Quality of Nosocomial Infection Control in Thailand

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Objective : *To study the quality of nosocomial infection control with respect to structure and process.*
Material and Method : *Data collection by questionnaire and interview administrators and medical personnel in 57 hospitals in Thailand in 2002.*
Results : *Nosocomial infection control was implemented in all 57 hospitals. In every hospital, there was an infection control committee (ICC) and at least 1 infection control nurse (ICN). The quality of ICNs regarding knowledge, skill and time available for infection control needed to be improved. Surveillance methods of NI were not appropriate in many hospitals. Doctors were not interested in NI control and supply of certain materials was not adequate. Lack of support and co-operation of doctors and nurses was found. Service of certain departments needed to be revised in over 50%. Doctors and nurses not directly involved in NI controlled were not satisfied with current practices.*
Conclusion : *Quality of NI control in Thailand has yet to be improved regarding structure and process. Better cooperation between NI control team and healthcare personnel needs to be developed.*

Keywards : *Quality, Nosocomial infection control, Thailand*

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Nosocomial infection (NI) is a common complication affecting patients in hospitals. Proper nosocomial infection control is essential for quality of health care and patient safety. In Thailand, nosocomial infection was introduced in 1971 into one newly set medical school[1]. In 1982, the Ministry of Public Health initiated nosocomial infection control as a means to improve the outcome of medical service. A national study showed a prevalence rate of NI at 11.7% in 1988[2]. After the implementation of NI control in related hospitals, the prevalence rate of NI was reduced to 7.3% in 1992[3]. The efficacy of NI control was proved in Thailand[4]; similar to findings reported from the United States[5]. The administrators play important roles in organizing and implementing NI control in a hospital[6]. Multidisciplinary teams with diverse representation are involved in the cycle for success in NI control[7]. Collaboration is critical for success, especially among doctors and nurses[7,8]. The quality of process in NI control is the key to good output and outcome[9].

The quality cycle of NI control in Thailand has not been assessed. The authors, therefore, conducted the study on quality of NI control in 2002.

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Material and Method

Sets of questionnaires were sent to 470 doctors and 882 nurses in 57 hospitals across the country in 2002. Data were also collected by interviewing hospital administrators, chair persons of ICC, and a group of doctors and nurses not directly involved in NI control.

All data collected were analyzed by the researchers. Frequency tables with number and percent were used for analysis.

Results

The study involved 57 hospitals of various

sizes and from different regions of the country (Table 1). In every hospital, there was an infection control committee (ICC). It was chaired by the directors in 14 hospitals (24.6%) and the rest by doctors from various departments. Infectious disease doctors were assigned as a member of ICC in all university hospitals and less frequently in private ones (Table 2). The heads of nursing department and ICNs were assigned as members in only 40%-90%. Regular meetings of ICC were present in 75.4% (Table 3). Hospital-wide, continuous surveillance was performed in 80.7% while targeted survey in only 63.2%. Surveillance reports were regularly submitted to administrators in 77.2%.

Specially trained ICNs were found in 59.6%. Only 22.9% of hospitals had full-time ICNs (Table 4). Nurses were more involved in NI control activities than doctors (Table 5). Only 59.2% of doctors showed interest in NI control, and about 70% had access to surveillance data. Opinions of 89 administrators interviewed (Table 6) are presented in Table 7. In 58.1%, doctors were unwilling to be assigned to a NI control team; if they were, they stayed in the post only for a short period. Doctors were considered competent in NI control in less than one half. Collaboration between ICC

Table 1. Hospitals enrolled in the study

Categories of Hospital	No	%
University	5	8.8
Regional	10	17.5
Provincial	21	36.8
District	16	28.0
Private	5	8.8
Total	57	100

Table 3. Nosocomial infection control activities in 57 hosptials (%)

Activities	%
Regular meetings of ICC	75.4
Surveillance of NI	
Hospital-wide	80.7
Targeted	63.2
Regular report of surveillance data	77.2

Table 4. Infection control nurses (ICNs) in 57 hospital

ICNs	%
Trained in IC	59.6
Full-time	22.9

Table 5. Involvement of 470 doctors and 882 nurses in NI control (%)

Involvement	Doctors	Nurses
Attending NI training sessions	42.2	87.3
Ever read surveillance reports	72.9	88.3
Use of surveillance data	70.0	88.2
Interest in NI control	59.2	80.4

Table 6. Administrators interviewed

Administrators	No	%
Deans of medical school	3	3.4
Director of hospitals	49	55.1
Chair persons of ICC	37	41.6
Total	89	100

