

CHAPTER I



INTRODUCTION

1.1 Background and Rationale

Nosocomial infection in hospital has always been one of the complications and was the initial point of nosocomial infection control in 1847. Nosocomial infection is caused by in-patients receiving agent or microorganism during admission. Related factors are agent, host, and environment. The 3 components are closely related and will not cause disease when they are in balance. But if the agent increases in number or potential to infect, or host has lower immunity, or if environment changes and supports the transmission of agent or host becomes more sensitive, the disease or epidemic takes place.

Centers for Disease Control and Prevention (CDC) studied and compiled nosocomial infection data from hospitals in the USA in 1969. The finding was that there were nosocomial infections in hospital 3.4% of discharged patients. During 1975 – 1976, the infection rate was 5.7% in admitted patients. In 1992, it was found that nosocomial infection prolonged in-patient stay for 4 days in average, and cost 2,100 US dollars more in each infection. The infection caused 0.9% of deaths and was a supporting factor of 2.7% of patient's death.

In 1981, CDC announced a warning and suggested practice for prevention because of a very first case with complications from HIV.

In Thailand, the infection control in hospital started because of the first HIV case in 1984 and alerted the administrative and working staff. They agreed to enhance a serious infection control. In Phayao, the first HIV case was in 1989 and that brought awareness.

Medical staff are at high risk not only to HIV but other infections via blood and bodily fluid for example, hepatitis B and C. In the US, Dienstag reported that hepatitis B infection rate of medical and public health staff was 6 times higher than that of other occupations. CDC estimated that there were medical and public health staff infected by hepatitis B at work about 12,000 per year. Among these, 500 – 600 were admitted, 700 – 1,200 became carriers, and about 250 health staff died of this infection. Health staff who got needle stick injury by contaminated with hepatitis B had chance of 10 – 35% of infection. Beekmann compiled HIV infection through needle stick injury from 14 reports and found that in 2,000 needle stick incidents, 6 infections occurred. Therefore, the incidence rate of HIV infection through needle stick was 0.3%. However, even though the incidence rate through needle stick of HIV was lower than that of hepatitis B is durable while HIV patient is not. (Unalekka, 1998: 138)

Other than blood and bodily fluid-borne transmission, air-borne transmission also occur. Tuberculosis (TB) is one of the most important and seriously transmitted. TB patients are difficult to detect, admit, take pills and need periodical hospital visits.

Estimated treatment cost could be as high as 4,000 Baht per patient, and much higher in case of resistance. Moreover, health staff in infectious phase can spread TB to colleagues, patients, patient's relatives, and their own family and community (Santisuttham, 2000)

As a result, hospital is like a pool of infection from patient, visitor, and health staff. A patient visiting hospital has a chance to contact various types of infection. Some of them are harmful or resistant to drug. The infection reduced immunity of the patient, thus increases sensitivity. Examination and treatment provide chances of agent contact through contaminated equipment use. Health staff also had chances to contact with HIV, hepatitis B and C, and TB while contacting patients. Prevalent of the disease increases risk of infection and can cause infection in case of accident or mistake in service. Consequently, health staff needs to be aware of prevention and infection control from both service provider and client aspects.

International health organizations recommend that hospital should have infection control program and have developed minimum requirements function. These organizations have also developed guidelines for hospital credentialing. In the area of nosocomial infection, four levels of satisfaction were proposed. Level one, the hospital has written policies on infection control. Level two, an incidence of nosocomial infection is know, or at least yearly prevalence studies are performed. Level three, a specific nurse or other health professional is responsible for the activities of infection control, and active methods for surveillance are employed. Finally, level four, a

committee and a program for prevention and control for nosocomial infection is present and is reviewed annually. (Wenzel,1997)

Situation of important infection in Phayao

Symptomatic and AIDS patient since 1989 until October 31, 2001 was 9,820 in total. The highest were in Chiang Kam, Muang, and Dokkhamtai districts (2,424, 2,300, and 1,271 cases, respectively).

Hepatitis B in Phayao in 2001, Chiang Kam, Mae Chai, and Dokkhamtai were the highest (33.33, 25.93, 24.82 per 100 populations, respectively).

Pulmonary TB in Phayao in 2001, Muang, Chiang Kam, and Dokkhamtai were the highest (36.76, 16.49, 15.67 per 100 populations, respectively).

Work-related accident among health staff in Phayao, Pong, Dokkhamtai, and Phayao were the highest (21.87, 18.75, 18.75 per 100 populations respectively).

