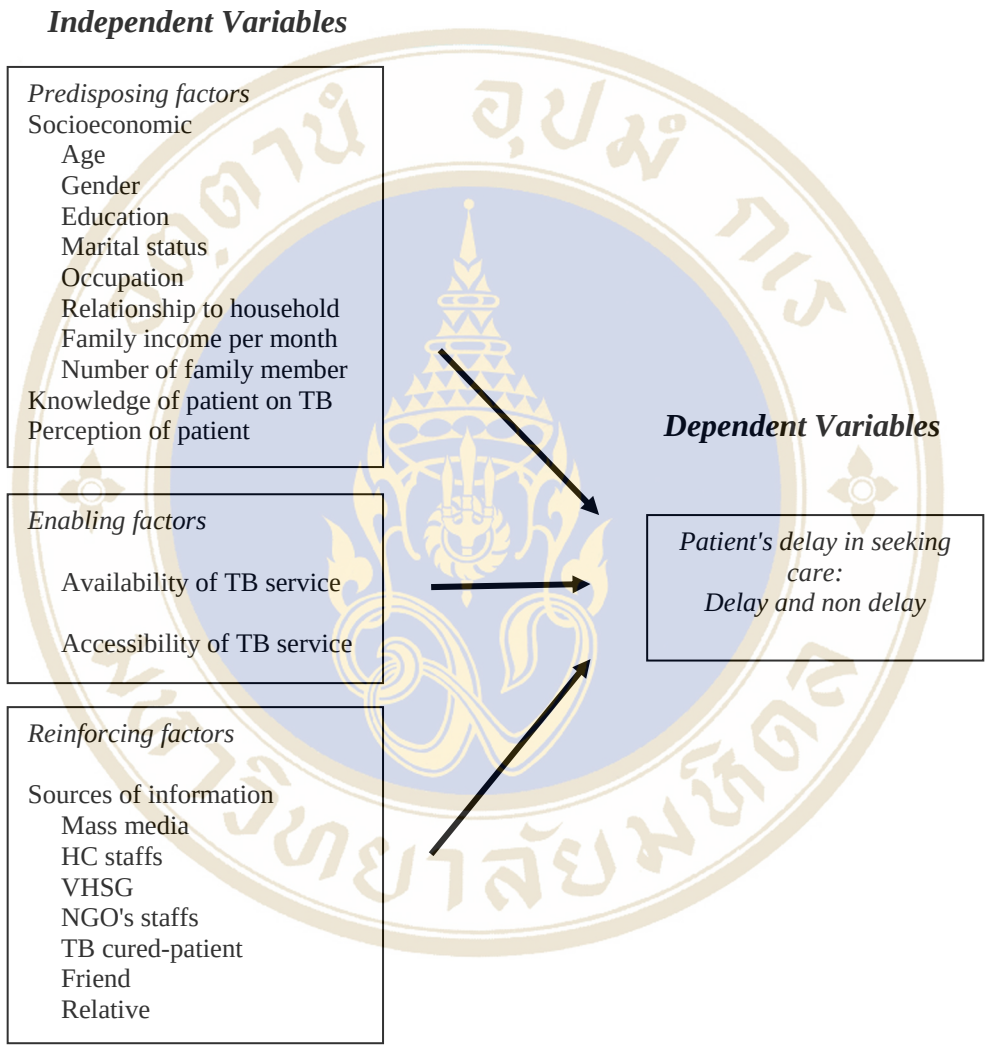


Figure 1 Conceptual framework with patient's delay in seeking care

1.5 Operational definition

Patient's delay in seeking care: time interval between the onset of symptom and the first seeking health care. In this study, the time interval up to 4 weeks was considered as non-delay, and more than 4 weeks as delay.

Knowledge of patient on TB: refers to respondent's understanding about the tuberculosis disease regarding to causative agent of disease, route of transmission, symptoms, diagnosis and treatment, and prevention.

Perception of patient: refers to how patients perceive the susceptibility, severity of getting the disease and its potential seriousness of the conditions in term of pain or discomfort or time lost from the work, and how they perceive the benefit of being cured.

Availability: refers to the existence of TB DOTS service and source of encouraging information about tuberculosis for villagers. TB-TODS services included TB service at health center and mobile services at community.

Accessibility: refers to affordable/equitable and acceptable TB services for patients/villagers to receive diagnosis and treatment with free of charge. It included physical, economical, and socio cultural accessibility to TB treatment.

Sources of information: refers to from whom/where patients got information about tuberculosis and treatment. Places where respondents got information included mass media, and from whom patient received information included health personnel, VHSG, NGO's staff, cured-TB patient, relative and friend.

TB cured-patient: ancient TB patient who was diagnosed and treated by anti TB drugs, then he/she got cure after completed a recommended treatment course.

Occupation: refers to current job of respondents, it includes farmer, business, government officer, jobless, and others.

Family income: refers to economic status of the family that they can generate monthly income in total from all sources.

Education: refers to educational level that respondent obtained/ attended. It preferred to no education, primary school, secondary school, college, and others.

Seeking care: patient behavior toward the place where DOTS services available especially DOTS service centers.

New smear positive patient: patient who has presence of TB bacilli in sputum by direct examination, and never got treatment by anti TB drugs at all or got it less than one month and drop out from the treatment.

1.6 Expected outcomes

- Knowing the real magnitudes of tuberculosis patients who prolonged in seeking health care and treatment in Pursat province.
- Obtaining information about factors affected or associated with patient's delay
- Understanding the proper measures to meet the real issues in order to improve or reduce the factors influencing the delay of tuberculosis patients.

1.7 Limitation of the study

Regarding to the process of data collection for this study, we planned to recruit some health personnels to help in collecting data and making interview the respondents. Most of health personnels at peripheral level as well as Village Health Support Groups (VHSG) are already exposed to the basic knowledge training mainly on preventive activities including maternal and child health, HIV/AIDS, tuberculosis, malaria and health promotion. If they ask questions to the respondents and respondents can't understand or their answers are not clear, in this situation the interviewer might meet the gap on part of patient's answer. Thus, it might lead to information bias.

We are not able to determine the time of onset of symptoms in all patients in this study. Since investigator make interview patients after they have begun treatment, patients might be more likely to report TB rather than non-TB symptoms.

Therefore, there may have some recall bias from patients regarding the type, severity, onset of symptoms and duration.

On the other hand, we perform purposive selection not random sampling for sampling technique. In case that sample sizes that have been pick up from registration or records during the period of study are not enough for analysis, we will use patients who had registered for treatment in the previous time to support the required sample sizes. This process more or less can produce a selection bias.

The study population as well as the research findings might not be representative for the reference population because of purposive sampling or population based sampling, exclusion criteria.

CHAPTER II
LITERATURE REVIEW

2.1 Theoretical model- PRECEDE Model

The PRECEDE is the acronym stands for Predisposing, Reinforcing, and Enabling Constructs in Educational/ Environmental Diagnosis and Evaluation [4]. The PRECEDE framework was developed in the 1970s by Green and colleagues, it based on the premise that just as medical diagnosis precede a treatment plan. This approach addressed a concern among some professional that health education focused too much on implementing interventions and too little on designing intervention that were strategically planned to meet demonstrated needs.

The PRECEDE model is a framework for the process of systematic development and evaluation of health education program. An underlying premise of this model is that health education is depend on voluntary cooperation and participation of clients in a process that allow personal determination of behavioural practices, and that the degree of change in knowledge and health practice is directly related to the degree of active involvement of clients. Therefore, this model, appropriate health education was considered to be the intervention for a proper diagnosis in a target population. This model is multidimensional, founded in social, epidemiology, behavioural, education and administration. As such, it recognizes that health and health behaviours have multiple causations which must be evaluated in order to assure the appropriate intervention.

The purpose of the PRECEDE model is to direct initial attention to outcome rather than input. This forces planners to begin the planning from the outcome point of view. In other words, as a program planner begin with desired

outcome and work backward to identify what causes it, what precede the outcome. The intervention is targeted at the preceding factors that result in the outcome.

The overriding principal in this approach to health education was that health behaviour must be voluntary behaviour. Health means different things to different people, serves different purposes for different people, and is more or less important to different people. Because of this is difficult to justify the imposition of rigid criteria of appropriate health behaviour unless behaviour has been judged by society as a whole to be sufficient hazard to the common goods to warrant the curtailment of individual choice.

PRECEDE-PROCEED is a five-step planning process that begin at the end, focusing on health-related outcomes of interest and working backward to diagnose which combination of intervention strategies will best achieve the objectives. But PRECEDE is the first five steps of whole process.

Step1. Social diagnosis

The focus of this step is to identify and evaluate the social issues which impact the quality of life of a target population. This requires program planners to gain an understanding of the social problems which affect the quality of life of the patient, consumer, student or community, as those populations see those problems. This followed by the establishment of a link between these problems and specific health issues which may become the focus of health education. The link is essential in life, in turn, how the quality of life affects social issues. Methods used for diagnosis may be one or three of the following:

- Interview
- Focus group
- Community forum
- Survey

Step 2. Epidemiological diagnosis

This step helps to determine health issues associated with quality of life. It helps identify behavioural and environmental factors related to the quality of life issues. The focus of this step is to identify of specific health problem and non health factors which are associated with a poor quality of life. Describing these health problems could:

a. Help establishing relationship between health problems, other health conditions, and the quality of life.

b. Lead to setting of priorities which will guide the focus of program development and resources utilization

c. Make possible the delineation of responsibilities between involved professional and organization and agencies.

These priorities were defined as program objectives which define target population (WHO), the desired outcome (WHAT), and HOW MUCH benefit the target population should obtain, and by WHEN that benefit should occur. From step 1 and 2 program objectives are created-that is the goal hope to achieve as a result of implementing the program.

Step 3. Behavioural and environmental diagnosis

This step focused on systematic identification of health practices and other factors which seems to be linked to health problems defined in step 2. This includes non-behavioural causes (personal and environmental factors) that can contribute to health problems, but are not controlled by behaviour. These could include genetic predisposition, age, gender, existing disease, climate, and workplace, the adequacy of health care facilities, etc. Another important component of this step is the determination of the importance and relative changeability of each behavioural cause. It is critical that a behavioural diagnosis is completed for each health program identified on step 2. Behavioural diagnosis is the analysis of behavioural link to the goals or problems that are identified in the epidemiological or social diagnosis. Environmental diagnosis is a parallel analysis of factors in the social and physical environment rather than specific action that could be linked to behaviours.

Step 4. Educational diagnosis

This step assesses the causes of health behaviours which were identified in step 3. Three kinds of causes are identified-predisposing factor, enabling factor, and reinforcing factor. The critical element of this step is the selection of the factor which if modified, will be most likely to result in behaviour change. This selection process includes identifying and sorting (positive and negative) these factors in appropriate category, prioritizing factors among categories, and prioritizing with categories. Prioritization of factors is based on relative importance and changeability. Predisposing factors: any characteristics of a person or population that motivates behaviour prior to the occurrence of that behaviour

- Knowledge
- Belief
- Value
- Attitude

Enabling factors: characteristics of environment that facilitate action and any skill or resource required to attain specific behaviour

- Accessibility
- Availability
- Skills
- Laws

Reinforcing factors: rewards, incentive or punishment following or anticipated as a consequence of behaviour and contributes to its persistence or extinction, and include social support, praise, reassurance and symptom belief. They serve to strengthen the motivation for behaviour.

- Family
- Peer
- Teacher

Step 5. Administrative and Policy diagnosis

This step focuses on the administrative and organizational concerns which must be addressed prior to program implementation. This includes the assessment of resources, budget development and allocation, development of an implementation

timetable, organization or personnel within programs, and coordination of the program with all other departments, and institutional organizations and the community.

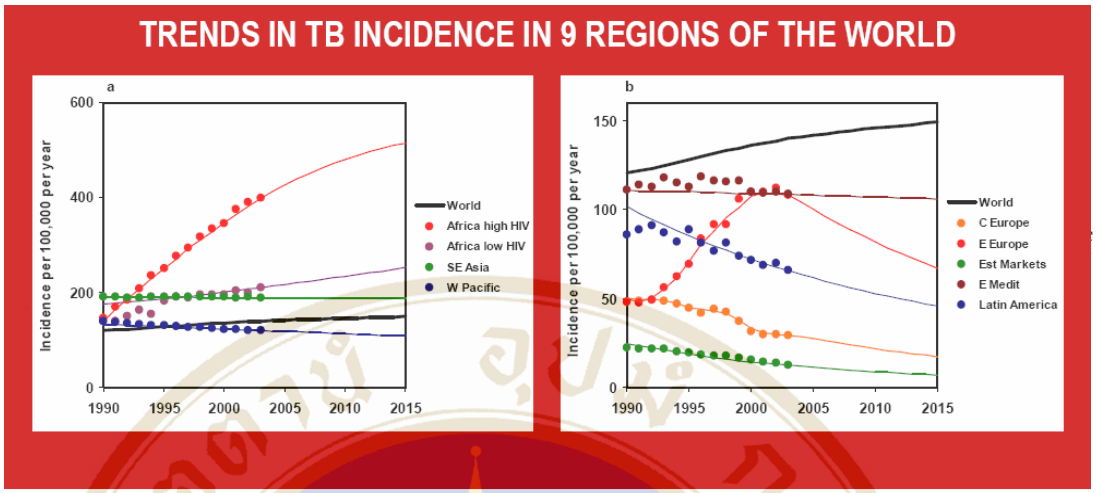
Administrative diagnosis: the analysis of policy, resources and circumstances prevailing organizational situations that could hinder or facilitate the development of health program.

Policy diagnosis: to assess the compatibility of program goals and objectives with those of the organization and its administration, does it fit into the mission statement, rules and regulations.

2.2 Global burden of tuberculosis

Tuberculosis is a leading cause of disease and death, with about 2 billions people infected with tubercle bacilli and about 2 million deaths annually. It is the leading cause of death world-wide in which 98 percent of TB deaths are in developing countries affected mostly young adult in their most productive years [1], second to human immunodeficiency virus (HIV)/ acquired immunodeficiency syndrome (AIDS) among infectious diseases.

There were estimated at the amount of 8.9 million people developed tuberculosis and 1.7 million died in 2004. Most of cases occurred in developing world and 80 percent of those happened in the 22 highest- burden countries [5]. Although the incidence of TB has decreased in many countries over the past decade, case numbers continues to rise in much of sub-Saharan Africa, where HIV is endemic. Eastern Europe has also seen an increased burden of TB, which is associated with poor treatment out come due to Multi-drug resistance (MDR). 425,000 new MDT-TB cases occurred every year with the highest rates in the former USSR and China, where up to 14 percent of all new cases are not responding to the standard drug treatment [1].



Source: Tuberculosis-Global burden, WHO 2005

Figure 2 Trend of TB burden

Mycobacterium Tuberculosis transmission to others, 90 percent of whom remains asymptomatic with latent tuberculosis infection (LTBI). The progression or reactivation from latent TB infection to active disease is greater within the first two years. The risk of TB reactivation and rapid disease progression is greater in individuals whose immune system have been suppressed through malnutrition, HIV co-infection or other chronic diseases such as diabetes.

Certain groups of individual in the community are at increased risk of TB, Miners, the elderly, prisoners and immuno compromised, i.e. HIV-positive, individuals are among them. The last two groups are associated with outbreak of multi drug resistance tuberculosis, which has serious medical as well as economic consequences. In the United States, MDT-TB treatment costs US$ 250,000 per case [6].

In 1993, the World Health Organization (WHO) declared TB as a global emergency due to the steady increase of disease worldwide. In 1995 the directly observed treatment, short-course (DOTS) strategy was introduced as a cost-effective way to achieve global target of 70 percent case detection and 85 percent cure rate by 2005 and to maintain or improve on this performance from 2006 towards. It was

projected that if these global targets were met, TB incidence would decline by 5-10 percent annually in countries without HIV endemic. However, meeting these targets, especially case detection rate, has proven difficult, with only 53 percent in 2004 and 60 percent in 2005 [7].