Table 2. Members of infection control committee by hospitals (%)

Members	Categories of Hospitals*					Total
	U	R	P	D	Pri	
Internists	80	80	76.2	-	80	56.1
Infectious disease doctors	100	-	14.2	-	60	19.3
Infection control nurses	80	90	85.7	75.0	80	82.5
Heads of nursing dept.	40	50	81.0	75.0	80	70.2
Heads of pharmacy	60	60	81.0	50.0	80	66.7
Microbiologists	80	90	61.9	6.3	60	52.6
Heads of laboratory dept.	-	30	66.7	62.5	20	49.1
Other	80	70	76.2	68.8	60	71.9

U = university, R = regional, P = provincial, D = district, Pri = private

and administrators or healthcare personnel was also a major problem. Irregular reports of surveillance data was found in as high as 29.2%. One important obstacle for NI control was the lack of interest among personnel.

The performance of some supporting units for NI control was far from satisfactory (Table 8). Over one half of administrators, doctors and nurses expressed dissatisfaction with their service. Table 9 shows different opinions on the availability of certain supplies. A higher proportion of personnel who considered the supply of materials not adequate were ward nurses when compared with administrators, doctors and ICNs. Information from ward nurses should be considered more accurate due to direct involvement in routine work.

Opinions expressed by doctors and nurses not directly involved in NI control process are shown in Table 10. High proportions of these personnel showed negative attitudes towards NI control. In as high as 60.8% of personnel, NI control quality was considered unsatisfactory.

Discussion

The hospitals in the present study were enrolled by stratified random sampling. They represented hospitals of all categories (Table 1). In every hospital, there was one ICC. The members of the ICC were shown in Table 2. The ICC were chaired by the directors in 14 and by doctors of various specialties in 43 hospitals. Infectious disease (ID) doctors were present in the ICC of all university hospitals (Table 2). In other hospitals, only a few ID doctors were involved. This is due to the lack of ID doctors in Thailand. In many hospitals, the ICC did not include ICNs, heads of nursing department as members. The reasons behind the appointment were to be explored. The quality of ICC lacking these key persons is questioned[6]. Regular meetings of ICC were held in only 75% (Table 3). Without regular meetings, it

Table 7. Problems in NI control experienced by administrators (%) (N=89)

Problems	%
Assignment of infection control doctors	58.1
Low competency of infection control doctors	50.6
Assignment of ICNs	18.4
Low competency ICNs	28.1
Collaboration between:	
ICC and administrators	62.9
ICC and personnel	20.9
Value of surveillance data	55.1
Irregular surveillance reports	29.2
Lack of interest of personnel in NI control	45.5

Table 8. Departments with low quality of service expressed by administrators (N=89), and doctors and nurses (N=1,352) (%)

Depatments	Administrators	Doctors-Nurses
Central sterile supply	47.7	41.3
Nutrition	66.3	64.3
Laundry	68.2	64.5
Waste management	72.1	73.7
Waste water treatment	69.8	65.6

Table 9. Inadequate supply of materials used in NI control (range, %)

Materials	Range (%)
Personnal protective equipment	
Disposable gloves	0-4.9
Aprons	0-14.8
Masks	0-19.3
Goggles	1.8-32.3
Antiseptics-disinfectants	
Alcohol	0-0.9
Tr. Iodine	0-30.8
Chlorhexidine	0-31.3
Hypochlorite	0-21.1
Glutaraldehyde	0-39.7
Lysol	0.62.3

Table 10. Problems experienced by doctors and nurses not directly involved in NI Control (N=39 and 58) (%)

Problems	%
NI control policy not known	37.1
Low quality of ICC	35.0
Performance of ICC unacceptable	76.0
Healthcare workers not interested in ICC	26.0
Never attended NI control education	33.3
Never read NI control guidelines	17.8
Never read surveillance reports	18.7
Questioned validity of surveillance report	43.5
Low NI control quality	60.8

is difficult to plan, to implement and to follow the practice of NI control. One major outdated practice was hospital-wide, continuous, usually passive, survey done by inexperienced nurses. This resulted in underdiagnosis and misdiagnoses. The data collected were not applicable to clinical practices. Even though the number of hospitals conducting targeted survey is rising; at the time of the present study, it was applied only in 63.2% of hospitals.

