

# CHAPTER I

## INTRODUCTION



### 1.1 Background

#### 1.1.1 Historical background of Bamrasnaradura Institute

Bamrasnaradura Institute was established in 1959 with a mission to control and treat infectious diseases. At that time, Prime Minister Tanarut assigned the Ministry of Public Health to build Bamrasnaradura Institute because of high prevalence and mortality rate of diarrhea. The main mission of the hospital is caring for the patients with infectious diseases, both existing and new emerging ones. In 1995, the hospital had been extended to 650 beds and seven departments. Bamrasnaradura Institute is now a general hospital in Nontaburi province that deals with both infectious and non-infectious diseases. However, the hospital still emphasizes on its main mission in dealing with infectious diseases (mostly AIDS - Acquire Immunodeficiency Syndrome).

In 2002, Thailand health system reform was introduced due to budget constraint from economic crisis. Every hospital changed its role to focus more on primary healthcare. Bamrasnaradura Institute, as a special hospital for infectious diseases, faced this change by adjusting itself into a tertiary care hospital which responsible for management of complicated infectious diseases. The future vision and mission of the hospital are still related to treatment of infectious diseases.

#### 1.1.2 Universal Precautions and Bamrasnaradura Institute

Infectious diseases can be transmitted from patients to healthcare workers and vice versa. These diseases can infect health personnel via direct contact or work related trauma. These diseases include HIV (Human Immunodeficiency

Virus)/AIDS, Hepatitis B, etc. According to Center for Disease Control and Prevention (CDC), U.S.A. report, there are six times of infectious risk for these diseases in healthcare workers than others.

More than 1,200 healthcare workers have been reported to acquire hepatitis B virus during their works in the U.S.A. As for HIV transmission, there have been 51 documented cases of healthcare workers acquired AIDS occupationally. There were 108 cases of possible occupationally acquired AIDS as of June 1996 (Schwartz, 1999: 161-162).

Since there are increase in the incidence and severity of work related infectious diseases, the CDC began issuing guidelines designed to minimize the risk of HIV transmission in the healthcare setting in 1985. In 1987 the CDC issued a new set of guidelines, which was called Universal Precautions (detail in chapter 3). These guidelines have been updated and extended but not substantially altered. They are applicable to clinical and laboratory staff, emergency service personnel, and healthcare workers performing invasive procedures as well as those who do not have direct patients care (e.g. housekeeping personnel, kitchen staff and laundry workers). Although Universal Precautions were issued to reduce the transmission of HIV in health care setting, they are also appropriate for reducing the transmission of other blood-borne diseases, including hepatitis B virus, hepatitis C virus (Center for Disease control [CDC], 1985: 681-686, 691-685, 1987: 1s).

In 1984, the first case of AIDS in Thailand was reported from Ramathibodi Hospital by Dr. Limsuwan, an infectious specialist (Bamrasnaradura Institute, 2000). After that, Universal Precautions were introduced to many hospitals in Thailand due to the concerns of this new serious emerging disease, AIDS.

Universal Precautions were also introduced to the Bamrasnaradura Institute in 1988 (Bamrasnaradura Institute, 2000). Most of healthcare workers began to have awareness of work related infections. Since HIV is a serious condition that could not be cured. Most hospitals at that time refused to accept HIV infected patients, especially surgical patients. Bamrasnaradura Institute was then became a referral center that received these patients. Due to a large amount of HIV infected cases in hospital responsibility, preventing healthcare workers from infectious diseases becomes one of hospital's main missions. In order to achieve this mission, Universal Precautions are now one of the major policies of Bamrasnaradura Institute.