2.3 Socio economic burden of TB on individual and household

In many countries, to become ill can impose a tremendous economic burden upon those who are forced to support the inefficiencies of health care system. In Sierra Leone, treatment cost for all types of disease conditions accounted for 26 percent of yearly household income in the lowest income groups and 3.7 percent in the highest income groups.

In Tamil Nadu, India, 75 percent of urban TB patients' household and 67 percent of rural TB patients' household were in the debt after TB diagnosis and treatment [6]. The average amount borrowed was US$ 59. The economic impact of TB on an individual and on his or her household is particularly impressive.

Patients' direct cost can be between 10 percent and 20 percent of their annual income. As these costs represent significant fractions of the total annual income of individual and households, they can also be significant when compared to total operational costs of the TB program itself. In many countries, TB is highly stigmatizing. Thus, people, particularly women, may be ineligible for marriage, and face rejection by their spouse and families. In much of Sub-Sahara Africa, TB is often linked in people's minds with HIV co-infection, which may compound a person's fear of isolation and rejection.

If the major financial supporter is a male who died from TB, the economic costs of illness may fall upon young widows, who often have dependent children, and who may have no work or educational experience. Widows are generally compelled to seek employment at the expense of their child-rearing responsibilities.

Children are severely affected by having one or more parents with TB. Such disruption may mean that children do not continue their education or that they move to an urban area to find a job or both. Girl, particularly, are often taken out of school in order to help at home, care for sick relatives or find paid work outside the house. In these circumstances, children may never return to school and will be permanently disadvantaged for the rest of their lives.

2.4 Tuberculosis situation in Cambodia

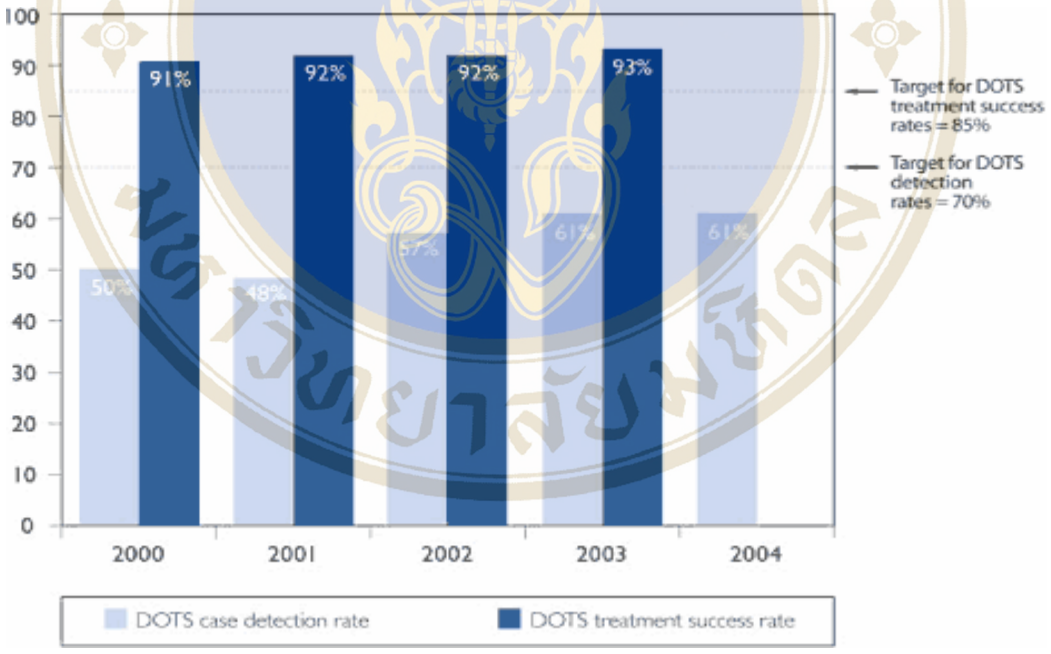
As low-income country, Cambodia is one of the 22 countries with highest burden of tuberculosis. TB incidence of all forms is estimated at 508 per 100,000 inhabitants and that of smear-positive pulmonary forms at 225 per 100,000 populations, death rate is about 95 per 100,000 population [8], and HIV-sero prevalence among TB patients was 8 percent in 2005 [9]. The number of new TB cases of all types was 36,121in 2005, which included 21,104 cases of smear-positive pulmonary TB. The impact of HIV/AIDS on tuberculosis is currently enormous in Cambodia, resulting in the highest number of cases ever notified in National Tuberculosis Control Program (NTP).

The national policy and strategy of Ministry of Health (MOH) concentrating on the TB control is providing direction and guidance to overcome the issues. The aims of NTP are to ensure equity and accessibility to quality TB services in order to contribute to socio-economic development and poverty reduction by reducing morbidity and mortality due to tuberculosis, and the main objectives are to achieve the targets recommended by The WHO of case detection rate at 70 percent, and a high cure rate more than 85 percent of those. With the collaborative efforts (technical, human resources and financial supports) made by all partners involved the NTP was able to accomplished its tasks. It obtained remarkable achievements in DOTS coverage expansion over 100 percent public health facilities, maintaining a high cure rate over 85 percent, and 61percent of cases detection for new smear-positive pulmonary TB in 2004 [10].

Country population	13,789,000
Global rank out of 22 high-burden TB countries	22
Estimated number of new TB cases	70,370
Estimated TB incidence (all cases per 100,000 pop.)	510
DOTS population coverage (%)	100
Rate of new sputum smear-positive (SS+) cases (per 100,000 pop.)	138
DOTS case detection rate (new SS+) (%)	61
DOTS treatment success rate in 2003 (new SS+) (%)	93
Estimated adult TB cases HIV+ (%)	13.0
New multidrug-resistant TB cases (%)	0.0

Note: All data are for 2004 except where noted otherwise.
Source: Global Tuberculosis Control: WHO Report 2006

Figure 3 Burden and achievement of NTP, Cambodia

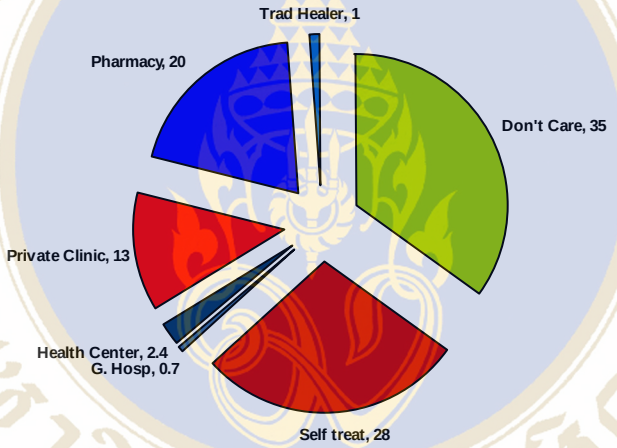


Source: Global Tuberculosis Control: WHO Report 2006

Figure 4 Case detection and treatment success rates under DOTS, Cambodia

2.5 Seeking care behaviors among TB suspects

A national TB prevalence survey conducted in Cambodia in 2002 shown that the behaviors of people who have respiratory clinical signs or symptoms related to tuberculosis were not appropriate. They were asked where would you to prefer to go to when you have respiratory symptoms or chronic cough. The majority of respondents seek care at private clinics or pharmacies approximately up to 33 percent rather than the national tuberculosis program (health centers and public hospitals) only 3 percent. It implied that the places where patient referred to might be depend upon service satisfaction or any reasons in term of time for waiting.



Source: 2002 national TB prevalence survey

Figure 5 Patient behavior in seeking care

Most of TB suspects (63%) did not seek care at any health care providers. they usually applied self-treatment at home by following the existing norms or some advices from parents or relative. Among those they did not care at all or let it be, otherwise they believe that it can be recovered without treatment. There was a small number only at 3 percent decided to go to public referral hospitals or health centers for consulting with medical doctors or health personnels about their problems or illness.

Even modern medicines available, some patients still believe on traditional healers in their community rather than health personnels. They believe that the appearance of symptoms or illness stemming from doing something wrong with spirit of the god. It means that their awareness regarding to disease and behavior need to identify the real factors to be improved.

2.6 Previous studies related to study variables

2.6.1 Availability and accessibility of TB service

One study conducted in rural district in Cambodia in 2002 to compare the delay and behavior of TB patient up to diagnosis, between pilot district where DOTS was decentralized through health center and control district where DOTS was available at hospital. The result shown that total delay (time interval between onset of symptomatic and starting treatment) in pilot district is two months shorter than that in control district which up to seven and haft months [11].

Distance and travel costs to TB service center were the factors associated with delay in seeking diagnosis of tuberculosis. Regarding the finding, they suggested to national tuberculosis control program to expand DOTS services to peripheral level as well as in the community, thus, patients could afford.

In this study, other factors in term of gender, level of education, knowledge, perception and availability of information about TB and services are not significant variables associated with the delay in seeking TB care. Next study which will be conducted with the similar situation and target group should more focus on these variables.

2.6.2 Knowledge and information oriented

Another similar study to assess the frequency and determinants of delay in diagnosis and treatment of new smear-positive pulmonary tuberculosis cases at DOTS treatment centers by using structured questionnaire interviews which consists of socio demographic status , satisfaction with care, knowledge and feeling of stigma that

might influence health-seeking behavior and accessibility to timely and appropriate [12].

The study found that the significant risk factors related to total delay were living far from health facility, seeking initial care at non-health care provider, feeling a high degree of stigma and having more than one health care encounter before diagnosis. Patient related diagnosis delay in this study means the duration between onset of symptom and first seeking care was 52.7 days due to inadequate knowledge regarding the disease, seeking care at non-specialized provider and more than one health care encounter before diagnosis.

It implied that TB awareness among population in the community is the important factor to change practice as well as patient behavior to make decision properly in seeking care. The lack of awareness and encouraging information regarding to tuberculosis will let patients suffer from disease and face a high stigmatization as result in leading to be late for diagnosis and treatment.

2.6.3 Factors contributing to delay for treatment

There are many factors associated with the delay in seeking treatment. It varies from countries to countries depend upon the situation, characteristics and environment in each setting.

2.6.3.1 Delay in patients seeking medical care

Delay in seeking care can be associated with increased costs to patients in term of out-of-pocket payment for medications, special foods, tests, and lost work time. It was not uncommon for patient with TB to have multiple encounters with the health system prior to diagnosis. When people delay for seeking care, they remain sick, and they therefore work at a less efficient and profitable pace or are unable to work at all. As a result of diagnosis delay, people with TB remain infectious and transmit the infection to their family or other people in communities [6].

TABLE 1. FACTORS CONTRIBUTING TO PATIENT DELAY IN SEEKING MEDICAL CARE

FACTOR	REFERENCE
Fear of diagnosis	Calder et al., 2000 (*38*)
Desire to self-treat	Calder et al., 2000 (*38*)
Perception that TB is incurable	Khan et al., 2000 (*40*)
Poor knowledge about TB	Ngamvithayapong et al., 2001 (*41*) Godfrey-Faussett et al., 2002 (*42*)
Poor perception of quality of health service	Asch et al., 1998 (*43*)
Concern about long waiting times	Asch et al., 1998 (*43*)
Lack of finances to cover all costs involved	Asch et al., 1998 (*43*)
Distance to health services	Asch et al., 1998 (*43*)
Gender[a]	Hudelson, 1996 (*15*) Muula, 2001 (*44*) Khan et al., 2000 (*40*)
Language differences between patient and doctor	Greenaway et al., 2002 (*39*)
Age[b]	Lienhardt et al., 2001 (*45*) Leung et al., 2002 (*46*)

[a] Some evidence of a longer delay among women.
[b] Some evidence of a longer delay among the elderly.

Source: WHO, the socioeconomic burden of TB

In table 1 suggests that the delay in patient seeking care usually occurs because people can not afford any extra expense- the costs of travel to clinic, as well as the time off work while making the journey, can be considerable. People with low income, especially those in rural areas, frequently have to travel further or longer than those who are better off.

In many countries, there are different providers, for example, herbalists and traditional healers. People with symptoms will first seek advice and treatment from a private practitioner or, depending on the context, a traditional healer. Significantly, patients seeking a diagnosis often shop around among private practitioner, which adds to the direct costs.

2.6.3.2 Delay in health system offering diagnosis and treatment

Delay in the offer of diagnostic test and treatment by health care providers are primarily due to the failure of the health care professional to

enquire about tuberculosis in the family, the inability to recognize symptoms, the lack of tuberculin testing, poor diagnostic capability, and administrative inefficiency.

TABLE 2. HEALTH SYSTEM FACTORS CONTRIBUTING TO TB DIAGNOSTIC DELAY

FACTOR	REFERENCE
Lack of diagnostic facilities in general practitioners' clinics	Teo, 2002 [47]
Lack of trained personnel for performing smear tests	Teo, 2002 [47]
Initial consultation with private practitioner	Rajeswari et al., 2002 [5]
Initial consultation at private pharmacy or public hospital	Lonnroth et al., 1999 [34]
Consultation with multiple doctors	Calder et al., 2000 [38]
Pre-existing lung condition in patient	Calder et al., 2000 [38]
No requirement for chest X-ray	Calder et al., 2000 [38]
Hospital with low rate of admission for TB*	Greenaway et al., 2002 [39]

Source: WHO, the socioeconomic burden of TB

These failures are common in areas of high TB burden. Even after multiple visits, less than one third of patient underwent sputum-smear examination, despite incurring costs representing 1-6 months' income (a study in India).

CHAPTER III
RESEARCH METHODOLOGY

3.1 Study design

In this study, a descriptive cross-sectional study was conducted to identify the factors associated with patient's delay, and to describe characteristics of respondents including predisposing factor, enabling factor, and reinforcing factor.

3.2 Study population

The study population was new smear-positive pulmonary tuberculosis patients, both male and female aged 15-years old or more, who registered for treatment at health centers in Pursat province, Cambodia within the period of study of January 1-31, 2009. In case that numbers of patients who were diagnosed and treated during the study time were not enough for data analysis then the new smear positive patients at previous time but still under treatment would be eligible to meet the gap of sample sizes.

Exclusion criteria: some patients will be drop out due to meet exclusion criteria such as:

a- registered at five-excluded health centers

b- living in flooded area during the study

c- patients who rejected to participate

3.3 Sample sizes and sampling technique

Those patients who met the criteria above will be randomly selected to be eligible interviewee in this study. Based on the formula of determining sample size for the estimation of population proportion:

$$n = \frac{Z^2 P(1-P)}{d^2}$$

where:

Z: reliability coefficient with 0.05 level of Confidence → Z =1.96

d: degree of accuracy desired setting at 7% → d =0.07

P: prevalence of new smear positive, based on previous study, is 0.50

$$n = \frac{(1.96)^2 (0.50)(1-0.50)}{(0.07)^2} = 196$$

Hence, 196 new smear-positive pulmonary tuberculosis patients were selected purposive to be eligible participants in the study.

Sampling technique: purposive selection sampling

There were two operational districts (O.D) which consist of 2 referral hospitals and 31 health centers in Pursat province. These two referral hospitals would be drop out from the study in the purpose of homogeneous study population. Five health centers from both operational districts that located in mountainous area, and on the river would be got off. By this way there are only 26 health centers for the study, from which 7 to 8 new smear positive patients (equally purposive selection) would be eligible to participate in the study.

