Nosocomial Infection Control in Regional and Provincial Hospitals

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Objectives : *To study the organization and practices in nosocomial infection (NI) control in regional and provincial hospitals.*
Material and Method : *Data were collected by questionnaires answered by chair persons of infection control committees (ICC) infection control nurses (ICNs) and link nurses in regional and provincial hospitals..*
Results : *From April to June 2002, sets of questionnaires were sent to all chair persons of regional and provincial hospitals, 120 infection control nurses and 57 link nurses. Of 92 hospitals, 78.3% of chair persons and all ICNs and link nurses responded. The ICC were chaired by the directors or deputy directors in 26.4% and by doctors in various specialties in the remaining. Among ICNs, 14.2% had never attended a course in infection control and 62.5% had less than 6 years experience. Lack of support from administrators, budget, co-operation from medical personnel and ICN position were the main problems in the IC program.*
Conclusion : *Nosocomial infection control in regional and provincial hospitals in Thailand needs more support from administrators and more co-operation from medical personnel. .*

Keywords : *Nosocomial infection, Control, Regional hospitals, Provincial hospitals*

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Nosocomial infection (NI) is a common complication affecting patients in hospitals. Patients with underlying diseases, invasive diagnostic or therapeutic procedures predispose patients to NI[1]. It prolongs hospitalization[2] and is associated with higher mortality rates compared to patients without the infection[3]. The costs of treatment of NI are substantial, especially in developing countries where resources for healthcare are limited[4]. Healthcare workers (HCWs) are at risks of exposure to infection as a significant number of patients harbor contagious diseases[5]. Prevention and control of NI are essential for the safety of not only patients but also of HCWs. Studies have shown that appropriate NI prevention reduced the incidence of NI by one third[6,7]. Even though NI control has been introduced into Thailand since 1971[8], the progress in its practice is far from satisfactory. Regional and provincial hospitals are responsible for tertiary and secondary medical care of the people respectively. An effective NI control program would greatly benefit patients, HCWs and the country as a whole.

The present study was to evaluate the current NI control in the organization and practice in these hospitals. Problems and obstacles were also collected for future development.

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Material and Method

A descriptive study was done in all regional and provincial hospitals in Thailand during April and June 2002. Sets of questionnaires with content validity and reliability of 0.94 and 0.84 respectively were used. Chairpersons of infection control committee (ICC), infection control nurses (ICNs) and link nurses were re-

quested to answer the questions. Problems in NI control were given by ICNs, and link nurses. Descriptive statistics were used in analysis.

Results

The questionnaires were sent to 92 regional and provincial hospitals, 72 chair persons of ICC responded (78.3%). All 120 sampled ICNs answered the questionnaires. Demographic data of ICC chairs and ICNs are shown in Table 1. The predominant age group was 31-45 years with a mean age ± SD of 42.0±7.5 and 39.8±6.2 of ICC chairs and ICNs respectively. Only in 4 hospitals, (5.6%) the ICC were chaired by the directors of the hospitals, and in 15 (20.8%) by deputy directors (Table 2). Doctors from various specialties were the major group of chair persons. In 1 hospital, the ICC was chaired by a nurse.

One hundred and twenty ICNs participated in the present study and 82.0% worked full time (Table 3). Up to 14.2% of the ICNs had never attended a course in NI. Experience in NI control was 1-3 years in 38.3%

Table 1. Demographic data of participants (%)

Demographic data	Chair persons of ICC (N=72)	%	ICNs (N=120)	%
Genders				
Male	55	76.4	1	0.8
Female	17	23.6	119	99.2
Age (yr)				
≤30	4	5.6	2	1.7
31-35	14	19.4	26	21.7
36-40	14	19.4	50	41.7
41-45	16	22.2	21	17.5
46-50	12	16.7	11	9.2
>50	12	16.7	10	8.3
Mean±SD	42.0±7.5		39.8±6.2	

Table 2. Chair persons of ICC (N=72)

Chair persons	No	%
Directors	4	5.6
Deputy director	15	20.8
Medical doctors (N = 52)		
Internists	19	36.5
Pediatricians	16	30.8
Surgeons	9	17.3
Other	8	15.3
Nurse	1	1.4

Table 3. Experience in practice and education in NI of ICNs (N=120)

