



CHAPTER V

CONCLUSIONS DISCUSSION AND RECOMMENDATIONS

5.1 Conclusions and Discussion

Participatory Infection Control System Development of Dokkhamtai Hospital, Phayao province was a participatory action research aiming for the development of infection control to be efficient, to enable medical staff of Dokkhamtai hospital to analyze infection control problems, and participate in the development of infection control. Target area: Dokkhamtai hospital in Dokkhamtai district, and target population: hospital staff concerning infection control (62 medical and 23 non-medical staff), were purposively selected from OPD, ER, LR, OR, Special clinic, Ward, Special ward, Central supply, Laboratory room, Dental clinic, Community health, and Disease control. The procedures were analysis of problem, planning, implementing, follow up and evaluation, as a collaboration approach from hospital staff. Discussion comes in 4 parts as follow.

1. Participation in problem analysis of infection control

The assessment of infection control was done at different levels.

1.1 Hospital level

Infection control problem analysis found that in terms of management, the committee organized meetings four times a year but it was not constantly and there was no supervision. Preferably IC committee should meet monthly. In terms of

surveillance, 64.7% of staff had annual physical check-up. Physical check-up should be done once every year. As for accident, 7.1% of staff had accident at work. Client nosocomial infection was 0.1%. Sterilization, there should be monthly verification both biological and chemical of sterilization machine. In the previous year, there were eight. For physical verification, one autoclave was found to be out of order. Water testing in wastewater treatment system was done once and the results met the standard. In terms of prevention and control, a great deal of solid waste was found mixing altogether. Workmen carried transportation solid waste in bags to the waste collection house. Smelly smoke occurred when burned. In some service delivery points, there were excessive numbers of trash bins. There were 93 trash bins, 12 garbage bins, and 24 infectious waste bins found in the survey. Focus group discussion of IC committee found that the assessment of hospital level problem, ICN and ICN assistant participated in the assessment so the big picture of hospital infection control could be revealed.

1.2 Service delivery point level

The surveillance, prevention and control found that there was poor ventilation in OPD, restrooms were smelly, ER was small and messy without protective barriers e.g. mask, goggles, etc. LR had no separation of waste, OR had limited closet, special clinic had no separation of waste, no lid of sharp object bin. Special ward had no separation of waste, insufficient sterile set wrapping. Central supply did not use one-way system, disorganized, poor ventilation, no closet, only some sterile sets had labels, and sterile set wrapping was not adequate. Laundry was disorganized and no apron. Laboratory was disorganized. Dental clinic had rusty equipments and were left exposed, small sets were wrapped together, small room, and cleaning sink was close to patients. Community

health had no closet. Prevention and control, HIV and TB patients attended the same area.

Focus group discussion of medical and non-medical staff, ICWN made the assessment with staff, discussing problems in monthly meeting and ICWN took it into IC committee.

1.3 Individual level

Using questionnaire, results from 62 medical and 19 non-medical staff are as follow. Most of the respondents, (76.5%) mentioned that duty activities were risky, and 91.4% wanted protective barriers, whilst 45.7% mentioned protective barriers were not sufficient in the past 3 months. Accident, 11.1% had accident at work. One third of the staff (29.6%) never had annual physical check-up, 4.9% never had educated on infection control, and staff had wrong idea about how HIV, Hepatitis B, and TB transmitted, 12.3%, 18.5%, and 11.1%, respectively.

Obviously, the findings pointed out problems and weak points to improve. The ICN, ICN assistant, medical and non-medical staff had participated in the assessment thus realized the infection control problem at all levels and could analyze the cause of problem and develop the solution guideline by themselves with the sense of ownership for further intervention.

Therefore, infection control development needed infection control assessment firstly to know the problem and what to develop. It was found that assessment tool is

the main factor to clear the situation, such as mapping the bins to compare, before and after the development. Moreover, data analysis is also important. It could be the concept to know about the gap, how to develop and implement. This was relevant with Pinthong 1980 (Katesingnoi, 1998: 49) and Decharin (Katesingnoi, 1998: 50) on participation at problem seeking and statement and on problem seeking and cause analysis in community and its needs respectively.

2. Participation in planning and activity to solve infection control problems

Findings from the assessment and analysis of infection control problem at hospital, service delivery point, and individual level to discuss and brainstorm in IC committee and the committee prioritized problems using magnitude, seriousness, solution feasibility, and needs of solution as criteria.

Central supply was the biggest problem, as IC committee agreed, and it concerned every service delivery point in the hospital. It was very essential to improve and develop the system and then induced other service delivery point's improvement. Main goals were 7 a standard disinfecting and sterilization system, awareness on infection control of staff, an effective surveillance system in hospital, efficient system for publicizing and information technology, efficient waste management, clean environment, and efficient IC committee.

From IC committee Focus Group Discussion, it was found that the IC committee played role on solution planning, using data from hospital and service delivery point level to discuss in the meeting, prioritized, set up goals, and planned

activities. Medical and non-medical staff contributed in giving opinions in the service delivery point meeting. ICWN then could bring the opinions into IC committee for hospital planning.

Therefore, infection control development needs activity planning to implement in steps, so that it can monitor and control the implementation to achieve the goals. Representatives from each service delivery points should participate in planning process, to know the real needs of each service delivery points. It can solve the problem and make the agreements to complete the action. This conforms with Decharin (Katesingnoi, 1998: 50) on participation in policy or plan or activity planning for community problem solution, new creation for social benefit or to answer the needs of community.