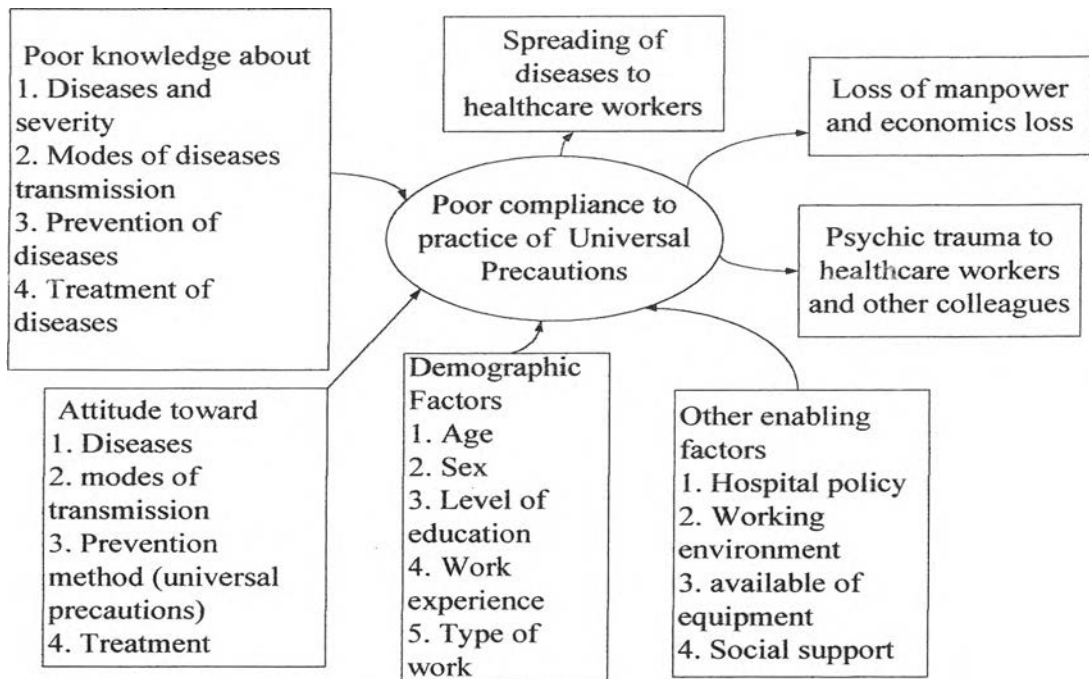
### **1.1.3 Significance of the problem and Rationale**

From the evidence of work related infection, every healthcare worker has the risk of getting infectious diseases while they are on duty because they cannot select their patients. To reduce their risk, Universal Precautions were introduced to all healthcare workers. The concept of the Universal Precautions guidelines are that every patient should be considered as potentially harboring blood-borne pathogens. Since the medical history, physical examination, and laboratory testing cannot identify if the patient was infected with HIV or other blood-borne pathogens. Another reason is that in emergency situation patients have to be treated immediately without the information about their infectious status.

The aim of Universal Precautions is to prevent occupational acquire infection that can be transmitted from patients to healthcare workers, but some workers neglect to practice Universal Precautions, and some practice them inappropriately. There was a report from USA that examined healthcare workers compliance to Universal Precautions in the emergency room and hospital environment. Compliance in large city hospital emergency room was found to be only

18% and only 5% when treated patient who bleed from external injury. While the rates of noncompliance with Universal Precautions were reported to be 74% in the surgical intensive care unit and 34% on surgical wards (Schwartz, 1999: 161-162).

Poor compliance to Universal Precautions may be caused by multiple factors. Figure 1.1 shows some factors that may cause poor compliance to Universal Precautions.



**Figure 1.1 Causal web of poor compliance to Universal Precautions**

As an infectious disease hospital, the majority of Bamrasnaradura patients are infected with HIV. Table 1.1 demonstrates the number of patients who came to Bamrasnaradura Institute during 1987-2000. In summary, 15% of outpatients and 21% of in-patients cases have HIV infection. More than 800 workers in the hospital are at risk of occupationally acquired infections.

Table 1.1 The number of patients in Bamrasnaradura Institute, 1987-2000

Year	Total	IPD	OPD	IPD with HIV infection	OPD with HIV infection
1987	153,143	15,628	137,515	8	11
1988	151,548	13,151	138,397	122	197
1989	N/A	N/A	N/A	211	309
1990	142,342	12,523	129,819	271	551
1991	151,599	13,057	138,542	329	793
1992	160,084	13,957	146,127	629	1,233
1993	186,062	17,888	168,174	939	2,857
1994	202,258	18,196	184,962	1,325	5,316
1995	195,779	14,396	181,383	1,574	10,532
1996	202,099	15,384	186,715	1,799	13,426
1997	212,510	15,005	197,505	2,666	20,917
1998	217,664	14,542	203,122	3,355	22,177
1999	203,982	14,380	189,602	4,000	23,200
2000	210,290	14,018	196,272	3015	31,674

Source: Bamrasnaradura Institute, 2000

Due to large amount of HIV-infected cases in institute's responsibility, preventing healthcare workers from work related infection is important for Bamrasnaradura Institute. Universal Precautions become one of the health behaviors that need to be improved among healthcare workers in Bamrasnaradura Institute. Bamrasnaradura Institute has a Universal Precautions training program for most of its personnel. The researcher, surgeon working in the hospital, believes that there are still poor Universal Precautions practices among healthcare workers in Bamrasnaradura Institute. There is also no data available about Universal Precautions practice in the hospital.

In order to improve healthcare workers' compliance to Universal Precautions, the institute needs to have some studies about factors that affect Universal Precautions practice and Universal Precautions practice among hospital's healthcare workers. This study will be served as a guideline to understand healthcare workers' attitude toward Universal Precautions compliance and other factors that

affect Universal Precautions practices among healthcare workers in Bamrasnaradura Institute.