Experiences	No	%
Practices (yr)		
1-3	46	38.3
4-6	29	24.2
7-9	13	10.8
10-12	19	15.8
>12	13	10.8
Education in NI		
Yes	103	85.8
No	14	14.2

Table 4. Roles of ICC chairs and ICNs in N.I. control (%)

Roles	ICC chairs	ICNs
Administration		
Organization of committee	100.0	100.0
Formulation of policy	98.6	98.3
Job assignment to HCWs	100.0	100.0
Information system	88.9	90.0
Present data to administrators	88.9	88.3
Practices		
Surveillance	100.0	100.0
Isolation/precautions	90.3	92.5
Environmental hygiene	90.3	91.7
Personnel health	94.4	96.7
Quality improvement	87.5	90.8
Evaluation of NI control program	91.7	93.3

Table 5. Problems in NI control as expressed by ICNs and linked nurses (N=177)

Problems	%
Administration	
Inadequate budget	44.6
No ICN position	27.1
Lack of support from administrators	23.2
Excessive workload for ICNs	30.5
Lack of specialized doctors	10.2
Lack of essential supplies	42.4
Practice	
Lack of co-operation	74.6
Lack of co-operation from doctors in surveillance	16.9

and 4-6 years in 24.2%. There were 13 ICNs (10.8%) who had worked for over 12 years. As shown in Table 4, all ICNs were involved in administration of NI control. The majority of chair persons of ICC were involved in the IC practices and evaluation. The problems in NI control as expressed by 177 ICNs and linked nurses are shown in Table 5.

Discussion

The tertiary and secondary medical care to the majority of people in Thailand is provided in 25 regional and 67 provincial hospitals. The impacts of NI in these hospitals are high and proper control can substantially reduce the morbidity, mortality and costs[7]. Even though NI control has been implemented for 3 decades[8], its quality has yet to be evaluated. The infrastructures and practices in I.C. are the key elements to determine the success. To comply with the regulations for hospital accreditation, IC program has been set in every hospital. The chair persons of ICC are the leaders of the team and ICNs carry out most of the routine IC functions. The ICC in the hospitals studied was chaired by the directors and deputy directors of hospitals in only 26.4% (Table 2). In the remaining, the chair persons were mainly doctors from clinical departments. They were assigned to the posts rather than being specialists in infectious diseases or hospital epidemiology or microbiology. Usually, the term of chairmanship expires every 2 years and it is taken over by another chair person. Continuity of the IC program and quality of IC in these hospitals have yet to be evaluated.

It has been planned that an ICN should be allocated to 150-250 beds in every hospital. Due to limitation of resources and ever changing health policy at every level, allocation of an ICN position has long been a problem. The finding in the present study that 91.3% and 70.4% of ICNs in regional and provincial hospitals respectively were full-time ICNs indicates that IC has received more support from administrators. If these ICNs were awarded with an IC position, they could be promoted to higher levels by their performance in IC. This will lead to the retaining of experienced ICNs in the IC program. As shown in table 3, 62.5% of ICNs in the present study had work experience of less than 6 years. Many ICNs had to change the job after a few years in the IC program because they could not be promoted due to the lack of ICN positions. It is hoped that this problem will be dealt with in the near future. Infection control is a specialty, nurses need to be educated before taking an the assignment. In the present survey, only 85.8% of ICNs had some kinds of IC education. Education to ICC chair persons, IC practitioners, ICNs and microbiologists has been planned and submitted for budget approval. It is hoped that the training courses will improve their performance. The retaining of experienced personnel, however, is the ultimate goal of success.

Problems in the IC program, as indicated in Table 5, were common for most hospitals in Thailand. The root of the problem is the lack of support from administrators in infection control, including nosocomial infection. The epidemics of severe acute respiratory syndrome (SARS) and avian influenza in this region do alert the administrators to take more action in infection control. How long they will be interested in this subject by this political motivation is questioned.

Conclusion

Nosocomial infection control in regional and provincial hospitals in Thailand in 2002 needs more support from administrators and more co-operation from medical personnel.