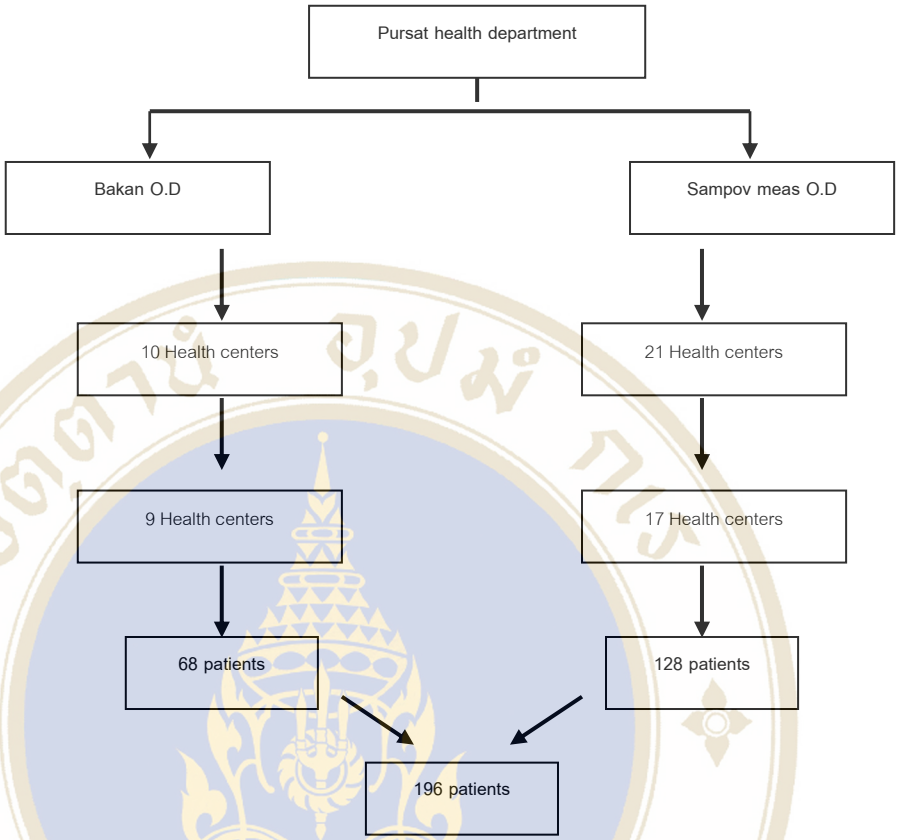


Figure 6 Sampling technique

3.4 Research instrument for data collection

The investigation was conducted by using the structured-questionnaires interview. The patient records (register and treatment card to see type of tuberculosis disease, date of starting treatment) at health centers was used to be identified as an eligible interviewee. The structured questionnaire would also be translated from English to Cambodian language in order to interviewers can read and ask respondents. The questionnaire consisted of eight parts as follow:

Part I. General information just notifying the name of health center where patients got treatment, date of treatment started, and name of operational district where treatment health center was located in.

Part II. Socio economic characteristics of respondents which consists of 8 questionnaires included age, gender, marital status, educational level, current occupation, relationship to household head, family member and monthly family income.

Part III. Knowledge of patient about tuberculosis was focusing on respondents' understanding about TB. There were 15 questions for knowledge and divided into 2 groups knowledge about TB and its spreading and knowledge about treatment and prevention. We provided 4 choices in which one was correct answer for each question. To measure the knowledge of respondents, the correct answer was given"1" and incorrect answer "0". Total score of respondents were classified, based on the Benjamin Bloom's criteria, into three categories as follow:

Total score > 80%: Good knowledge

Total score 60%-80%: Fair knowledge

Total score < 60%: Poor knowledge

Part IV. Perception of patient on tuberculosis was dealing in which patients perceived or believed on tuberculosis. 13 questions were designed fro asking respondents about perception of severity of TB disease (10 questions) and perception of benefits of treatment (3 questions). The statements were prepared in 5 level based on Likert scale: strongly agree, agree, undecided, disagree, and strongly disagree. The score for each statement was ranked from highest "5" to lowest "1" depend upon patients' response.

For positive perception statement, the score was provided as bellow:

- Strongly agree : 5 scores
- Agree: 4 scores
- Undecided: 3 scores
- Disagree: 2 scores
- Strongly disagree: 1 score

In contrast, for negative perception statement, the score was provided as follow:

- Strongly agree: 1 score
- Agree: 2 scores
- Undecided: 3 scores
- Disagree: 4 scores
- Strongly disagree: 5 scores

The level of respondents' perception on tuberculosis was classified into three level based on Best rating criteria as follow:

- 48-65 scores: High level
- 31-47 scores: Moderate level
- 13-30 scores: Low level

Part V. Availability of TB service was dealing with the availability and number of TB services at health center and mobile services at grass route level.

Part VI. Accessibility to TB service in which questionnaires were prepared for asking about distance form patients' house to TB health center, mode of transportation, travel cost, traveling time, waiting time for DOTS delivery, and expenses for DOTS services.

Part VII. Reinforcing factors, questionnaires were developed with 4 questions involved in main reason for coming to TB health center, sources of information about tuberculosis, person who given advice, and person who made decision.

Part VIII. Patient delay in seeking health care and its reasons, this part consists of 3 questions were asked about the duration since first recognition of illness until visiting TB health center, places where patient sought care beside TB health center with ranking and duration, and reasons for going there.

3.5 Pre-testing of the questionnaire

Regarding the validity of the questionnaire, it was reviewed based on suggestions made by the researcher's major academic advisor and co-advisor, and translated from English into Khmer version.

With regard to the reliability of the questionnaire, a pre-test was conducted with 30 purposively-selected pulmonary tuberculosis patients. The knowledge part was analyzed using Kuder Richardson 20 (KR20) and the perception part was analyzed using Cronbach's Alpha. KR20 and Cronbach's Alpha were calculated by using the Minitab software program, and they were 0.658 and 0.642 respectively. Based on the result of pre-testing, questions in knowledge and perception part were revised.

3.6 Data collection procedure

There were at least five interviewers needed to conduct and collect data by using structured-questionnaires. Firstly, we had to organize an orientation meeting for subordinates on the objectives of study and on how to collect data and conduct an interview. The face to face interview by trained personnels was conducted. Even those interviewers were trained, these data collection or interview process were under monitor or supervision during its period.

3.7 Data analysis procedure and statistics used

The fulfilled questionnaires were cleaned, coded, and edited before data entry. Descriptive statistics were used to describe frequency, percentage, mean and standard deviation of study variables by using Minitab software. The Correlation analysis or Chi-square test was used to determine the association between dependent and independent variables.

CHAPTER IV
RESULTS

This descriptive cross sectional survey was carried out to study the patient's delay for seeking care at health care facilities among pulmonary tuberculosis patients living in Pursat Province.

Regarding the estimated sample size, 207 new smear positive pulmonary TB patients (included 5% extra) were selected from those who registered and treated at 26 health centers during in January, 2009. Those patients were informed about the purpose of the study and were interviewed by using structured questionnaires. These questionnaires consist of seven parts including socio economic characteristics, knowledge of patient about tuberculosis, perception on tuberculosis, availability of TB services, accessibility to TB services, reinforcing factors, and patient delay in seeking care and their reasons.

During the data collection process, 7 respondents were drop out during doing interview and 21 questionnaires were not completed. Finally, there were only 179 questionnaires for analysis.

The findings of this study were presented in frequency, percentages distribution, mean, standard deviation. The association between independent variables of interest and dependent variables were examined by using Chi-square test. These results were divided into five parts as follow

- Delay in seeking care and reasons for delay
- Predisposing factors
  - Socio economic characteristics of tuberculosis patients
  - Knowledge of patients about tuberculosis
  - Perception of patients on tuberculosis

- Enabling factors
  - Availability of TB service
  - Accessibility to TB services
- Reinforcing factors
  - Reasons for coming to TB health center
  - Sources of information about tuberculosis
- Association between patient delay and independent variables

4.1 Delay duration in seeking care and reasons for delay

Regarding the patient delay in seeking care, it was classified into two main groups: non delay (<4 weeks) and delay which included short delay (4-8 weeks) and long delay (>8 weeks). The figure in table 3 showed that 51.96 percent was non delay, and 48.05 percent was delay. Among those delays, 53.49 percent were short delay and 46.51 percent were long delay. The longest delay was 50 weeks and shortest delay in duration was 2 weeks. Generally, it was up to 7.04 weeks of delay in average.

Table 3 Number and percentage distribution of new smear positive pulmonary tuberculosis patient by patient delay in seeking health care

Patient delay	**N (n=179)**	**Percent (%)**
Non delay (≤4 weeks)	93	51.96
Delay (>4 weeks)	86	48.05
Short delay (5-8 weeks)	46	53.49
Long delay (>8 weeks)	40	46.51

Mean= 7.04, S.D.= 6.111, Max=50, Min=2

Table 4 below had shown about the places where pulmonary tuberculosis patients decided to go to when they recognized the illness or uncomfortable. Over one-half of the respondents (57.54%) replied that he/she went drug store, 18.44 percent believed and went to traditional healer, 15.64 percent applied self medication in their

way, 2.23 percent went to private clinic or hospital, and who decided to use public service at health center or hospital was only 6.15 percent of the total participants.

Table 4 Number and percentage distribution of new smear positive pulmonary tuberculosis patient by place where patients come at the first recognition of illness

Variables	N (n=179)	Percent (%)
Self medication	28	15.64
Traditional healer	33	18.44
Drug store	103	57.54
Private clinic	4	2.23
Public health center/hospital	11	6.15

About the reasons for not going to TB health centers by going to another places as mentioned above, were shown in table 5. A great majority of the respondents (90.50%) had considered it as a common illness that usually occur frequently, 86.03 percent said that it was convenient, 69.27 percent of the patients confirmed about it easy to get service, 59.78 percent replied that they didn't know where to go, and a small percentage of the respondents (7.82%) said about financial problems.

Table 5 Frequency and percentage distribution of new smear positive pulmonary tuberculosis patient by reasons for going to seek care outside

Reason statements*	N (n=179)	Percent (%)
Convenient in health service	154	86.03
Easy to get service	124	69.27
Financial problem/cheap	14	7.82
Don't know where to go	107	59.78
Common illness	162	90.50

* Multiple answers

4.2 Socio economic characteristics of pulmonary tuberculosis patients

Socio economic factors were classified into age, gender, marital status, educational level, occupation, relationship to the household head, family member, and family monthly income. The distribution of these factors was shown in frequency, percentage, standard deviation, maximum, and minimum in table 6. There were nearly one-half of pulmonary tuberculosis patients (44.69%) in this study were in reproductive age group between 17 and 40 years, and only 13.97 percent was elderly people. The youngest age was 17 years, oldest 87 years and the average age was 45 years. A majority of the respondents (81.56%) were married, among those 1.12 percent were already divorced. There was not different between male (50.84%) and female (49.16%) in this population study who were infected with tuberculosis.

Regarding the level of education, there were 25.14 percent never attended any educational class, 45.25 percent finished primary school, 20.11 percent completed secondary school, and the remaining (9.59%) got attendance at college and up. Over one-half of tuberculosis patients (56.98%) in this observation were farmers and 16.76 percent were jobless. There was only 14.53 percent were government officers and 5.03 percent business man. The average family monthly income was 255 356 Riels, lower income was 30 000 Riels and the higher could earned up to 800 000 Riels a month. But over one-half of those respondents (59.55%) couldn't made money more than 280 000 Riels, slightly over one-third had income between 280 000 and 540 000 Riels, and 5.62 percent got more than 540 000 Riels a month.

There were 69.84 percent of the respondents participated in this study were main persons in their family, among those 30.73 percent were head of household and 39.11 percent were spouse of household. The rest 30.07 percent of the respondents were son/daughter and others (including nephew, brother/sister, and mother/father in law…). Nearly two-thirds of the tuberculosis patient's family (60.89%) had 4-6 members, 20.11 percent had more than 6 persons, and there was only 18.99 percent had less than 4 members in their family.

Table 6 Number and percentage distribution of new smear positive pulmonary tuberculosis patient by socio economic factors

Variables	N (n=179)	Percent (%)
Age (years)		
17-40	80	44.69
41-64	74	41.34
65+	25	13.97
Mean=45.15, S.D.=15.59, Max=87, Min=17		
Gender		
Male	91	50.84
Female	88	49.16
Marital status		
Single	29	16.20
Married	146	81.56
Divorced	2	1.12
Others	2	1.12
Educational level		
No education	45	25.14
Primary school	81	45.25
Secondary school	36	20.11
College	15	8.38
Others	2	1.12
Occupation		
Jobless	30	16.76
Farmer	102	56.98
Govt. officer	26	14.53
Business	9	5.03
Others	12	6.70
Relationship to the household head		
Head of household	55	30.73
Spouse of household	70	39.11
Son/daughter	28	15.64
Others	26	14.53
Family member		
1-3 members	34	18.99
4-6 members	109	60.89
>6 members	36	20.11

Table 6 Number and percentage distribution of new smear positive pulmonary tuberculosis patient by socio economic factors (cont.)

Variables	N (n=178)	Percent (%)
Family monthly income		
≤ 280 000	106	59.55
280 001-540 000	62	34.83
>540 000	10	5.62
Mean=255 356, SD=165580, Max=800 000, Min=30 000		

4.3 Knowledge of patients on tuberculosis

In structured questionnaires there were 15 multiple choice questions to test the level of knowledge of the respondents on tuberculosis disease and treatment (9 question asked about TB and spreading, 6 questions on treatment and prevention). For correct answer would be provided one score and wrong answer would be zero. The figures in table 7 showed about the level of respondent's knowledge. There were nearly two-thirds of respondents (62.01%) had fair level of knowledge, 26.26 percent had poor knowledge, and only 11.73 percent of the patients were good knowledge.

Table 7 Number and percentage distribution of new smear positive pulmonary tuberculosis patient by level of knowledge about tuberculosis

Level of knowledge	N (n=179)	Percent (%)
Good	21	11.73
Fair	111	62.01
Poor	47	26.26

Good (>80%), Fair (60-80%), Poor (<60%), Max=8, Min=0

Table 8 showed about frequency and percentage in each items of knowledge of patients. It was almost of the respondents (97.77%) knew about the route of TB transmission, nearly two-third of patients (64.80%) knew the name of TB germ, major sign of pulmonary tuberculosis (63.69%), and as well as symptoms of

pulmonary tuberculosis (63.69%). There was 77.09 percent of total participants in the study knew definition of tuberculosis, nearly one-half of respondents (49.72%) knew the cause of tuberculosis, 79.39 percent of the patients knew that tubercle bacilli can spread out and transmit to another people through coughing or sneezing without cover mouth and nose. However, 31.28 percent of the respondents knew that TB can located in all parts of the human body, and over one-fourths of them (28.49%) realized that all people around TB patient have a chance to get infection from him/her. Those people included spouse, people living in the same roof, and neighbours.

Regarding knowledge about treatment and prevention of tuberculosis, a large majority of respondents (95.53%) knew about the most useful method to detect TB, and 93.85 percent of patients knew that tuberculosis disease can be cured by anti TB drugs. Nearly three-fourths of total participants knew the duration for completing TB treatment (72.63%), common side effects of anti TB drugs (73.18%), and measure to prevent a baby from getting severs tuberculosis (78.77%). Moreover, only 33.52 percent that knew the measures to prevent somebody from getting TB infection.

Table 8 Frequency and percentage distribution of new smear positive pulmonary tuberculosis patient by knowledge of patient about tuberculosis

Knowledge statement	Frequency of Correct answer	Percent (%)
Knowledge about TB and spreading		
Definition of tuberculosis	138	77.09
The cause of tuberculosis	89	49.72
Name of TB germ (BK)	116	64.80
Location of TB in the human body	56	31.28
The route of TB transmission	175	97.77
Way of TB germ spreading	126	70.39
Contact person with TB patient	51	28.49
Major sign of pulmonary tuberculosis	114	63.69
Symptoms of pulmonary tuberculosis	114	63.69
Knowledge about treatment and prevention		
The most useful method to detect TB	171	95.53
TB is curable	168	93.85
Duration for completing TB treatment	130	72.63
Common side effects of anti TB drugs	131	73.18
Measure to prevent a baby from severs TB	141	78.77
Measures to prevent somebody from getting TB infection	60	33.52

4.4 Perception of patient on tuberculosis

The level of perception of TB patients of classified into three levels based on the best rating criteria. More than three fourths of the respondents (79.33%) got high score of perception, and the rest (20.67%) had moderate score. The average score of perception in this survey was 50.51, maximum score 61, and minimum score was 40. The results showed in table 9.

Table 9 Number and percentage distribution of new smear positive pulmonary tuberculosis patient by level of perception on tuberculosis

Level of perception	N (n=179)	Percent (%)
High (score 48-65)*	142	79.33
Moderate (score 31-47)*	37	20.67

Mean= 50.514, SD= 3.620, Max= 61, Min= 40

* Best rating criteria

Table 10 showed that most of the respondents perceived that tuberculosis patients usually lose times from work due to the disease (93.85%). However they could do daily works during the treatment course (84.36%) and they could develop a disease in a short time if they have low immunity (74.30%).