3. Participation in implementation, problem solution, infection control development

This is accorded with infection control problem found as follow.

3.1 IC organization and management

Management: Revision was used for problem solution. Responsibility delegation was clear. IC committee had monthly meeting. There were collaborations on waste management campaign. TB patients were specifically treated at a special clinic. There were supervision and follow-up.

Operation: Autoclave was fixed and retrieved good condition. Protective barriers were supplied. Sterile set wrap and hand towel were sufficiently supplied.

Paper cups for drinking water were supplied at every water post. Cart for used equipment was invented. JICA supported transfer carts for sterile set to distribute.

Environmental management: Emergency room and dental clinic was enlarged. Central supply was improved to a one-way system with medical staff in charge.

3.2 Infection surveillance

Infection control was expanded to clients in special ward and labour room. Catheter-associated urinary tract infection rate was 0.2%. For hospital staff, annual check-up rose from 64.7% to 75.8%. For environmental sanitation, the inspection on medical equipment sterilization was twice a month. Chemical and physical inspection was also done for always.

3.3 Prevention and control

Another isolation room was built in the special ward. Sterile medical equipments were labeled for date of sterilized and expired and well grouped. For cleaning, disinfecting and sterilization, every service delivery point sent the used equipment to be processed at Central supply. JICA supported cleaning machine. For service, staff was encouraged to use protective barriers. Working accident occurred from carelessness of the staff and some staff did not wear protective barriers such as gloves. After the implementation the staffs become aware of wearing protective barriers but accident rate was still as high as 5.8%, e.g. slipping the facilities or equipments, causing of the accidents. Environmental sanitation, waste separation was promoted, but

still waste was mixed. Emergency room and Central supply made trash bin mapping before and after the development.

Academic aspect, common communicable disease and infection control trainings after training, the knowledge outcome of medical staff rose from 18.3% to 24.1% ($P<.05$), and that of non-medical staff rose from 16.7% to 21.6% ($P<.05$).

Focus group discussion in IC committee, medical, and non-medical staff was found to have improved, corrected, and developed infection control work in responsibility.

Infection control development was in manpower development, team development, system development, environmental development, and organization development to suit IC principles. Experience sharing induced learning, comparison and application of advantages. Training and meeting caused mutual learning, updating new information, alertness, and agreements found were practiced for infection control. This complies with Pichiensathien et al., (1995) studied the effect of education and provision of facilities in the emergency room Maharaj Nakorn Chiangmai Hospital on the practice of universal precaution by emergency room nurse the results indicated that the intervention measures increased the compliance with universal precaution from 48.7% to 63.4% ($P<.01$) and that of Pinsakul, (1999) revealing that after participatory problem solution, target population followed IC practice more than before (significantly at 0.01). Control was also performed for achievement.

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Participation of staff enhanced and revealed capability in manpower and it was a sustainable development.

Problems and conflicts

1. Littering behavior was not totally changed. It was up to individual habit of staff, patients and relatives.
2. Protective barriers use by only certain staff, and did not meet the standard. It depends on individual habit of staff. Inconvenience to work, and rush prevent them from using protective barriers.

Limitations

1. ICN was chief nurse. She was in charge of many duties. As a result, infection control was not focused.
2. A great number of clients of Dokkhamtai hospital.
3. It is a long -term development.
4. The improvement of infrastructure to meet the standard of infection control development cost a great deal of budget.
5. Hospital has a small size incinerator, 25 kg, and it is too old to burn a lot of waste. Combustion was not good enough.

Lesson Learned

1. Conceptual management, systematic work and team working brings power and development.
2. Self-analysis brings learning, ownership, and participation to develop.

3. Good solution must be relevant to local evidences.
4. System development is continuous and related to other service delivery points.
5. Systematic work needs good coordination.
6. Urging and supporting needs mental encouragement.
7. Model learned could be expanded to other places.

Strength of this study

1. The director of Dokkhamtai hospital realizes the importance of work and development, thus supports budget and also mentally support.
2. IC committee collaborates. They has strength and dedication to assert their opinious.
3. Staff collaborates well.
4. Existing equipments are adapted and applied to use appropriately.
5. JICA supports modern equipments such as cleaning machine, oven, cart, etc.
6. Hospital Accreditation (HA) system takes part in efficiently supporting the infection control work.
7. Continued knowledge and convince on garbage separating in all levels of the staff, patients and relatives.
8. Continu preparing suitable protective barriers for the users and ready to use in any time.

5.2 Recommendations

Suggestions for applying the results

1. For awareness building on prevention and control of staff, continued meeting and publicizing are needed to make staff aware of situation and its seriousness. Also, stimulate the staffs to constantly follow IC guideline.
2. Health manpower development for problem solution skill, staff's knowledge, attitude, thinking process and analytical skill should be developed, such as, by operational training. Medical and non-medical staff should participate in goal and guideline setting with IC committee. Learning process should be a continuum one. Team working is to be enhanced.
3. Multiple service delivery points concerned problem solution should be integrated and problem oriented. Staff then can work in team and has holistic view.
4. For working system development, there should be a revision and improvement of working standard to be up-to-date to catch up with the changing situation. Follow up mechanism for infection control is needed. Supervision should be periodic with reports for all staff.
5. Expand infection control system to cover other hospitals in the province for more efficiency.
6. There should be an IC coordinator who reports to administrator, bringing IC concerning agenda to the exclusive meeting and intigration of IC in to the system.

Suggestion for future study

1. Appropriate technology and model to apply in infection control should be studied.
2. Relationship of work practice and infection possibility of each activity should be studied.