

## CHAPTER III



### RESEARCH METHODOLOGY

#### 1. Research Design

The research used is a cross sectional descriptive study interview and questionnaire to study the needs and satisfaction of the consumer of the x-ray service. The radiologist and staff of the department interview the consumer.

#### 2. Sampling and Sample Size

The population is the patient or relative of the person who used the x-ray service at that time, including external patients, internal patients, doctors and nurses who read the film at five 30 bed hospitals in Krabi Community hospitals in a one month period of October 1 – 31, 2003, totaling 320 people.

#### 3. Inclusion Criteria

- 3.1 Patient or family and relatives, regardless of sex, religion, nationality, economic level (external consumer)
- 3.2 X-ray users
- 3.3 Those with the ability to speak and understand Thai language
- 3.4 Doctor or nurse or film reader (internal consumer)
- 3.5 Those who are willing to answer the interview.

## 4. Exclusion Criteria

- 4.1 Emergency patients
- 4.2 Violent patients
- 4.3 The patients who are unwilling to answer the questions.

Sample size calculation formula , Yamane's.

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{1500}{1 + (1500 * 0.05^2)} = 316 \text{ cases}$$

The 320 subjects were enrolled in this study.

n	=	Sample size
N	=	Population (1,500)
e	=	Variance 5%

## 5. Expected Outcomes and Benefits

- 5.1 To learn about the needs and satisfaction levels of the internal and external consumers of diagnostic radiological service
- 5.2 The data is to be used for planning for radiological services, to improve efficiency and meet the needs of the consumer
- 5.3 The result of this analysis can be used to develop the system for service and management service methods.
- 5.4 Quality development
  - more efficient use of time, reduce defects, reduce unnecessary tasks, increase satisfaction, and produce employee benefits of accomplishment

## 6. Research Instruments

### 6.1 External consumer

The questionnaire of the consumer needs and satisfaction for the diagnostic radiology department in the Krabi community hospitals is taken from prior research by the researcher.

**Section 1** – General information-sex , marriage status, age, religion, education level, occupation, monthly average income, and the consumer rights for patients- 10 questions

**Section 2** –The interview form of the consumer needs and satisfaction.

- |   |           |
|---|-----------|
| 1. X-ray system - 7 questions                           | 1.1 – 1.7 |
| 2. Working methods,environment and safety - 9 questions | 2.1 – 2.9 |
| 3. Service and the rights of the consumer - 5 questions | 3.1 – 3.5 |

The interview form consists of questions on consumer satisfaction and needs. The section 2 there are 21 questions which has rating scale of 1 to 4 (Singchangchai and Kuropakomphong,1993:60-61) The follow are the standards of the score (Kannasoot, 1992:75-77)

**Table 1: Standard for score and interpretation**

Range	Satisfaction Level	Need Level
3.50 – 4.00	highest	highest
2.50 – 3.49	high	high
1.50 – 2.49	less	less
1.00 – 1.49	not satisfied	not satisfied

## 6.2 Interpretation of the score of the need

4 – Highest level in the activity or behavior which achieves the need in every case.

3 – High level in the activity or behavior which achieves the need almost in every case.

2 – Low level in the activity or behavior.

1 – Lowest level in the activity or behavior.

## 6.3 Interpretation of the score of the satisfaction

4 – Most satisfaction at the highest level

3 – High satisfaction

2 – Low level of satisfaction

1 – No satisfaction

**Section 3** – Recommendation Open question that the consumer can recommend about the service system

#### **6.4 Internal Consumer**

There are 5 questions

Question 1 – 3 General questions for the internal consumer

Question 4 – 5 Needs and satisfaction of x-ray reader. The answer are on a rating scale 1– 4 (Singchangchai and Kuropakompong, 1993 : 60-61) using the standard score as follow. (Kannasoot, 1992: 75-77)

#### **6.5 Interpretation of the score of the need**

4 – Highest level in the activity or behavior which achieves the need in every case.

3 – High level in the activity or behavior which achieves the need almost in every case.

2 – Low level in the activity or behavior.

1 – Lowest level in the activity or behavior.

#### **6.6 Interpretation of the score of the satisfaction**

4 – Most satisfaction at the highest level

3 – High satisfaction

2 – Low level of satisfaction

1 – No satisfaction

## **7. Data Collection**

- 7.1 The College of Public Health sends an official letter to the doctors at the Public Health Department in Krabi to obtain permission and discuss objectives of the research.
- 7.2 Once permission is granted for the research, the public health department will notify the directors of the community hospital
4. Training five research assistanty on the interviews process with proficiency
5. Start the interview process and collect information

## **8. Validity and Reliability**

After the review of literature and related theory, the researcher will build the questionnaire. The thesis advisor will check approve and make any necessary changes. The researcher will test the validity of the interview questionnaire with a set of 30 interviews to be tasted at Ao Luk Hospital. The results will be tested using Cronbach's alpha coefficient. The result showed a factor of 0.88 for the section on needs, 0.83 on the section for satisfaction for external consumers. For internal consumers, the coefficient was 0.74

## **9. Statistical Analysis**

The analysis for this information uses the SPSS 11.0 for Windows program, and is separated as follows:

1. Analysis of the general information of the population of the external customer using frequency and percentage

2. Analysis of the consumer needs and satisfaction of the external customer of the x-ray service using average, standard deviation, and the score of the need and satisfaction in the community hospitals in Krabi
3. Analysis of internal consumer information using frequency and percentage
4. Analysis of consumer need and satisfaction of the internal consumer of the x-ray service using average, standard deviation, and the score of the need and the satisfaction in the community hospitals in Krabi.
6. Compare the difference in the needs and satisfaction levels by the average score of the x-ray service system, working method, environment, safety, and consumer rights of the patient using the Paired T-Test at the level of 0.05.
7. Detailed analysis of the results of the measurements in the difference in the needs and satisfaction levels by average score of the x-ray service system, working method, environment, safety, and consumer rights of the patient using the Paired T-Test at the level of 0.05.