A large majority of patients (98.32%) participated in this study perceived that to cut the chain of transmission unless cure TB patients, and 95.53 percent of the respondents perceived that every body can have a chance to get infection from an untreated TB patient.(see table 10)

Meanwhile, a lot of TB patients still perceived that they are feeing isolation from family as well as society (86.59%), 77.65 percent of them perceived TB is curable even those patients have HIV(+), and almost of patients (97.77%) perceived that they can work as usual after completing their treatment. Among respondents, slightly one-fourths (25.70%) perceived that women can not get pregnancy during the treatment course, 25.49 percent perceived TB cured patients can't get re infection from another infectious patients, and a large majority of the respondents (98.32%) did not perceive that tuberculosis can be cured without any treatment.

Table 10 Frequency and percentage distribution of new smear positive pulmonary tuberculosis patient by perception of patient about tuberculosis (item analysis)

	Frequency (%)				
Perception statement	**SA**	**A**	**UN**	**D**	**SD**
Perception of severity					
-Chance to get infection from an untreated TB patient	67 (37.43)	104 (58.10)	6 (3.35)	1 (.056)	1 (0.56)
-Losing time from work due to the TB disease	36 (20.11)	132 (73.74)	5 (2.79)	3 (1.68)	3 (1.68)
-Patient can do daily work during the treatment course	8 (4.47)	143 (79.89)	18 (10.06)	7 (3.91)	3 (1.68)
-Cutting chain of TB transmiss. unless cure TB patient	65 (36.31)	111 (62.01)	3 (1.68)	0 (0)	0 (0)
-Developing a disease in short time if they low immunity	16 (8.94)	117 (65.36)	45 (25.14)	0 (0)	1 (0.56)
-TB can lead to disability	21 (11.73)	79 (44.13)	69 (38.55)	8 (4.47)	2 (1.12)
-Feeling isolation from family and society	22 (12.29)	133 (74.30)	6 (3.35)	16 (8.94)	2 (1.12)
- TB is curable with traditional medicines	4 (2.23)	5 (2.79)	22 (12.29)	106 (59.22)	42 (23.46)
-No pregnancy during treatment	1 (1.12)	44 (24.58)	111 (62.01)	11 (6.15)	11 (6.15)
-TB cured patient can't re infect from another infectious patient	8 (4.47)	43 (24.02)	46 (25.70)	66 (36.87)	16 (8.94)

Table 10 Frequency and percentage distribution of new smear positive pulmonary tuberculosis patient by perception of patient about tuberculosis (cont.)

	Frequency (%)				
Perception statement	**SA**	**A**	**UN**	**D**	**SD**
Perception of benefits of treatment					
-TB can recover without any treatment	0 (0)	3 (1.68)	(0) (0)	74 (41.34)	102 (56.98)
- TB is curable even those patient have HIV(+)	13 (7.26)	126 (70.39)	31 (17.32)	5 (2.79)	4 (2.23)
- Patient can work as usual after completing their treatment	45 (25.14)	130 (72.63)	(0) (0)	4 (2.23)	(0) (0)

SA: strongly agree, A: agree, UN: undecided, D: disagree, SD: strongly disagree

4.5 Availability and accessibility to TB services

4.5.1 Availability of TB services

Figures in table 11 revealed the availability of TB services at health center and in their villages. A great majority of the total respondents (99.44%) answered that TB services were available at health center. Among those 91.01 percent said that TB service was available at least one place and the other 8.99 percent said more than one. This table also implied that most of patients up to 93.85 percent in this observation expressed that it could also be available at mobile services in the community especially in their own villages. 39.88 percent of the respondents said that they had one mobile TB service in the village, 55.95 percent said two-three available, and another 4.17 percent had more than three.

Table 11 Number and percentage distribution of new smear positive pulmonary tuberculosis patient by availability of TB service

Availability	N (n=179)	Percent (%)
TB service available at health center		
Yes	178	99.44
No	1	0.56
Number of TB health centers		
One only	162	91.01
More than one	16	8.99
TB service available at mobile health services		
Yes	168	93.85
No	11	6.15
Number of mobile TB services	(n=168)	
One only	67	39.88
Two-three	94	55.95
More than three	7	4.17

4.5.2 Accessibility to TB service

The accessibility to TB service demonstrated in table 12. Over one-half of the respondents (54.70%) lived within 3 kilometers near TB health center, 32.96 percent of them located between 3 kilometers and 5 kilometers, and only 12.29 percent lived farther than 5 kilometers.

They used a different way as transportation for going to TB health center. Nearly one-half of the patients (49.16%) used motorcycle, 37.43 percent used bicycle, and the rest (12.85%) went to get TB service delivery by foot. For traveling to health center, over one- half (52.51%) spent not more than 1 000 Riels and 41.90 percent spent about 1 000-5 000 Riels. There was only 5.59 percent of the patients had paid more than 5 000 Riels for traveling cost.

Generally, it slightly over three-fourths of respondents (75.42%) spent less than half an hour for traveling time and one-fifths (20.11%) spent 30-60 minutes. A great majority of respondents (97.77%) confirmed that they waited for DOTS delivery normally less than 30 minutes. However, almost of respondents said that TB DOTS services were for free.

Table 12 Frequency and percentage distribution of new smear positive pulmonary tuberculosis patient by accessibility to TB service

Variables	N (n=179)	Percent (%)
Distance (Km)		
≤ 3 Km	98	54.75
3.1-5 Km	59	32.96
> 5 Km	22	12.29
Mode of transportation		
On foot	23	12.85
By bicycle	67	37.43
Motorcycle	88	49.16
Taxi/Bus	1	0.56
Travel cost		
≤ 1 000 Riels	94	52.51
1 100-5 000 Riels	75	41.90
> 5 000 Riels	10	5.59
Traveling time		
< 30 minutes	135	75.42
30-60 minutes	44	24.58
Waiting time for DOTS delivery		
< 30 minutes	175	97.77
≥ 30 minutes	4	2.23
Payment for DOTS service		
For free	178	99.44
Pay	1	0.56

4.6 Reinforcing factors

Table 13 showed the reasons for coming to TB health center among tuberculosis patients. With total amount of 179 respondents, they stated their reasons in different way. The most of pulmonary tuberculosis patients (96.09%) determined the reason was that his/her symptom become worse from time to time. 79.33 percent expressed their convenience with health service at TB health centers. Meanwhile, 53.07 percent of the participants they come because he/she got some advices form another person, and a small amount of 5.03 percent coming due to the result from laboratory as showing he/she has tuberculosis disease.

Table 13 Frequency and percentage distribution of new smear positive pulmonary tuberculosis patient by reasons for coming to TB health center

Main reasons*	N (n=179)	Percent (%)
Symptom become worse	172	96.09
Someone advised	95	53.07
Laboratory result	9	5.03
Convenient in health service	142	79.33

* Multiple answers

Regarding the sources of information about tuberculosis and its treatment that patients received from many sources, and the result was showed in table 14. Over three-fourths of respondents (75.42%) got the information from Village Health Support Group (VHSG), 61.45 percent of the total respondents received from mass media, 59.22 percent of them knew from health center staffs, nevertheless nearly one-thirds of respondents (32.96%) obtained the information from TB cured-patients who had already exposed to disease and its treatment. There was only 14.53 percent that TB patient got information from NGO's staff, while friend (20.67%) and relatives (17.32%) could share information about tuberculosis and treatment to whom infected with TB.

Table 14 Frequency and percentage distribution of new smear positive pulmonary tuberculosis patient by sources of information about tuberculosis

Sources of information*	N (n=179)	Percent (%)
Mass media	110	61.45
Health center staff	106	59.22
VHSG	135	75.42
NGO's staff	26	14.53
TB cured-patient	59	32.96
Friend	37	20.67
Relative	31	17.32

* Multiple answers

Even those information patients received from different sources, but the one who gave an advice and encouraged suspected patients to come to TB health service was quite different from above. Table 15 showed that it slightly over one-half of respondents (50.84%) were advised by health personnel while NGO's staff was only at 0.56 percent. Village Health Support Group covered over 35.75 percent in giving advice to those patients. 6.70 percent of the participants in this study replied that they got advices from TB cured-patients. It means that the ancient TB patients could play an important role as a peer person in advising and encouraging patient to get a proper TB services.

Table 15 Number and percentage distribution of new smear positive pulmonary tuberculosis patient by who gives an advice to come to TB health center

Advisor	N (n=179)	Percent (%)
Health center staff	91	50.84
VHSG	64	35.75
NGO's staff	1	0.56
TB cured-patient	12	6.70
Relative	8	4.47
Friend	3	1.68

Table 16 revealed that over two-thirds of the respondents (70.39%) said that he/she made decision themselves. 23.46 percent of the patients never made decision but made by his/ her spouse, and the rest decided by other people. (See table 16)

Table 16 Number and percentage distribution of new smear positive pulmonary tuberculosis patient by who made decision

Decision maker	N (n=179)	Percent (%)
Yourself	126	70.39
Your spouse	42	23.46
Your parent	8	4.47
Others	3	1.68

4.7 The association between independent variable and delay in seeking care

4.7.1 The association between socio economic factors of pulmonary tuberculosis patient and delay

The association between dependent variables especially delay and non delay and all independent variables were presented in table to table. The results showed that there were no associations between delay and gender, education level as well as family monthly income.

For marital status among respondents, it was significant that marital status was associated with patient delay (p-value < 0.01). Patients who already got married (54.79%) were higher 3 time delay than that of other group (single, divorced and others) (18.18%). Farmer (56.86%) and jobless patients (53.33%) have higher delay compared with other group (government officer, business, and others). Slightly over one-thirds of respondents (34.62%) who were government officer had delayed in seeking TB care while others group only 8.33 percent. However, there was association between occupation of respondents and delay.

It was also associated between delay and relationship to household (p-value < 0.01). It was around one-half of main person it means head of household (50.91%) or spouse of household (48.57%) in family had delayed in seeking diagnosis and treatment. meanwhile others group (mother/father in law, nephew, brother/sister) were high delay (69.44%) compared with son/daughter only 21.43 percent.

It was significant at 0.05 level of significant that there was relationship between family member and delay (p-value < 0.05). We can observe that more members, more delay in seeking health care.

Table 17 Association between patient's delay and socio-economic factors

Characteristics	Delay n=86 (%)	Non delay n=93 (%)	p-value
Age (years)			
17-40	29(36.25)	51(63.75)	**0.013***
41-64	41(55.41)	33(44.59)	
65+	16(64.00)	9(36.00)	
Gender			
Male	44(48.35)	47(52.65)	**0.933**
Female	42(47.73)	46(52.27)	
Marital status			
Married	80(54.79)	66(45.21)	**0.001****
Others	6(18.18)	27(81.82)	
Education level			
No education	23(51.11)	22(48.89)	**0.055**
Primary	41(50.62)	40(49.38)	
Secondary	19(52.78)	17(47.22)	
Others	3(17.65)	14(82.35)	
Occupation			
Jobless	16(53.33)	14(46.67)	**0.001****
Farmer	58(56.86)	44(43.14)	
Govt. officer	9(34.62)	17(65.38)	
Others	3(14.29)	18(85.71)	
Relationship to household			
Head of household	28(50.91)	27(49.09)	**0.004****
Spouse of household	34(48.57)	36(51.43)	
Son/daughter	6(21.43)	22(78.57)	
Others	18(69.23)	8(30.77)	
Family member			
1-3 member	14(41.18)	20(58.82)	**0.015***
4-6 member	47(43.12)	62(56.88)	
>6 member	25(69.44)	11(30.56)	
Income	(n=86)	(n=92)	
≤ 280 000	50(47.17)	56(52.83)	**0.360**
280 001-540 000	33(53.23)	29(46.77)	
> 540 000	3(30.00)	7(70.00)	

* p-value < 0.05

** p-value < 0.01

4.7.2 Association between perception of patient on tuberculosis and delay

The results from table 18 revealed the relationship between perception of respondents and delay (p-value < 0.01). Overall perception revealed that there were much different percentage (double) among moderate perception level (81.08%) and high perception level in delay. For perception on severity of TB disease, it was similar to overall perception. However, there was not associated between respondent's perceptions on benefit of treatment.

Table 18 Association between patient's delay and perception on tuberculosis

	Delay	Non delay	
Characteristics	**n=86 (%)**	**n=93 (%)**	**p-value**
Overall perception			
High (score48-65)	56(39.44)	86(60.56)	**0.001****
Moderate (31-47)	30(81.08)	7(18.92)	
Perception on severity of TB disease			
High (score37-50)	44(36.36)	77(63.64)	**0.001****
Moderate (24-36)	42(72.41)	16(27.59)	
Perception on benefit of treatment			
High	74(47.13)	83(52.87)	**0.515**
Moderate	12(54.55)	10(45.45)	

** p-value < 0.01

4.7.3 Association between knowledge of patient about tuberculosis and delay

According to the results in table 19, there was association between knowledge of patients about treatment and prevention and delay (p-value < 0.01). There were 38.10 percent of the respondents with good knowledge about treatment and prevention had delayed, it was less than those had fair knowledge. Although it was also noticed that group of good knowledge in overall, and in knowledge about TB and spreading were less delay than that group of fair knowledge in number and percentage.

Table 19 Association between patient's delay and knowledge about TB

Characteristics	Delay n=86 (%)	Non delay n=93 (%)	p-value
Overall knowledge			
Good	10(47.62)	11(52.38)	**0.068**
Fair	60(54.05)	51(45.95)	
Poor	16(34.04)	31(65.96)	
Knowledge about TB and spreading			
Good	13(48.15)	14(51.85)	**0.079**
Fair	41(57.75)	30(42.25)	
Poor	32(39.51)	49(60.49)	
Knowledge about treatment and prevention			
Good	8(38.10)	13(61.90)	**0.001****
Fair	74(53.62)	64(46.38)	
Poor	4(20.00)	16(80.00)	

** p-value <0.01

4.7.4 Association between availability of TB services and patient's delay

Results from table 20 showed that there was association between number of mobile TB services in villages and delay (p-value < 0.01). Among respondents who said there were more than one mobile TB services in their village, 46.89 percent of them had delay compared with those patients who have one mobile TB service 22.39 percent delayed.

Beside this, there were no relationship between delay in seeking care and number of TB health center, availability of TB services at health center as well as mobile TB services in the village.

Table 20 Association between patient's delay and availability of TB service

	Delay	Non delay	
Variables	**n=86 (%)**	**n=93 (%)**	**p-value**
TB service at health center			
Yes	86(48.31)	92(51.69)	**1.000**
No	0(0.00)	1(100.00)	
Number of TB service at health center			
One only	77(47.53)	85(52.47)	**0.505**
More than one	9(56.25)	7(43.75)	
Mobile TB services at village			
Yes	78(46.43)	90(53.57)	**0.086**
No	8(72.73)	3(27.27)	
Number of mobile TB service			
One only	15(22.39)	52(77.61)	**0.001****
More than one	63(62.38)	38(37.62)	

** p-value < 0.01

4.7.5 Association between accessibility to TB service and delay

Based on results in table 21, there were no significant association between mode of transportation, waiting time for DOTS delivery, Expense for DOTS services and delay. However, distance from house to TB health center was associated with delay (p-value < 0.01). It was strange that patients who live near TB health center have a high delay in seeking than that of patients far from health center.

There was also association between travel cost and delay (p-value < 0.01). Among patients who spent less than 1000 Riels, 60.64 percent of the respondents were delay and the other was not. Only 32 percent out of patient spent between 1 500 Riels-5 000 Riels had delayed in seeking care. Among respondents who spent at least 30 minutes for traveling to TB health center, 31.82 percent had delay. However, there was relationship between traveling time and delay (p-value < 0.05).