Nosocomial infections in Chiang Kam, Phayao, Chiang Muan, Pong, and Dokkhamtai hospital were 0.81, 0.60, 0.58, 0.22, 0.22, and 0.03 per 100 populations, respectively.

According to the situation above, Dokkhamtai Hospital ranks the 3rd place of HIV/AIDS case, the 2nd place for hepatitis B, the 3rd place for admitted pulmonary TB patient, the 2nd place for work related accident and the 5th place of nosocomial

infection. Therefore, infection control improvement is strongly needed to prevent and control and reduce the transmission.

There are 7 government hospitals in Phayao province. Two general hospitals under the Regional Hospital Division are Phayao (363 beds) and Chiang Kam (254 beds). Five community hospitals under the Regional Public Health Division are Dokkhamtai, Mae Chai, Chun, Pong, and Chiang Muan hospital (30 beds).

The researcher, working in AIDS and Venereal Disease Section of Phayao Provincial Health Office and in charge of infection control, was interested in the development of infection control work of Dokkhamtai hospital, as a representative of community hospital under Regional Public Health Division, Ministry of Public Health.

1.2 Research Questions

- What is the problem of infection control work of Dokkhamtai Hospital?
- What is the guideline to solve such problem?
- Is the guideline implemented as directed? What are the results?
- Does the “Participatory infection control system development of Dokkhamtai hospital” achieve its goal?
- How do the staff participate in infection control system?
- How is the infection control system developed?

1.3 Objectives

General objective

1. To develop the infection control system of Dokkhamtai hospital for its effectiveness

Specific objective

1. Dokkhamtai health staff can analyze infection control problem
2. Dokkhamtai health staff participate in the development of infection control

1.4 Scope of Study

This is an action research emphasizing participation in the development of infection control system of Dokkhamtai hospital, Dokkhamtai district, Phayao province. Target population is health staff whose work is relevant to infection control i.e. OPD, ER, LR, OR, Special Clinic, Central supply, Ward, Special ward, Communicable disease control section, Laboratory, Laundry, Dental clinic, and Community Health section. The population consists of 62 medical staff and 23 non-medical staff. The research was a participatory action research with collaboration of the hospital staff during July 2001 – October 2002.

1.5 Agreements

This is a study solely of Dokkhamtai hospital.

1.6 Limitations

This is a longitudinal study to realize a concrete outcome of infection control of Dokkhamtai hospital. For IC development, there were much improvement depending on financial status of the hospital and the support at the director.

1.7 Definition of Terms

Participatory approach: Medical staff is involved in action for problem identification, opinion sharing, implement and evaluation.

System: Procedures to achieve the goal

Development: Systematic management planned by organization members to reach a common goal and organization's vision

Effectiveness: Capacity of personnel to work and accomplish a goal

Infection Control Committee (IC Committee): Representative group of staff consisting of ICN, ICN assistant, all ICWN sections working for infection control with role and duty

Infection Control Nurse (ICN): Nurses directly in charge of infection control

Infection Control Ward Nurse (ICWN): Staff responsible of infection control

Medical staff: Hospital personnel working on or related to infection control

Non-medical staff: Hospital employee working on, or related to, infection control

1.8 Expected Advantages

1. To assess problem of infection control of Dokkhamtai hospital and to find an appropriate solution.
2. Medical and non-medical staff participate in the development of infection control
3. A concrete improvement of infection control system
4. Application and expansion of participatory infection control system development of Dokkhamtai hospital to other hospitals

1.9 Activity Plan with Time Table

Table 1: Activity plan with time table

Activity	Month / Year
1. Literature review	July 2001
2. Formulate tools to assessment IC problems: questionnaire, observation form, at individual and section levels	July 2001
3. Assessment of IC, using the tools in no.2, at hospital level by ICN, ICN assistant, at section level by ICWN, and of med and non-med staff using questionnaire	August 2001
4. Accumulate and analyze IC problems	September 2001
5. Present the analysis in hospital IC committee meeting for planning	September 2001
6. Med staff share opinion and set agreement in the plan	September 2001
7. Med staff implement the plan	October 2001 - October 2001
8. Analyze and follow up	October 2001 - October 2002
9. Solve, or improve the cause of problem	October 2001 - October 2002
10. Evaluate	October 2002
11. Conclusion	October 2002
12. Report, documentation	October 2002