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References

1. Rezende EM, Couto BRGM, Sterling CEF, Modena CM. Prevalence of nosocomial infections in general hospitals in Belo Horizonte. J Infect Control Epidemiol 1998; 19: 872-6.
2. Plowman R, Graves N, Griffin MAS, Roberts JA, Swan AV, Cookson B, et al. The rate and cost of hospital-acquired infections occurring in patients admitted to selected specialties of a district general hospital in England and the national burden imposed. J Hosp Infect 2001; 47: 198-209.
3. Astagneau P, Rioux C, Gilliot F, Brucker G. INCISO Network Study Group. Morbidity and motality associated with surgical site infections : Results from the 1997-1999 INCISO surveillance. J Hosp Infect 2001; 48: 267-74.
4. Orrett FA, Brooks PJ, Richardson EG. Nosocomial infection in a rural regional hospital in a developing country: infection rate by site, service, cost and infection control practices. Infect Control Hosp Epidemiol 1998; 19: 136-40.

5. Baldo V, Floreani A, Vecchio LD, Cristofoletti M, Carletti M, Majori S, et al. Occupational risk of blood-borne viruses in healthcare workers: a 5 years surveillance program. Infect Control Hosp Epidemiol 2002; 23: 325-7.
6. Haley RW, Culver DH, White JW, Morgan WH, Emori TG, Munn VP, et al. The efficacy of infection control program in preventing and control of nosocomial infection in U.S. hospitals. Am J Epidemiol 1985; 121: 182-203.
7. Danchaivijitr S, Tangtrakool T, Waitayapiches S, Chokloikaew S. Efficacy of nosocomial infection control in Thailand 1988-1992. J Hosp Infect 1996; 32: 147-53.
8. Danchaivijitr S, Chantrapa V, Chuenklinthoop U, Limsuwan A. Policy and implementation of nosocomial infection control - a symposium. J Med Assoc Thai 1989; 72(Suppl 2): 54-6.

การป้องกันและควบคุมโรคติดเชื้อในโรงพยาบาลศูนย์และโรงพยาบาลทั่วไป

สุกัญญา บัวชุม,พูนทรัพย์ โสภารัตน์, สุสัณหา ยิ้มแย้ม, ธวัชชัย จริยเศรษฐพงศ์, สมหวัง ด่านชัยวิจิตร

วัตถุประสงค์ : *ศึกษาการจัดตั้งองค์กรและการปฏิบัติเพื่อควบคุมโรคติดเชื้อในโรงพยาบาลศูนย์และโรงพยาบาลทั่วไป*
วัสดุและวิธีการ : *ใช้แบบสอบถามประธานคณะกรรมการควบคุมโรคติดเชื้อ พยาบาลควบคุมโรคติดเชื้อ และพยาบาลประสานงานเพื่อควบคุมโรคติดเชื้อ*
ผลการศึกษา : *ระหว่างเดือนเมษายน-มิถุนายน พ.ศ. 2545, แบบสอบถามที่ส่งไปยังประธานคณะกรรมการควบคุมโรคติดเชื้อ พยาบาลควบคุมโรคติดเชื้อและพยาบาลประสานงานในโรงพยาบาลศูนย์และโรงพยาบาลทั่วไปรวม 92 แห่ง ร้อยละ 78.3 ของประธานกรรมการฯ พยาบาลควบคุมโรคติดเชื้อและพยาบาลประสานงานทุกคนตอบแบบสอบถามประธานกรรมการฯ เป็นผู้อำนวยการหรือรองผู้อำนวยการร้อยละ 26.4 ที่เหลือเป็นแพทย์จากสาขาวิชาต่าง ๆ พยาบาลควบคุมโรคติดเชื้อ 14.2% ไม่เคยได้รับการอบรมวิชาโรคติดเชื้อ และ 62.5% มีประสบการณ์น้อยกว่า 6 ปี ปัญหาที่ประสบที่สำคัญคือการขาดการสนับสนุนจากผู้บริหาร การขาดความร่วมมือจากบุคคลในโรงพยาบาลและไม่มีตำแหน่งพยาบาลควบคุมโรคติดเชื้อ*
สรุป : *การควบคุมโรคติดเชื้อในโรงพยาบาลศูนย์และโรงพยาบาลทั่วไปขาดการสนับสนุนจากผู้บริหารและความร่วมมือของบุคลากรในโรงพยาบาล*