## **1.2 Purpose of the study**

To determine major factors affecting Universal Precautions practice among healthcare workers in Bamrasnaradura Institute.

## **1.3 Research questions**

1.3.1 Do knowledge, attitudes and socio-demographic factors affect Universal Precautions practices among healthcare workers?

1.3.2 Do different groups of healthcare workers in Bamrasnaradura Institute have different level of knowledge, attitude and practices in Universal Precautions?

## **1.4 Objectives of the study**

1.4.1 To assess the level of knowledge, attitudes and Universal Precautions practices among healthcare workers in Bamrasnaradura Institute.

1.4.2 To compare the level of knowledge, attitudes and Universal Precautions practices between different groups of healthcare workers in Bamrasnaradura Institute.

1.4.3 To study the relationship of Universal Precautions practices and the following factors: age, sex, education, work experience, work place, work position, Universal Precautions experience, Universal Precautions training, level of knowledge, attitudes and other enabling in Bamrasnaradura Institute.

## **1.5 Research hypotheses**

1.5.1 There are differences in level of knowledge, attitudes and practices among different groups of healthcare workers in Bamrasnaradura Institute.

1.5.2 Healthcare workers who have good knowledge will have better compliance to Universal Precautions than those who have lesser knowledge.

1.5.3 Healthcare workers who have positive attitude toward Universal Precautions will have better compliance to Universal Precautions than those who have negative attitude.

## **1.6 Major determinants for practicing Universal Precautions**

### 1.6.1 Knowledge about Universal Precautions

1.6.1.1 Diseases and severity of infectious diseases

1.6.1.2 Mode of diseases' transmission

1.6.1.3 Prevention and treatment (Universal Precautions principle)

### 1.6.2 Attitudes toward Universal Precautions

1.6.2.1 Feeling toward Universal Precautions

1.6.2.2 Beliefs about Universal Precautions

1.6.2.3 Intention to use Universal Precautions

### 1.6.3 Other factors:

1.6.3.1 Demographic data such as age, sex, education level, working experience, etc.

1.6.3.2 Availability of equipment

1.6.3.3 Opinion about hospital policy

## 1.7 Operational definitions

### 1.7.1 Knowledge

The knowledge of individual healthcare workers about Universal Precautions includes causes and severity of diseases, modes of disease transmission, prevention and treatment of infectious diseases. These factors were measured by using questionnaires. The scores obtained from the questionnaires were used as determinant. The final scores were summed up and used to classify healthcare workers into three groups: high, moderate and low level of knowledge. Respondents who had more than 80% of correct answers were classified as high level group. Respondents who had 60%-80% of correct answers were classified as moderate level group. Respondents with less than 60% of correct answers were classified as low level group.

### 1.7.2 Attitude

Attitude was healthcare workers' belief, feeling and intention to follow Universal Precautions principles. Attitude was measured by Likert's scale type questionnaire. All individual answers were summed up for total scores and calculated for means. The means score were used to divide healthcare workers into three groups that were positive group, neutral group, and negative group. Positive attitude group had scores between 3.5 and 5.0, Neutral attitude group had scores between 2.5 and 3.49, and Negative attitude group had scores below 2.5.

### 1.7.3 Practice of Universal Precautions

Practice of Universal Precautions was the frequency of practice, measured from a self-administered questionnaire for usage of self protection technique and equipment in different situations. Each question had a scale of 1-5, 1 being never and



5 being very often. The mean frequency scores were then used to classify the healthcare workers into high practice level group (frequency >80%), moderate practice level group (frequency = 60%-80%) and low practice level group (frequency <60%).

### 1.8 Variables table

Table 1.2 Research variables

Conceptual Variables		Operational Variables	Determinant Scale	Variable measurement method
Knowledge	Diseases and its severity	Test score on Diseases and severity knowledge	Ordinal	Questionnaire
	Mode of transmission	Test score on mode of transmission knowledge	Ordinal	Questionnaire
	Prevention and Treatment	Test score on Prevention and Treatment knowledge	Ordinal	Questionnaire
Attitude	1. Beliefs 2. Feeling 3. Intension to practice	Likert's scale on beliefs, feeling and intension to practice UPs	Ordinal	Questionnaire
Demography		Demographic data: 1. Age 2. Sex 3. Education 4. Type of job 5. Work experience 6. Place of work 7. Experience of using UPs	Ratio Nominal Nominal Nominal Ratio Nominal Nominal	Questionnaire
Universal Precautions practice		Number or frequency of Universal Precautions practice	Ordinal	Questionnaire
Other factors	1. Availability of equipment	1. Number of equipments	Ordinal	Questionnaire
	2. Policy	2. Hospital policy	Nominal	