The routine practice in NI control is done by ICNs. They are responsible for service, teaching, supervising and assessing NI control activities in hospitals. In the present survey, only 59.6% of ICNs had been educated in infections control (Table 4). Only 22.9% of ICNs worked full-time. The shortage of competent ICNs has been a chronic problem in Thai hospitals resulting in improper practices and a high incidence of NI[10].

Co-operation of doctors and nurses is crucial for the success in NI control[8]. As shown in Table 5, the co-operation of doctors was low; only 72.9% ever read surveillance reports. The involvement of nurses, even though higher than doctors, needs to increase. The problems experienced by 89 administrators (Table 6) are shown in Table 7. The major one was to find doctors and nurses who were willing to be directly involved in NI control. This is due to the lack of positions for infection control doctors and nurses. There is no career ladder in infection control unless an official position has been established. Infection control is considered an extra and temporary function for doctors and nurses. They are prompt to quit when their term expires. It is not easy to convince administrators to grant infection control posts amid the need to cut manpower in every sector of health care. One can imagine the quality of NI control done by unwilling, incompetent and part-time doctors and nurses. The collaboration between ICC and administrator, ICC and hospital personnel has to be improved (Table 7), as were the perceived value of surveillance data. Administrators also realized that hospital personnel were not interested in NI control.

The quality of infrastructures for NI control was assessed by administrators, doctors and nurses (Table 8). Improvement of the function of all departments is needed, especially central sterile supply department. The development process requires competent personnel, budget and proper management. It takes time and requires support of administrators. The supply of certain materials essential for infection control was considered inadequate at different levels depending on the opinions of different persons (Table 9). Administrators tended to consider that the materials were adequately provided. Ward nurses and ICNs who used these materials in their routine knew better and considered that some were inadequate. The communication between users and suppliers should be improved to provide sufficient materials for clinical use.

The information given by doctors and nurses not directly responsible for NI control was discouraging (Table 10). Ignorance, negative attitude toward NI control prevailed in the majority group of healthcare personnel. Unless they are convinced of the merit of NI control and they understand their roles, the quality of NI control can never be improved.

Conclusion

The present study illustrates that the quality of NI control in 57 hospitals in Thailand has yet to be improved regarding structure and process. Better co-operation between NI control team and healthcare personnel needs to be cultivated.

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คุณภาพของการป้องกันและควบคุมโรคติดเชื้อในโรงพยาบาลของประเทศไทย

สมหวัง ด่านชัยวิจิตร, อนุวัตร ศุภชุติกุล, ศรีเบ็ญจา ไวทยพิเชษฐ, กาญจนา คชินทร

วัตถุประสงค์ : *ศึกษาคุณภาพของการควบคุมโรคติดเชื้อในโรงพยาบาลทั้งทางด้านโครงสร้างและกระบวนการ*

วัสดุและวิธีการ : *เก็บข้อมูลจากการตอบแบบสอบถามและสัมภาษณ์ผู้บริหารและบุคลากรทางการแพทย์ในโรงพยาบาล 57 แห่งทั่วประเทศใน พ.ศ. 2545*

ผลการศึกษา : *การควบคุมโรคติดเชื้อในโรงพยาบาลกระทำในทุกโรงพยาบาล 57 แห่งที่ศึกษา มีพยาบาลควบคุมโรคติดเชื้ออย่างน้อย 1 คนในแต่ละโรงพยาบาล ความรู้ ทักษะและเวลาที่ทำหน้าที่ของพยาบาลควบคุมโรคติดเชื้อควรได้รับการพัฒนา วิธีการเฝ้าระวังโรคติดเชื้อในโรงพยาบาลยังไม่เหมาะสม แพทย์ไม่สนใจกิจกรรมควบคุมโรคติดเชื้อในโรงพยาบาล วัสดุหลายรายการไม่เพียงพอต่อการใช้ ขาดความร่วมมือของแพทย์และพยาบาล การปฏิบัติงานของหลายหน่วยงานไม่เป็นที่น่าพอใจมากกว่าครึ่ง แพทย์และพยาบาลที่ไม่มีหน้าที่เกี่ยวข้องโดยตรงกับการควบคุมโรคติดเชื้อไม่พอใจกับการปฏิบัติงานควบคุมโรคติดเชื้อ*

สรุป : *คุณภาพของการควบคุมโรคติดเชื้อในโรงพยาบาลควรได้รับการปรับปรุงทั้งด้านโครงสร้างและกระบวนการ ควรสร้างความร่วมมือระหว่างบุคลากรควบคุมโรคติดเชื้อกับบุคลากรอื่น ๆ ในโรงพยาบาล*