Table 21 Association between patient's delay and accessibility to TB services

	Delay	Non delay	
Characteristics	**n=86 (%)**	**n=93 (%)**	**p-value**
Distance			
0-3 km	60(61.22)	38(38.78)	**0.001****
4-5 km	18(30.51)	41(69.49)	
>5 Km	8(36.36)	14(63.64)	
Mode of transportation			
On foot	13(56.52)	10(43.48)	**0.473**
By bicycle	34(50.75)	33(49.25)	
Motorcycle/Taxi	39(43.82)	50(56.18)	
Travel cost			
0-1 000 (Riels)	57(60.64)	37(39.36)	**0.001****
1 500-5 000	24(32.00)	51(68.00)	
> 5 000	5(50.00)	5(50.00)	
Traveling time			
< 30 minutes	72(53.33)	63(46.67)	**0.012***
≥ 30 minutes	14(31.81)	30(68.19)	
Waiting time for DOTS delivery			
< 30 minutes	85(47.75)	90(51.43)	**0.621**
≥ 30 minutes	1(25.00)	3(75.00)	
Expense for DOTS service			
No pay	85(47.75)	93(52.25)	**0.480**
5 000-10 000 (Riels)	1(100.00)	0(0)	

* p-value < 0.05

** p-value < 0.01

4.7.6 Association between reinforcing factors and delay

The relationship between someone advised and delay was presented in table 22. Patients who got advice from someone (57.89%) had delay higher than those who didn't get it (36.90%). There was likely not different in delay among group of respondents who had no result from laboratory.

Regarding the convenience, 64.86 percent of the patients who have no convenience with services at TB health center had delay and it was higher than that of other group at 43.66 percent. It was also statistically significant association between convenience and delay with p-value < 0.05.

Table 22 Association between patient's delay and main reasons for coming to TB health center

	Delay	Non delay	
Characteristics	**n=86 (%)**	**n=93 (%)**	**p-value**
Symptom becomes worst			
No	4(57.14)	3(42.86)	**0.711**
Yes	82(47.67)	90(52.33)	
Someone advised			
No	31(36.90)	53(63.10)	**0.005***
Yes	55(57.89)	40(42.11)	
Lab result			
No	86(50.59)	84(49.41)	**0.003****
Yes	0(0)	9(100.00)	
Convenient			
No	24(64.86)	13(35.14)	**0.021***
Yes	62(43.66)	80(56.34)	

* p-value < 0.05

** p-value < 0.01

Regarding to sources of information of tuberculosis in table 23, it showed that there were no relationship between patient delay and mass media, health center staff, VHSG, NGO's staff as well as their relatives. However, source of information from TB-cured patients was significantly associated with patients' delay (p-value < 0.01). Over one-half of the respondents (57.50%) who didn't get information from TB cured-patient had delayed. Among patients got information, there was only 28.81 percent delayed, it was twice less than that of who didn't get it.

Similarly to TB-cured patients, information from friend was also associated with delay (p-value < 0.05) in which 52.11 percent of the respondents who didn't get information from them had delayed. It was slightly higher than those patients got it from their friend.

Table 23 Association between patient's delay and sources of information on TB

	Delay	Non delay	
Characteristics	**n=86 (%)**	**n=93 (%)**	**p-value**
Mass media			
No	32(46.38)	37(53.62)	**0.723**
Yes	54(49.09)	56(50.91)	
Health center staff			
No	40(54.79)	33(45.21)	**0.133**
Yes	46(43.40)	60(56.60)	
VHSG			
No	20(45.45)	24(54.55)	**0.692**
Yes	66(48.89)	69(51.11)	
NGO's staff			
No	74(48.37)	79(51.63)	**0.835**
Yes	12(46.15)	14(53.85)	
TB cured patient			
No	69(57.50)	51(42.50)	**0.001****
Yes	17(28.81)	42(71.19)	
Friend			
No	74(52.11)	68(47.89)	**0.031***
Yes	12(32.43)	25(67.57)	
Relatives			
No	70(47.30)	78(52.70)	**0.662**
Yes	16(51.61)	15(48.39)	

* p-value < 0.05
** p-value < 0.01

4.7.7 Association between duration of seeking and delay

The results in table 24 showed that there was relationship between patient delay and visit's place at first of recognition of illness (p-value < 0.01). Patients who applied health care by self medication had delayed 64.29 percent. It was higher than other groups, traditional healer (27.27%) and public health center (18.18%).

Utilization of drug store at first recognition of illness was one of reasons for coming late to get TB service. 53.27 percent out of patients who went to drug store had delayed.

Table 24 Association between patient's delay and visit's place at first of recognition of illness

Variables	Delay n=86 (%)	Non delay n=93 (%)	p-value
Visit's place			
Self medication	18(64.29)	10(35.71)	**0.002****
Traditional	9(27.27)	24(72.73)	
Drug store	57(53.27)	50(48.54)	
Public health center	2(18.18)	9(81.82)	

** p-value < 0.01

Table 25 showed the relationship between patient delay and reasons for not coming to TB health center. There was significant association between delay and reason of don't know where to go (p-value < 0.01). Over two-thirds of the respondents (70.83%) who didn't know where to go had delayed in seeking diagnosis and treatment, and, in contrast, for patients who knew. Meanwhile other reasons (convenience, easy to get service, financial problem, and consideration as a common illness) were not significant associated with the patient delay.

Table 25 Association between patient's delay and reasons for going to seek care outside (beside health center)

Variables	Delay n=86 (%)	Non delay n=93 (%)	p-value
Convenient in health service outside			
Yes	77(50.00)	77(50.00)	**0.191**
No	9(36.00)	16(64.00)	
Easy to get service			
No	29(52.73)	26(47.27)	**0.404**
Yes	57(45.97)	67(54.03)	
Financial problem			
No	81(49.09)	84(50.91)	**0.332**
Yes	5(35.71)	9(64.29)	
Don't know where to go (treatment style)			
No	51(70.83)	21(29.17)	**0.001****
Yes	35(32.71)	72(67.29)	

Table 25 Association between patient's delay and reasons for going to seek care outside (beside health center) (cont.)

Variables	Delay n=86 (%)	Non delay n=93 (%)	p-value
Consider as a common illness			
No	8(47.06)	9(52.94)	**0.932**
Yes	78(48.15)	84(51.85)	

** p-value < 0.01

CHAPTER V
DISCUSSION

Based on the objectives, this study aimed to study the patient's delay in seeking care at health care facility among pulmonary tuberculosis patients, to identify socio economic characteristics, enabling and reinforcing factors and to identify the association between patient's delay and those variables.

This descriptive cross-sectional study was implemented among TB patients living in Pursat Province. The interviewing method with structured questionnaires was used to collect data. The main findings would be discussed as follow:

5.1 Delay duration in seeking care

This study revealed that proportion of patient delay was 48.05 percent and mean patient delay was 7.04 weeks with standard deviation 6.11. Comparing with previous studies, the mean of the delay was shorter than the result of Syrian Arab Republic (F.Maamarit, 2003) [12] and Myanmar migrant in Thailand (M.Thaw, 2005) [13]. The proportion of the respondents' delay reported in this study was also less than the proportion of the respondents' delay reported in M.Thaw work (71.34%), and F.Maamarit work (69.80%).

However, one similar study conducted in rural area in Cambodia to compare delay between pilot (DOTS available at HC) and control district (DOTS available in hospital) showed that average patient delay were 8.28 weeks in pilot and 33.14 weeks in control (Saint Saly, Decentralized DOTS shortened delay to TB treatment, 2002) [11].

Main reason for patient delay in seeking care among pulmonary tuberculosis patients may they didn't know where to go. It was statistically significant

association with patient delay ($p < 0.01$). Moreover most of patients participated in this study had already gone to non-oriented TB health service beside public sector, especially at drug store, traditional healer, and some applied self medication and private clinics. The results from this study also reported that among patients who decided drug store as health care provider, 53.27 percent of those had delayed in seeking TB service, and 64.29 percent for whom applied self medication had delayed. It means that they had already spent a lot of resources in term of money and times at unnecessary outside. Another reason may that patients (great majority of the respondents) thought that TB was a common illness and could occur frequently in their life.

These implied that patients as well as community still believe in their ways or practice to care their illness or disease. They might not get any information or orientation regarding to TB symptoms and its treatment. It also expressed the weakness of collaboration between private and public sectors. These choices for seeking care were significantly association with patient delay ($p < 0.05$).

This finding was similar to a study in Syrian Arab Republic [12]. It showed that among significant risk factor was seeking initial care at non-health care provider and having more than one health care encounter before diagnosis, and other study in Southern of Thailand [14] reported that visiting at non-qualified provider associated with delay.

5.2 Socio economic characteristics

It showed that elderly people (> 65 years) participated in this study occupied only 13.97 percent and patients aged between 41-64 years was 41.34 percent. 64 percent of the elderly patients had delayed in seeking care, whereas young group aged 17-40 years (44.69%) had delayed only 36.25 percent. It was remarkably different from a study in delay among Myanmar migrant patients. It reported that there were delayed over 70 percent (M thaw, 2005).

Elderly patients might think that coughing or having respiratory symptoms were common illness, or caused by smoking because it happened frequently to him/her. It also demonstrated an inadequate knowledge of patients about TB disease in term of symptom, DOTS service and benefit of treatment. However, this factor (age of respondent) was found the significant association with the patient delay. It is similar to a finding in study of M.Rojpibulsit et al., 2004.

Regarding to gender of respondents, it looked like homogenous in both male and female. Nearly one-half of the participants (49.16%) was female, among those 47.73 percent had delay, while male patients, 48.35 percent delayed. It showed the equal access between male and female patients to get TB service.

A majority of the respondents (82.49%) in this study were married patients; over one-half of those (54.79%) had delayed in seeking care comparing with single group (13.79%). This delay was higher than a finding in Long an Province, Vietnam (L.T Liem, 1999), but less than Myanmar migrants (M. Thaw, 2005). Marital status of respondent was found a significant factor associated with the patient delay. It implied that single patient has more chance to see health professional than married patients who take responsibility for a whole family aspects.

Level of education of patients mostly was primary school (45.25%), no education 25.14 percent, and attendance at secondary school only 20.11 percent. It was not quite different from other studies in developing countries; Vietnam [15], Myanmar [13] and Southern part of Thailand [14]. More than half of each level already delayed in seeking care. These patients had an inadequate basic knowledge as well as the knowledge about tuberculosis disease that's why they can not get any health message or information resulting in making improper decision to find out a good quality TB service.

Over one-half of patients (56.98%) were farmer. It was less than a finding in previous study in rural area in Cambodia reported at 76.80 percent [11]. However, the result was also similar to a finding in Long an Province, Vietnam. 56.86 percent

out of farmer patients had delayed while the jobless delayed at 53.33 percent. There might be many reasons related to patient delay in this circumstance. Some of reasons refer to knowledge (basic and tuberculosis) and opportunity. However, occupation was found a statistically significant association with the patient delay. This was different from other previous studies in Vietnam [15], Myanmar migrant in Thailand [13] and in Cambodia itself [11].

Nearly four-fifths of the respondents (79.84%) participated in the study were head of household and spouse of household. 50.91 percent of the head of household showed that delayed in seeking care and 48.57 percent of spouse of household also delayed . Meanwhile, families with more members were likely to be more delay. There were 43.12 percent of families with 4-6 members belonging to delay group and 69.44 percent of those with more than 6 members had delayed. The household and family members were statistically significant association with the patient delay. This findings and reasons might be similar to the married respondents in term of responsibility and opportunity.

5.3 Perception of patient on tuberculosis

Regarding overall level of perception of patients participated in the study, descriptive statistics revealed that nearly four-fifths of the respondents (79.33%) got a high score level of perception and moderate level got only 20.67 percent. However, 81.08 percent of moderate level group had delayed, and it was higher compared with other group which was 39.44 percent. Focusing on more detail in perception on severity of TB disease and its spreading, it seems to be likely as same as overall perception. Moderate level group of perception on severity of TB was higher delay (72.41%) than high level group. This result demonstrated that low perception of TB disease and benefits of treatment can prolong patients to seek TB diagnosis and treatment. They usually applied the norms or beliefs to solve the problems related to disease and other health issues.

The high level group of perception in this study was higher, in contrast, than previous findings in the neighbor countries, Long an, Vietnam it reported that 6.30 percent for high level and 76.00 percent for moderate one. Whereas a study in Myanmar migrant in Thailand had shown that 14.65 percent of the respondents have high score level.

A majority of the respondents (86.59%) were still feeling of isolation and rejection from family and society as well. In Cambodia, TB is often linked in people's minds with HIV co infection, which may compound a person's fear of stigmatization from the public. Thus, they have less opportunity to afford to look for health care services out side. It is similar to a finding in a s study in Syrian Arab Republic (F. Maamarit, 2003). It found that feeling a high degree of stigma was a significant risk factor associated with patient delay.

However, perception of respondents on tuberculosis was a significant association with patient delay. This result was likely respond to the finding above in term of reasons for not coming to TB health center earlier. It needed to take any intervention to improve awareness as well as perception resulting in changing their behavior and practice by providing health education and promotion in community.

5.4 Knowledge of patient about tuberculosis

Regarding knowledge of patient about tuberculosis, it revealed that nearly two-thirds of the respondents (62.01%) had fair knowledge. This figure is similar to a finding in study in Long an, Vietnam in term of level of knowledge of respondent about tuberculosis. However, it was remarkably different from finding in Myanmar migrant patients which was more than half (51.59%) of the patients with poor knowledge.

Even if they had fair and good knowledge about tuberculosis, they still delayed in seeking TB care when they got infection. The evidence showed that 54.05 percent of the respondents with fair knowledge delayed and 47.62 percent for good

knowledge groups. However, the good knowledge group had less delay in number and percentage.

In general idea, it was assumed that good and fair knowledge group of patients should apply their knowledge or understanding about disease in a right way to find out proper health services. It means that TB patients with fair and good knowledge should go to consult with medical doctors or health personnels earlier as possible compared with poor knowledge patients. In contrast, we found that only 34.04 percent of respondents with poor knowledge had less delayed compared with other group (fair knowledge).

Looking backward to data collection process, the most of respondents were already exposed to health education on tuberculosis provided by health center staffs or village health support group (as volunteer). Nearly hundred percent (99.44%) knew that the most useful method to detect TB is direct sputum examination, 97.77 percent knew that the route of TB transmission was through the airway, and 96.09 percent had recognized that tuberculosis can be cured by anti TB drugs combinations.

Although they exposed, patients still not clear about an important knowledge, for example, part of the human body where TB is located, TB transmission and measures to prevent somebody from getting TB infection. It revealed that the level of respondent's knowledge is still inadequate. Under this circumstance, how can they apply their knowledge into proper practice? Any intervention needed to generate the knowledge of villagers.

Therefore, health education remains a useful intervention to improve the knowledge and affecting patient's attitude and behavior. In order to get effectiveness, health education should use relevant methods and right messages to meet specific target group.

A study in Kanchanaburi Province, Thailand (I.S ya, 2008) revealed that knowledge of patient about tuberculosis affected to attitude and behavior of patients in

treatment and prevention. However, the finding in this study showed that knowledge of patient was not statistically significant associated with patient delay.

5.5 Availability of TB services

Nearly hundred percent of the respondents (99.44%) replied that TB services were available at health center. Among those, 91.01 percent said at least one TB service available and 8.99 percent of them have more than one. This implied that TB services were successfully expended to health centers at peripheral level. Regarding to mobile TB services in community, a great majority of the respondents (93.85%) have mobile TB service in their villages. There were 39.88 percent of above respondents have one mobile service, 60.12 percent have more than one. National policy for TB control program aimed to reach the objective of hundred percent of DOTS coverage nationwide in order to provide DOTS service with quality and equity (NTP Policy, Cambodia 2005) [8].

Although TB services were available at both health center and in community, some patients still delay in seeking health care as they feeling illness or uncomfortable especially symptoms regarding tuberculosis. Among respondents saying TB service available in community, 46.43 percent had delayed and more than half belong to non delay group. On the other hand, 22.39 percent out of the patients whose village have one mobile TB service were late for utilization of public health services mainly TB-DOTS delivery. Results from this study have also, in contrast, revealed that 46.89 percent of respondents replying their villages have more than one mobile TB-DOTS service were delayed too. However, this study observed that factor of number of mobile TB service in villages or in community was statistically significant associate with patient delay.

This finding was similar to the finding in previous study conducted in Cambodia, 2002 (Saint Saly, 2002). It found that the existence of appropriate health care facilities that provide TB diagnosis and treatment within an accessible distance for the poor was a key to shortening the delay in rural areas.

Source of information was also an important factor affecting on patients to make a proper decision in seeking diagnosis and treatment. There were many sources which patients get information from. Nearly two-thirds of the respondents (61.45%) said that they got information about tuberculosis and its service from mass media.

Unfortunately, even they got messages or information about tuberculosis, results of study showed that 49.09 percent of those come late to receive diagnosis and treatment. It was higher than those didn't get (46.38%). It was also similar to the patients received information from Village Health Support Group (VHSG). It was slightly over three-fourths of the patients (75.42%) participating in the study replied that they got information for VHSG, 48.89 percent of this group belong to the delay.

Health center staffs played an important role in reducing the delay. They could disseminate effectively information to community through routine outreach activities, health education and health promotion program. Among patients who got information from health center staffs, there was only 43.40 percent become late. It was less than that those didn't get which was over one-half (54.79%).

Regarding the policy of national tuberculosis program, TB patient especially cured patients were considered as peer educator. Because they thought that unless TB patient themselves could recognize and understand each other about symptoms or complaints. They have experienced about treatment, adherent, side effects and benefit of being cured from the disease. As result, they can encourage and motivate TB suspects to seek diagnosis and treatment early. This study evidenced that among patients got information from TB-cured patient, 28.81 percent of them had delayed. It was two times less than those didn't get.

Patient's friend was also affect in reducing patient delay. This study revealed that nearly one-thirds of the respondents (32.43%) who get information from their friend had delayed in seeking treatment, and there were 52.11 percent for those didn't get. Nevertheless, the study found that TB-cured patient and friend were

statistically significant association with patient delay. These findings never found in previous studies like in Long an, Vietnam and in Myanmar migrant in Thailand.

Dealing with reasons for coming to TB health center, 96.09 percent of the respondents said that they come to TB service due to their symptoms or illness become worst and worst. A part of this group, 47.67 percent belong to the delay group in seeking diagnosis and treatment at DOTS center. It implied that they paid less attention or he/she can adapt to mild symptoms or illness, unless it became intolerant or severe he/she come to health care facilities. In contrast, if symptoms did not become worst they would stay for long time at home or they went to health provider unnecessary (57.14%).

It was similar to mention above, some patients (57.89%) came to seeking treatment after he/she got an advice from someone. If he/she didn't get any advice, he/she might spent time longer and longer. This may relatively respond to the above findings that patient get information from TB-cured patient and their friend. A strong evidence was that if patient got result showing he/she has tuberculosis, there was no reason for waiting long time, 100 percent non delay. We concluded that tuberculosis patient need the evidence or exact information to show that they have TB disease.

Meanwhile, confidence can also be a factor to motivate patient to make decision in which they believed. As result showed that among respondents who have convenience with health care service, 43.66 percent were late. It was less than those have no confidence (64.86%). It demonstrated that the factors associated with patient delay not only advice from somebody or evident result from laboratory, but also the convenience of patient in health care services. Quality of TB services might be a factor associated to prolong patient in seeking health care. Therefore, we need further study to deal with quality of TB-DOTS, how impact to patient delay.

5.6 Accessibility to TB service

There was over one-half of the respondents (54.70%) lived within 3 kilometers in distance from health center, 32.96 percent located between 3-5 kilometers, and more than 5 kilometers from health center was 12.29 percent. It was quite different from other study in Long an, Vietnam which was nearly fifty percent of the respondents located between 10-30 kilometers from health center. But it was similar to a study in Myanmar migrant patients in Thailand reported that 51.59 percent lived within 3 kilometers.

Result of the study revealed that among patients lived within 3 kilometer had delayed 61.22 percent; it was two times more than other two groups. There were 36.36 percent of the respondents who live in distance longer than 5 kilometers had also delayed in finding health care. But first two groups (0-3 km and 4-5 km) had less delayed compared with a finding in M.Thaw work [13] which was over seventy percent delayed.

Referring to mode of transportation, nearly one-half of the patients used motorcycle as transportation for travelling to get DOTS service, 37.43 percent came by bicycle, and 12.85 percent on foot. It was different from Myanmar migrant patients used bus as a transport [13], but similar to situation in Vietnam [15] where patients usually use motorcycle or bicycle for travelling (L T liem, 1999). This study was found that mode of transportation was not significant factor related to the patient delay.

Relating to mode of transportation which patients used for going to get services and DOTS delivery, patient had to pay for it. Quoting from patient's answer, 52.51 percent of the respondents said that they paid within 1 000 Riels (Cambodia currency) a time, 41.90 percent spent between 1 000-5 000 Riels, and 5.59 percent spent more than 5 000 Riels for travelling. Based on the amount that patient has to spend for travel, for poor patients may not be affordable. Therefore, it left patient late or delay in seeking care. As results showed that among patients paid within 1000 Riels, 60.64 percent had delayed, 32 percent for whom paid 1 000-5 000 Riels, and 50 percent for those spent more than 5 000 Riels.

These findings were as same as a study in rural area in Cambodia [11]. The result of study revealed that distance and travel cost were significant factors associated with the patient delay.

A great majority of the respondents (97.77%) spent less than 30 minutes for waiting DOTS delivery; among those 47.75 percent belong to delay group. As asking about expenses for DOTS services, nearly hundred percent of the respondents (99.44%) participated in the study said that DOTS services were free of charge (no payment at all). Although, there was 47.75 percent of them had already delayed. Waiting time for DOTS delivery and expenses for DOTS were not associated with patient delay.

Regarding traveling time, it depended upon distance and mode of transportation. More than one-half of the patients (53.33%) who spent less than 30 minutes for traveling had delayed; it was higher than those spent more 30 minutes (31.81%). We noticed that patients who living near health center (within 3 kilometers) and/or spent less time for traveling have a high percentage in delay compared to other groups. It may be more or less health personnels or health-related agencies ignored or overlooked the nearest target by more concentration in remote areas.

CHAPTER VI
CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Main objective of this study were to identify factors associated with patient's delay among pulmonary tuberculosis patient living in Pursat Province, and to identify respondent's characteristics including socio economic factors, enabling factor (availability and accessibility) and reinforcing factors.

As result, we concluded that patient's delay was 48.05 percent in which 25.70 percent short delay (4-8 weeks) and 22.35 percent long delay (>8 weeks), and non delay was 51.96 percent. The average delay duration was 7.04 weeks with standard deviation 6.11, maximum was 50 weeks and minimum was 2 weeks. Regarding characteristics of respondent and determinants associated with patient's delay, the summary was as below:

6.1.1 Socio economic characteristics

It was a homogeneous distribution participation in term gender, proportion of male to female nearly 1:1; most of them got married (82.49%). Marital status was a statistically significant factor associated with patient's delay. A majority of the respondents (44.96%) was in young group aged 17-40 years and elderly group (>65 years) was 13.97 percent. It was slightly over one-fourths of the respondents (25.14%) were no education, and nearly one-half (45.25%) were primary school.

Over one-half of the respondents (56.98%) were farmer and the jobless people (16.76%). It was over two-thirds (69.84%) were head of household or spouse of household with family member at least 4 people. Generally, they could generate monthly family income 255 356 Riels in average, maximum 800 000 Riels (1

household) and minimum 30 000 Riels. Results form this study revealed that patient's delay was associated with some respondents' characteristics, gender, marital status, educational level, current occupation, relationship to household, and family members.

6.1.2 Knowledge of patient

Knowledge of patients about tuberculosis was classified into 3 groups based on the Bloom's criteria. 62.01 percent of the respondents have fair knowledge, 11.73 percent good, and poor knowledge covered over 26.26 percent. More delay was found in fair knowledge group, it was up to 54.05 percent. Whereas good knowledge group had less delay, in number and percentage, in seeking TB health care. They could apply their knowledge into a right behaviour and practice.

Knowledge was divided into two parts, knowledge about TB and spreading and knowledge about treatment and prevention. Referring to knowledge about tuberculosis and its spreading, 39.66 percent of the respondents have fair knowledge, and 45.25 percent were poor. It was similar to knowledge group, most of delay was observed in the fair group. Whereas knowledge about treatment and prevention, 55.30 percent of the total patients has good knowledge, and 42.45 percent were fair. However, knowledge of patient about tuberculosis found that it was not significant factor related to patient's delay.

6.1.3 Perception of patient

Same as knowledge, perception was classified into 3 level based on Best rating criteria. It was over three-fourths of the respondents have a high level of perception (79.33%) and the rests was moderate level. A majority of the patient's delay (81.08%) was in moderate level group in overall perception category, it was two times more than high level group. Contrasting with knowledge, perception of patient on tuberculosis was recognized that it was a significant factor associated with patient's delay.

6.1.4 Availability of TB services

TB-DOTS services were expanded through out health centers. Nearly hundred percent of respondents (99.44%) said that TB service was available at health center, among those 91.01 percent said it was available at least one. Referring to mobile TB service, a large majority of the respondents (93.85%) said TB services were also available at mobile health services. They expressed that some villages (39.88%) have one, and the rests said at least two. The important thing was that among respondents said TB service not available at mobile service, 72.73 percent belong to delay group. Therefore, the existence of TB service at mobile health services was considered as a factor associated with patient delay in seeking diagnosis and treatment for tuberculosis patients.

6.1.5 Accessibility to TB services

In this study we found that a great majority of the respondents (87.71%) living within 5 kilometers from health centers. There was nearly one-half of the patients (49.16%) used motorcycle as a transportation to get TB-DOTS delivery, 37.43 percent by bicycle, and 12.85 percent on foot. Among on foot-traveling group, there was 56.52 percent belong to delay group in seeking health care.

Usually, patients (75.42%) spent less than 30 minutes for traveling to TB health service. It was over one-half of those (53.33%) had delayed. Regarding expenses for transportation, a large majority of the respondents were spent within 5 000 Riels for traveling. However, the distance, travel cost and traveling time were found as statistically significant factors associated with patient delay in this study. Whereas waiting time for DOTS delivery and expenses for DOTS services were not related to the delay. A large majority of the respondents (97.77%) normally spent less than 30 minutes foe DOTS delivery and nearly hundred percent of total respondent said TB-DOTS services were for free of charge.

6.1.6 Reinforcing factors

Regarding the reasons for coming to TB health services, 96.09 percent of the respondents said they come due to their symptoms become worst, 79.33 percent

said coming with the reason of convenience in health care service, and 53.07 percent due to an advice from someone and the rest 5.67 percent due to laboratory result as tuberculosis. These reasons, advice, lab result and convenience were significant factors associated with patient delay. There was 64.86 percent of the respondents who have no convenience in health care service had delayed; it was higher than those have convenience. A hundred percent of patients who have laboratory result as tuberculosis were not delayed.

Concerning sources of information about tuberculosis to motivate and encourage TB patient to seeking diagnosis and treatment, the results showed that 75.42 percent of respondents got information from Village Health Support Group, 32.96 percent from TB-cured patients, and 20.67 percent received from their friend. Between delay and non delay category, there was similar to each group which includes mass media, health center staff, VHSG, NGO's staff and relative. It means that delay and non delay was around fifty percent. But there was 28.81 percent of the respondents who received information from TB-cured patient had delayed in getting health care service, it was two times less than those didn't get it. Whereas patients did not get information from friend had delayed 52.11 percent, it was higher than those received it. However, sources of information about tuberculosis were found that it was a statistically significant factor related to the patient's delay.

6.2 Recommendation

On the basis of data collection process and the findings from this study, some recommendations were raised to be applied for reducing patient's delay, and for better improving further study.

For national TB program

- As result showing that the existence of TB service was affected to the patient's delay, national TB control program should consider about DOTS expansion through mobile services with regular supervision at grass rout level. Thus, people at rural area especially poor patient can access to TB service.

- National program should establish a policy on collaboration with private sectors, by setting up referral system and providing basic knowledge on tuberculosis to private physician. There was over one-half of the respondents used drug stores or private clinics before coming to TB services, result reported.

For Program implementers

- Results were also revealed an inadequate knowledge of the respondents and lack of collaboration with other sectors. The program implementers should focus on strengthening and promoting awareness on tuberculosis in general population through provision of health education and awareness campaign in communities especially risk target group.

- Collaboration with HIV/AIDS program at all level in order to reduce the delay in making diagnosis and treatment by screening for TB among HIV(+) patients.

- Close collaboration with all partners especially NGO's which were working with health sector to support main activities including TB awareness promotion, referral system and monitor DOTS implementation. Thus, we can increase TB awareness and reduce patient's delay in making TB diagnosis and treatment.

- Promoting community participation mainly health volunteer, community leader, commune development committee and women association to involve in DOTS program. What we want is early diagnosis, and early treatment.

For further study

- In this study aimed to study in patient's delay alone, if any similar study should be conducted in dealing with health system delay in order to identify diagnosis delay and treatment delay and quality of TB-DOTS services, and to determine factors associated with health system delay.

- Based on experience in data collection process, it was noticed that almost of respondents were already exposed to health education provided by health workers. Therefore, if any similar study should collect data or doing interview before respondents have been exposed. It is for the reason of avoiding information bias.

- Interviewers should not be selected or hired from health personnels for avoiding information bias.

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APPENDIX

APPENDIX A

QUESTIONNAIRES

PATIENT'S DELAY FOR SEEKING CARE AT HEALTH CARE FACILITY AMONG PULMONARY TUBERCULOSIS PATIENT IN PURSAT PRIVINCE, CAMBODIA

Date of interview ------- /------- /------

Name of interviewer ----------

Part I. General information

Name of health center ----------

Name of Operational District ----------

Date of treatment started ---------- /---------- /----------

Part II. Socio economic characteristics

Please fill in the blanket or check (✓) in the appropriate box ☐ to answer the questions:

1. How old are you? ----------years
2. What is your gender?
   ☐ 1-Male ☐ 2-Female
3. What is your present marital status?
   ☐ 1-Single
   ☐ 2-Married
   ☐ 3-Divorced
   ☐ 4-Others (specify) ----------
4. What is your educational level?
   ☐ 1-No education ☐ 2-Primary school
   ☐ 3-Secondary school ☐ 4-Colle

☐ 5-Others (specify) ----------

5. What is your current occupation?

☐ 1-None/Jobless ☐ 2-Farmer

☐ 3-Govt. officer ☐ 4-Business

☐ 5-Others (specify) ----------

6. What is your relationship to the household head?

☐ 1-Head of household ☐ 2-Spouse of household head

☐ 3-Son/daughter ☐ 4-Others (specify) ----------

7. How many family member is/are in your household (including yourself)?

☐ 1:1-3 members

☐ 2:4-6 members

☐ 3: > 6 members

8. How much is your total monthly income from all sources?

(in Riel, Khmer currency) ----------Riel

Part III. Knowledge of patient about tuberculosis

Please fill in the blanket or check (✓) in the appropriate box ☐ to answer the questions:

9. What is the Tuberculosis?

☐ 1- Contagious ☐ 2- Infectious

☐ 3- Genetic/heterogeneous ☐ 4- Spirit of ghost

10. What is the cause of Tuberculosis (TB)?

☐ 1-Bacteria ☐ 2-Virus

☐ 3-Smoking ☐ 4-Traumatism

11. The TB germ is called:

☐ 1-TB ☐ 2- Mycobacterium tuberculosis or Bacilli of Koch

☐ 3-Shigella ☐ 4- Helicobacter

12. Which part of the human body where Tuberculosis is located?

☐1- Lung fields ☐ 2-Bone

☐ 3-Lymp node ☐ 4- All part of the body

13. What is the root of TB transmission?

☐ 1-Blood ☐ 2-Digestive tract

☐ 3-Airway ☐ 4-Skin

14. TB bacilli can spread out and transmit to other people through:

☐ 1-Having meal together ☐ 2- Drinking with the same glass

☐ 3-Sleeping in the same net ☐ 4-Coughing/sneezing without cover

15. If parents got TB and untreated, people who have the chance to get infection from him/her is:

☐ 1- Spouse ☐ 2- People living in the same roof

☐ 3- Neighbour ☐ 4- All above

16. What is the most important sign of pulmonary tuberculosis?

☐ 1-Haemoptysis ☐ 2-Chest pain

☐ 3-Dyspnea ☐ 4-Chronic cough more than 3 weeks

17. What are the symptoms of pulmonary tuberculosis?

☐ 1-Chronic cough>3 weeks, haemoptysis, shortness of breath, and fever

☐ 2-Haemoptysis, chest pain, shortness of breath, weight loss

☐ 3-Chronic cough>3weeks, mild fever at evening, night sweat, weight loss

☐ 4-Chest pain, high fever, chronic cough, weight loss

18. Which one of the followings is the most useful method to detect tuberculosis?

☐ 1-Sputum examination ☐ 2-Tuberculin skin test

☐ 3-Blood test ☐ 4-Urine test

19…...Tuberculosis can be cured by

☐ 1- Recovered itself ☐ 2- Traditional medicines

☐ 3- Antibiotics ☐ 4- Anti TB drugs combination

20. The duration for completing TB treatment successfully is:

☐ 1- 4 months only ☐ 2-6 months only

☐ 3- 6-8 months ☐ 4-12 months

21….. In general, when any TB patient got anti TB drugs, he/she would have some common side effects such as:

☐ 1-Olyguria ☐ 2- Diarrhea

☐ 3-Skin rash/mild fever ☐ 4- Blindness

22……The measure to prevent a baby from getting severs tuberculosis is to:

☐ 1- Isolation ☐ 2- Stop breastfeeding

☐ 3- Provide BCG vaccination ☐ 4- Provide nutrition

23……The measure(s) to prevent somebody from getting TB infection is/are to:

☐ 1- Cover mouth when patient cough ☐ 2-Treat patient

Part IV. Perception of patient on tuberculosis

In the following statement, Please check (√) in the appropriate box ☐ to make the correct answer of the question:

SA : Strongly agree, A : Agree, UN : Undecided

D : Disagree, SD : Strongly disagree

No	Statement	SA	A	UN	D	SD
24	Every body can have a chance to get infection from an untreated TB patient					
25	TB patient usually lost the time from work due to the disease					
26	TB patient can do daily work during the treatment course					
27	To cut the chain of TB transmission unless cured TB patient					
28	People who got TB infection can develop the disease in short time if they have low immunity (e.g. HIV/AIDS, DM,…)					
29	Tuberculosis can lead to disability(e.g. lung fibrosis…) if not early diagnosed and treated					
30	TB patient is usually feeling of isolation from family as well as society					
31	Tuberculosis is curable with traditional medicines					

SA : Strongly agree, A : Agree, UN : Undecided

D : Disagree, SD : Strongly disagree

No	Statement	SA	A	UN	D	SD
32	Women can't get pregnant during the TB treatment course					
33	TB cured patient can't re infect from other infectious patient					
34	Tuberculosis can recover without treatment					
35	Tuberculosis can be cured even those patient have HIV(+)					
36	Patient can work as usual after completing their treatment					

Part V. Availability of TB service at health center

Please check (✓) in the appropriate box ☐ to make the correct answer of the questions:

37……Is there any TB service available at health center?

☐ 1-Yes ☐ 2-No

(If the answer No. please skips to question 39)

38. How many TB health centers are in/near your resident areas/commune?

☐ 1: None

☐ 2: 1 only

☐ 3: >= 2

39. Is any TB service available at mobile health services in your village?

☐ 1-Yes ☐ 2-No

(If the answer No. please skips to question 41)

40. How many mobile TB services are available in your village?

☐ 1- One only

☐ 2- Two-three

☐ 3- More than three

Part VI. Accessibility to TB service

Please check (✓) in the appropriate box ☐ to make the correct answer of the questions:

41. How far is your house from the TB health center?

☐ 1: 0-3 Km

☐ 2: 4-5 Km

☐ 3: > 5 Km

42. How can you travel from your house to TB health center?

☐ 1-On foot

☐ 2-By bicycle

☐ 3-Motorcycle

☐ 4-On boat

☐ 5-Taxi/Bus

☐ 6-Others (specify) ----------

43. How much did you spend for travel costs from house to TB health center?

☐ 1: 0-1 000 Riel

☐ 2: 1 500-5000 Riel

☐ 3: > 5 000 Riel

44. How long have you spent for traveling to TB health center?

☐ 1: < 30 minutes

☐ 2: 30 minutes-1 hour

☐ 3: > 1 hour

45. How long did you wait for receiving DOTS delivery every day?

☐ 1: < 30 minutes

☐ 2: 30 minutes-1 hour

☐ 3: > 1 hour

46. How much do you have to pay for DOTS service?

☐ 1: Don't have to pay

☐ 2: 5 000-10 000 Riel

☐ 3: 10 100-50 000 Riel

☐ 4: > 50 000 Riel

Part VII. Reinforcing factors

Please check (✓) in the appropriate box ☐ to make the correct answer of the questions:

47……What is your main reason for coming to TB health center?

☐ 1- Symptom become worse ☐ Yes ☐ No

☐ 2- Someone advised ☐ Yes ☐ No

☐ 3- Lab result ☐ Yes ☐ No

☐ 4- Convenient ☐ Yes ☐ No

☐ 5- Others (specify) ----------

48……Where did you get the information about tuberculosis?

(Can answer more than one)

a. Mass media ☐ Yes ☐ No

b. Health center staffs ☐ Yes ☐ No

c. VHSG ☐ Yes ☐ No

d. NGO's staffs ☐ Yes ☐ No

e. TB cured-patient ☐ Yes ☐ No

f. Friend ☐ Yes ☐ No

g. Relative ☐ Yes ☐ No

49……Who given you an advice to come to TB health center?

☐ 1-Health center staff

☐ 2-VHSG

☐ 3-NGO's staff

☐ 4-TB cured-patient

☐ 5-Relative

☐ 6-Friend

☐ 7-Others (specify) ----------

50. Who have made decision to send you to TB health center?

☐ 1-Yourself

☐ 2-Your spouse

☐ 3-Your parents

☐ 4-Others (specify) ----------

Part VIII. Patient delay in seeking health care

Please check (✓) in the appropriate box ☐ to make the correct answer of the questions:

51. How long did you spent for treatment outside since your first recognition of illness until visiting TB health center? You can specify in:

…… month/ or …… weeks/ or …….. Days

52. Where did you go to seeking health care after getting first recognition of illness or symptoms? Please specify rank and time duration of each step.

Health care services	Ranking	Duration in (days/weeks)
☐- Self-medication		
☐- Traditional healer		
☐- Drug store		
☐- Private clinic		
☐- Public health center/hospital		
☐-Others (specify)……		

(If respondent said "first visit at public health center/hospital" stop interview, and please say "thank you" to interviewee for their kind cooperation).

53……What is your reason for going there? (Can answer more than one)

☐ 1- Convenient ☐ Yes ☐ No

☐ 2- Easy to get service ☐ Yes ☐ No

☐ 3- Financial problem/cheap ☐ Yes ☐ No

☐ 4- Don't know where to go ☐ Yes ☐ No

☐ 5- Common illness ☐ Yes ☐ No

☐ 6- Others (specify) …….

APPENDIX B

QUESTIONNAIRES (in Khmer Version)

ការយឺតយ៉ាវរបស់អ្នកជំងឺក្នុងការស្វែងរកសេវាព្យាបាលក្នុងចំណោមអ្នកជំងឺរបេងសួត នៅខេត្តពោធិសាត់ ប្រទេសកម្ពុជា

កាលបរិច្ឆេទនៃការសំភាសន៍ ថ្ងៃ.....ខែ .....ឆ្នាំ ២០០៩

ឈ្មោះអ្នកសំភាសន៍ .....

ផ្នែកទី១ : ពីឥទ្ធានទូទៅ

ឈ្មោះមណ្ឌលសុខភាព .....

ឈ្មោះស្រុកប្រតិបត្តិ .....

ថ្ងៃ ខែ ឆ្នាំ ចាបផ្តើមការព្យាបាល ថ្ងៃទី ..... ខែ .....ឆ្នាំ ២០០...

ផ្នែកទី២ : ស្ថានភាពសេដ្ឋកិច្ចសង្គមរបស់អ្នកជំងឺរបេង

ចូរបំពេញកន្លែងចន្លោះ រឺ គូសសញ្ញា (√) ក្នុងប្រអប់ ☐ ចំលើយត្រឹមត្រូវក្នុងសំណួរដូចខាងក្រោម:

១. តើលោក-លោកស្រីមានអាយុប៉ុន្មាន .....ឆ្នាំ មកដល់សព្វថ្ងៃនេះ?

២. ភេទ

☐ ១.ប្រុស ☐ ២. ស្រី

៣. តើស្ថានភាពជីវិតគ្រួសាររបស់លោក-លោកស្រី យ៉ាងដូចម្តេចដែរ?

☐ ១. នៅលីវ

☐ ២. រៀបការរួច

☐ ៣. លែងលះ

☐ ៤. ផ្សេងពីនេះ (សូមបញ្ជាក់) .....

៤. តើលោក-លោកស្រីបានទទួលការអប់រំចំណេះដឹង កំរិតណាដែរ

☐ ១. គ្មាន ☐ ២. បឋមសិក្សា

☐ ៣. មធ្យមសិក្សា ☐ ៤. វិទ្យាល័យ

☐ ៥. ផ្សេងពីនេះ (សូមបញ្ជាក់) .....

៥. តើលោក- លោកស្រីប្រកបមុខរបរអ្វីដែរ សព្វថ្ងៃនេះ ?

☐ ១. គ្មានមុខរបរ ☐ ២. កសិករ

☐ ៣. បុគ្គលិករដ្ឋ ☐ ៤. រកស៊ី-លក់ដូរ

☐ ៥. ផ្សេងពីនេះ (សូមបញ្ជាក់).....

៦. តើលោក-លោកស្រីមានទំនាក់ទំនងអ្វី ជាមួយគ្រួសារ?

☐ ១. មេគ្រួសារ ☐ ២. ប្តី/ ប្រពន្ធ

☐ ៣. ជាកូន ☐ ៤. ផ្សេងពីនេះ (សូមបញ្ជាក់) .....

៧. តើមានសមាជិកប៉ុន្មាននាក់នៅក្នុងគ្រួសាររបស់អ្នក (រាប់បញ្ចូលទាំងរូបលោក-លោកស្រីផង)?

☐ ១: ១-៣ នាក់

☐ ២: ៤-៦ នាក់

☐ ៣: លើសពី ៦នាក់

៨. តើជាមធ្យម គ្រួសារលោក-លោកស្រីមានចំណូលពីប្រភពផ្សេងៗប៉ុន្មានប្រចាំខែ?

(គិតជារៀល) .....រៀល

ផ្នែកទី៣: ចំណេះដឹងរបស់អ្នកជំងឺ ស្តីពីជំងឺរបេង

ចូរបំពេញកន្លែងចន្លោះ ឬ គូសសញ្ញា (√) ក្នុងប្រអប់ ☐ ចំលើយត្រឹមត្រូវក្នុងសំណួរដូចខាងក្រោម:

៩. តើជំងឺរបេង ជាអ្វី ?

☐ ១. ឆ្លងតាមការប៉ះពាល់ ☐ ២. ជាជំងឺឆ្លង

☐ ៣. ជាជំងឺតពូជ ☐ ៣. ព្រលឹងនៃខ្នោចព្រាយបីសាច

១០. ជំងឺរបេងបង្កឡើងដោយ

☐ ១. ពពួកបាក់តេរី ☐ ២. ពពួកវីរុស

☐ ៣. ការជក់បារី ☐ ៤. គ្រោះថ្នាក់ដោយការប៉ះទង្គិច ឬគ្រាំគ្រា

១១. មេរោគរបេង មានឈ្មោះហៅថា

☐ ១. របេង ☐ ២. បេកា

☐ ៣. ស៊ីសែលលា ☐ ៤. អេលីក្លូបាក់តែ

១២. តើជំងឺរបេង កើតឡើងនៅកន្លែងណានៃដងខ្លួនមនុស្ស?

☐ ១. នៅក្នុងសួត ☐ ២. នៅក្នុងឆ្អឹង

☐ ៣. នៅហ្នឹងកូនកណ្តុរ ☐ ៤. នៅគ្រប់កន្លែងទាំងអស់នៃដងខ្លួនមនុស្ស

១៣. ផ្លូវចំលងមេរោគរបេង ពីអ្នកកើតជំងឺរបេងទៅអ្នកផ្សេងទៀត តាមរយៈ

☐ ១.ឈាម ☐ ២. ផ្លូវដង្ហើម

☐ ៣. ផ្លូវដង្ហើម ☐ ៤. ស្បែក

១៤. មេរោគរបេង អាចសាយភាយ និងចំលងពីអ្នកកើតរបេង ទៅអ្នកដទៃទៀតតាមរយៈ

☐ ១. ហូបអាហារជាមួយគ្នា ☐ ២. ផឹកទឹកកែវរួមគ្នា

☐ ៣. ដេកក្នុងមុងជាមួយគ្នា ☐ ៤. ក្អកវីកណ្តាស់ដោយគ្មានកន្សែងវីក្រមាគ្របមាត់

១៥. បើសិនឱពុក ម្តាយកើតជំងឺរបេងហើយមិនបានព្យាបាល, អ្នកដែលមានលទ្ធភាពឆ្លងមេរោគរបេងពីគាត់គឺ:

☐ ១. ប្តី រឺ ប្រពន្ធ ☐ ២. អ្នករស់នៅក្នុងតំបូលផ្ទះជាមួយគ្នា

☐ ៣. អ្នកជិតខាង ☐ ៤. មនុស្សទាំងអស់ដែលរៀបរាប់ខាងលើ

១៦. តើអ្វីជារោគសញ្ញាដ៏សំខាន់របស់ជំងឺរបេងសួត?

☐ ១. ក្អកធ្លាក់ឈាម ☐ ២. ឈឺចុកចាប់ក្នុងទ្រូង

☐ ៣. ហត់ /ពិបាកដកដង្ហើម ☐ ៤. ក្អករាំរ៉ៃលើសពី៣សប្តាហ៍

១៧. តើអ្វីជា ចង្កោមរោគសញ្ញារបស់ជំងឺរបេងសួត?

☐ ១. ក្អករាំរ៉ៃលើស ៣សប្តាហ៍, ក្អកធ្លាក់ឈាម, ពិបាកដកដង្ហើម និងគ្រុនក្តៅ

☐ ២. ក្អកធ្លាក់ឈាម, ឈឺចាប់ក្នុងដើមទ្រូង, ពិបាកដកដង្ហើម និងស្រកទម្ងន់

☐ ៣. ក្អករាំរ៉ៃលើសពី៣សប្តាហ៍, គ្រុនស្រាវស្រាញពេលរសៀល,បែកញើសស្អិតពេលយប់ និង ស្រក់ទម្ងន់

☐ ៤. ឈឺចាប់ក្នុងដើមទ្រូង, គ្រុនក្តៅខ្លាំង, ក្អករាំរ៉ៃ និង ស្រកទម្ងន់

១៨. ក្នុងចំណោមវិធីខាងក្រោមនេះ តើណាមួយជាវិធីដ៏ល្អសំរាប់ស្រាវជ្រាវរកមេរោគរបេង?

☐ ១. ពិនិត្យកំហាក ☐ ២. ធ្វើតេស្តស្បែកដោយទុយបែគុយលីន

☐ ៣. ធ្វើតេស្តឈាម ☐ ៤. ធ្វើតេស្ត

១៩. ជំងឺរបេង អាចជាសះស្បើយ ដោយសារ:

☐ ១. ជាដោយឯកឯង ☐ ២. ប្រើឱសថបូរាណខ្មែរ

☐ ៣. ឱសថឃាត(Antibiotics) ☐ ៤. ឱសថរបេងរួមផ្សំគ្នា

២០. រយៈពេលសរុបនៃការព្យាបាលជំងឺរបេង ដោយជោគជ័យ គឺ:

☐ ១. ៤ ខែប៉ុណ្ណេះ ☐ ២. ៦ ខែប៉ុណ្ណោះ

☐ ៣. ៤ ទៅ ៦ខែ ☐ ៤. ១២ ខែ

២១. ជាទូទៅនៅពេលអ្នកជំងឺទទួលការព្យាបាលដោយឱសថរបេងគាត់តែងតែជួបប្រទះនូវផលរំខានខ្លះៗមួយចំនួន ដូចជា:

☐ ១. ទឹកនោមតិច ☐ ២. រាគ

☐ ៣. រមាស់ស្បែក រីគ្រុនក្តៅបន្តិចបន្តួច ☐ ៤. ខ្វាក់ភ្នែក

២២. វិធានការក្នុងការការពារទារកមិនអោយទទួលភាពធ្ងន់ធ្ងរនៃជំងឺរបេង គឺ:

☐ ១. ដាក់ទារកអោយនៅដាច់ពីគេ ☐ ២. បញ្ឈប់ការបំបៅដោះ

☐ ៣. ផ្តល់វ៉ាក់សាំង បេ សេ ហ្សេ ☐ ៤. ផ្តល់អាហារូបត្ថម្ភ

២៣. វិធានការក្នុងការការពារ នរណាម្នាក់មិនអោយឆ្លងជំងឺរបេង គឺ:

☐ ១. ពេលអ្នកជំងឺក្អកត្រូវយកកន្សែងគ្របមាត់ ☐ ២.ព្យាបាលអ្នកជំងឺរបេងអោយជា

☐ ៣. ផ្តល់វ៉ាក់សាំង បេ សេ ស្បែ ដល់ទារក ☐ ៤. ការរៀបរាប់ទាំងអស់ខាងលើ

ផ្នែកទី៤ : ការយល់ដឹង / ការទទួលស្គាល់របស់អ្នកជំងឺរបេង ស្តីពីជំងឺរបេង

សូមលោក_លោកស្រីជ្រើសរើស ដោយគូសសញ្ញា (√) ក្នុងប្រអប់មួយ ដែលលោក_លោកស្រីមានយោបល់ថា ជាការត្រឹមត្រូវតាមគំនិតលោក_លោកស្រី:

ពខ : ពេញចិត្តខ្លាំង , **ព** : ពេញចិត្ត , **មច** : មិនច្បាស់ ,

មព : មិនពេញចិត្ត , **មពខ** : មិនពេញចិត្តខ្លាំង

លរ	សេចក្តីរៀបរាប់	ពខ	ព	មច	មព	មពខ
២៤	មនុស្សគ្រប់រូប អាចមានឱកាសឆ្លងមេរោគរបេង ពីអ្នកជំងឺរបេងដែលមិនបានព្យាបាល					
២៥	អ្នកជំងឺរបេង ជាទូទៅតែងចាត់បង់ពេលវេលាបំពេញការងារប្រចាំថ្ងៃ ដោយសារតែជំងឺនេះ					
២៦	អ្នកជំងឺរបេង អាចបំពេញការងារប្រចាំថ្ងៃបាននៅក្នុងកំឡុងពេលនៃការព្យាបាលជំងឺរបេង					
២៧	ដើម្បីកាត់ផ្តាច់ការចំលងមេរោគរបេង ត្រូវព្យាបាលអ្នកកើតជំងឺរបេងអោយជាសៈស្បើយ					

២៨	អ្នកដែលឆ្លងមេរោគរបេង អាចវិវត្តន៍ទៅជាជំងឺរបេងក្នុងរយៈពេលជិតខ្ចី បើសិនជាគាត់មានប្រពន្ធភាពស៊ាំចុះខ្សោយ ដូចជាមានផ្តុំកមេរោគអេដស៍ជំងឺអេដស៍, ជំងឺទឹកនោមផ្អែម...					
២៩	ជំងឺរបេង អាចផ្តល់នូវភាពពិការ(ដូចជា រឹងសាច់សួត...) បើសិនជាគាត់មិនបានធ្វើរោគវិនិច្ឆ័យ និងព្យាបាលបានទាន់ពេលវេលាទេ					
៣០	អ្នកជំងឺរបេង ជាទូទៅតែងតែមានអារម្មណ៍ឯកោពីក្រុមគ្រួសារ និងសង្គម					
៣១	ជំងឺរបេង អាចព្យាបាលជាសះស្បើយ ដោយប្រើឱសថបូរាណ					
៣២	ស្ត្រីមិនអាចមានផ្ទៃពោះបានទេ ក្នុងកំឡុងពេលនៃការព្យាបាលជំងឺរបេង					
៣៣	អ្នកជំងឺរបេងដែលព្យាបាលជាសះស្បើយរួចហើយ មិនអាចឆ្លងមេរោគរបេងពីអ្នកដទៃទៀតទេ					
៣៤	ជំងឺរបេង អាចជាសះស្បើយ ដោយមិនចាំបាច់ព្យាបាលអ្វីទាំងអស់					
៣៥	ជំងឺរបេង អាចព្យាបាលជាសះស្បើយ ទោះបីអ្នកនោះមានផ្តុំកមេរោគអេដស៍ ក៏ដោយ					
៣៦	អ្នកជំងឺរបេង អាចបំពេញការងារប្រចាំថ្ងៃជាប្រក្រតីវិញបាន ក្រោយពីព្យាបាលជាសះស្បើយ					

ផ្នែកទី៥ : ការអាចរកបានសេវារបេងនៅតាមមណ្ឌលសុខភាព

ចូរបំពេញកន្លែងចន្លោះ វិ គូសសញ្ញា (√) ក្នុងប្រអប់ ☐ ចំលើយត្រឹមត្រូវក្នុងសំណួរដូចខាងក្រោម:

៣៧. តើនៅមណ្ឌលសុខភាព មានសេវាព្យាបាលជំងឺរបេងដែរឬទេ?

☐ ១. បាទ/ ចាស៎ ☐ ២. ទេ

(បើចំលើយ : ទេ, សូមផ្លោះទៅសំណួរទី៣៩)

៣៨. តើនៅក្នុងភូមិ ឃុំ របស់លោក-លោកស្រីមានមណ្ឌលសុខភាពដែលមានព្យាបាលជំងឺរបេង ចំនួនប៉ុន្មាន?

☐ ១: គ្មានទេ

☐ ២: មានតែ ១កន្លែងគត់

☐ ៣: មានច្រើន លើសពី១កន្លែង

៣៩. តើនៅក្នុងភូមិ ឃុំ របស់លោក-លោកស្រី មានសេវារបេងចល័តដែរឬទេ?

☐ ១. បាទ/ ចាស់ ☐ ២. ទេ

(បើចំលើយ : ទេ, សូមផ្លោះទៅសំណួរទី៤១)

៤០. តើសេវារបេងចល័តនោះ មានចំនួនប៉ុន្មាន?

☐ ១. តែ ១កន្លែងប៉ុណ្ណោះ

☐ ២. មាន២-៣កន្លែង

☐ ៣. លើសពី ៣កន្លែង

ផ្នែកទី៦. លទ្ធភាពទទួលយកបានសេវារបេង

ចូរបំពេញកន្លែងចន្លោះ វី គូសសញ្ញា (√) ក្នុងប្រអប់ ☐ ចំលើយត្រឹមត្រូវក្នុងសំណួរដូចខាងក្រោម:

៤១. តើពីផ្ទះលោក-លោកស្រី ទៅមណ្ឌលសុខភាពដែលមានព្យាបាលជំងឺរបេង មានចំងាយប៉ុន្មាន?

☐ ១: ០-៣ គម

☐ ២: ៤-៥ គម

☐ ៣: លើសពី ៥គម

៤២. តើលោក-លោកស្រី ធ្វើដំណើរពីផ្ទះទៅមណ្ឌលសុខភាព ដោយមធ្យោបាយធ្វើ?

☐ ១: ដោយដើរ

☐ ២: ជិះកង់

☐ ៣: ម៉ូតូ / ម៉ូតូឌុប

☐ ៤: ជិះទូក

☐ ៥: រថយន្តឈ្នួល

☐ ៦: ផ្សេងពីនេះ (សូមបញ្ជាក់) .....

៤៣. តើលោក-លោកស្រីចំណាយអស់ប្រាក់ប៉ុន្មាន ក្នុងការធ្វើដំណើរពីផ្ទះទៅមណ្ឌលសុខភាព?

☐ ១: ០ -១ ០០០រៀល

☐ ២: ១ ៥០០-៥ ០០០ រៀល

☐ ៣: លើសពី ៥ ០០០ រៀល

៤៤. តើលោក-លោកស្រីចំណាយពេលវេលាប៉ុន្មាន ក្នុងការធ្វើដំណើរពីផ្ទះទៅមណ្ឌលសុខភាព?

☐ ១: តិចជាង ៣០ នាទី

☐ ២: ៣០នាទី- ១ម៉ោង

☐ ៣: លើសពី ១ម៉ោង

៤៥. តើលោក-លោកស្រី ចំណាយពេលវេលាប៉ុន្មាន ក្នុងការរងចាំទទួលការព្យាបាលដោយផ្ទួតស៍?

☐ ១: តិចជាង ៣០ នាទី

☐ ២: ៣០នាទី- ១ម៉ោង

☐ ៣: លើសពី ១ម៉ោង

៤៦. តើលោក-លោកស្រី ត្រូវចំណាយថវិការដែរ ឬទេ ក្នុងការទទួលការព្យាបាលដោយ សេវាផ្ទួតស៍?

☐ ១. គ្មានទេ

☐ ២. ៥ ០០០-១០ ០០០ រៀល

☐ ៣. ១០ ១០០-៥០ ០០០ រៀល

☐ ៤: លើសពី ៥០ ០០០ រៀល

ផ្នែកទី៧ : កត្តាចំរុញឬអ្នកចង់ទៅប្រើប្រាស់សេវារបេង

ចូរបំពេញកន្លែងចន្លោះ ឬ គូសសញ្ញា (√) ក្នុងប្រអប់ ☐ ចំលើយត្រឹមត្រូវក្នុងសំណួរដូចខាងក្រោម:

៤៧. តើអ្វីជាមូលហេតុចំបង ដែលលោក-លោកស្រី សំរេចចិត្តមកកាន់មណ្ឌលសុខភាពដែលមានព្យាបាលជំងឺរបេង?

១. អាការៈរោគកាន់តែធ្ងន់ធ្ងរ	☐ បាទ/ ចាស	☐ ទេ
២. គេអោយយោបល់	☐ បាទ/ ចាស	☐ ទេ
៣. លទ្ធផលទីពិសោធន៍	☐ បាទ/ ចាស	☐ ទេ
៤. ជឿជាក់លើមណ្ឌលសុខភាព	☐ បាទ/ ចាស	☐ ទេ

៥. ផ្សេងពីនេះ (សូមបញ្ជាក់) .....

៤៨. តើលោក-លោកស្រីបានទទួលព័តមានស្តីពីជំងឺរបេងពីប្រភពណា?(អាចឆ្លើយបានច្រើន)

ក. ប្រព័ន្ធផ្សព្វផ្សាយ	☐ បាទ / ចាស	☐ ទេ
ខ. បុគ្គលិកមណ្ឌលសុខភាព	☐ បាទ / ចាស	☐ ទេ

គ. ភ្នាក់ងារគាំទ្រសុខភាពភូមិ	☐ បាទ / ចាស់	☐ ទេ
ឃ. បុគលិកអង្គការ	☐ បាទ / ចាស់	☐ ទេ
ង. អតីតអ្នកជំងឺរបេង	☐ បាទ / ចាស់	☐ ទេ
ច. មិត្តភក្តិ	☐ បាទ / ចាស់	☐ ទេ
ឆ. សាច់ញាតិ	☐ បាទ / ចាស់	☐ ទេ

៤៩. តើនរណាជាអ្នកផ្តល់យោបល់ដល់លោក-លោកស្រី អោយមកកាន់សេវាព្យាបាលជំងឺរបេង?

☐ ១: បុគ្គលិកមណ្ឌលសុខភាព
☐ ២: ភ្នាក់ងារគាំទ្រសុខភាពភូមិ
☐ ៣: បុគ្គលិកអង្គការ
☐ ៤: អតីតអ្នកជំងឺរបេង
☐ ៥: សាច់ញាតិ
☐ ៦: មិត្តភក្តិ
☐ ៧: ផ្សេងពីនេះ (សូមបញ្ជាក់) .....

៥០. អ្នកណា ជាអ្នកសំរេចចិត្តអោយលោក-លោកស្រី មកកាន់សេវាព្យាបាលជំងឺរបេង?

☐ ១: ខ្លួនឯងផ្តាល់
☐ ២: គ្រួសារ (ប្តី/ប្រពន្ធ)
☐ ៣: ឪពុក-ម្តាយ
☐ ៤: ផ្សេងពីនេះ (សូមបញ្ជាក់) .....

ផ្នែកទី៨ : ពីតមានទាក់ទងនឹងភាពយឺតយ៉ាវក្នុងការស្វែងរកសេវាព្យាបាលជំងឺរបេង

ចូរបំពេញកន្លែងចន្លោះ រឺ គូសសញ្ញា (√) ក្នុងប្រអប់ ☐ ចំលើយត្រឹមត្រូវក្នុងសំណួរដូចខាងក្រោម:

៥១. តើលោក-លោកស្រី បានចំណាយពេលវេលាប៉ុន្មាននៅសេវាខាងក្រៅ តាំងពីពេលដែលលោក លោកស្រីមានរោគសញ្ញាដំបូង រហូតដល់ពេលដែលលោក-លោកស្រីមកកាន់មណ្ឌលសុខភាព ដែលមានព្យាបាលជំងឺរបេង? លោក-លោកស្រី អាចបញ្ជាក់ជា:

.....ខែ រឺ .....សប្តាហ៍ រឺ .....ថ្ងៃ

៥២. តើលោក-លោកស្រី បានទៅកាន់កន្លែងណាខ្លះដើម្បីទទួលការពិនិត្យនិងព្យាបាល បន្ទាប់ពី លោក-លោកស្រីមានរោគសញ្ញាដំបូង?

(សូមបញ្ជាក់តាមលំដាប់លំដោយ និងរយៈពេលនៃការទទួលសេវានោះ)

ប្រភេទសេវាពិនិត្យនិងព្យាបាល	លើកទី....	រយៈពេលប្រើប្រាស់(ជាថ្ងៃរឺសប្តាហ៍)
☐-ព្យាបាលខ្លួនឯង		
☐-គ្រូឱសថបូរាណ		
☐-ឱសថស្ថាន-កន្លែងលក់ថ្នាំ		
☐-គ្លីនីក-បន្ទប់ពិគ្រោះជំងឺឯកជន		
☐-មណ្ឌលសុខភាព-មន្ទីរពេទ្យរដ្ឋ		
☐-ផ្សេងៗ (សូមបញ្ជាក់).....|		

(បើសិន អ្នកជំងឺឆ្លើយថា " ការពិនិត្យសុខភាពលើកដំបូងរបស់គាត់នៅមណ្ឌលសុខភាព រឺមន្ទីរពេទ្យ", សូមបញ្ឈប់ការសំភាសន៍ ហើយ សូមថ្លែងអំណរគុណយ៉ាងជ្រាលជ្រៅចំពោះការចូលរួម ផ្តល់ពត៌មានដ៏មានសារៈសំខាន់ដល់យើងខ្ញុំ)

៥៣. តើមូលហេតុអ្វី បានជាអ្នកសំរេចចិត្តទៅកាន់ទីនោះ (កន្លែងខាងលើក្នុងសំណួរទី៥២) ដើម្បីទទួលការពិនិត្យនិងព្យាបាល?

- ១. ជឿទុកចិត្ត ☐ បាទ/ ចាស់ ☐ ទេ
- ២. មានភាពងាយស្រួល ☐ បាទ/ ចាស់ ☐ ទេ
- ៣. បញ្ហាថវិការីតំលៃថោក ☐ បាទ/ ចាស់ ☐ ទេ
- ៤. មិនដឹងថាត្រូវទៅទីណា ☐ បាទ/ ចាស់ ☐ ទេ
- ៥. គិតថា វាជាជំងឺធម្មតា ☐ បាទ/ ចាស់ ☐ ទេ
- ៦. ផ្សេងពីនេះ (សូមបញ្ជាក់).....

BIOGRAPHY

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