Development of National Guidelines for the Prevention and Control of Nosocomial Infections

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Objective : *To develop a national evidence-based guidelines for the prevention and control of nosocomial infection*
Material and Method : *Draft guidelines for the prevention and control of nosocomial infection were developed by the researchers and reviewed by a 10 member panel of experts. The guidelines were modified by brainstorming of 55 practitioners in July 2002. The guidelines were tested for their applicability in 20 hospitals across the country in 2002. The participants gave suggestions on the guidelines which were modified accordingly. The guidelines were finalized by brainstorming of the 55 practitioners in August 2003.*
Results : *National guidelines for the prevention and control of nosocomial infections were developed. Twenty-one topics were included. Modifications of the drafted guidelines were made four times according to the opinions of 10 experts, twice by brainstorming of 55practitioners and by the suggestions of participants from 20 hospitals where they were tested. The practices in hospitals with different facilities were also suggested in the guidelines.*
Conclusion : *National guidelines for prevention and control of nosocomial infection were formulated. Their application for use in every hospital and periodic reviews are expected.*

Keywords *: National guidelines, Prevention, Nosocomial infection*

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Nosocomial infection (NI) control in Thailand was initiated in 1971[1]. Practice guidelines were mainly adopted from those in developed countries[2]. Owing to the differences in resources for infection control, an effort was made to develop definitions for diagnosis of NI in 1988[3]. Progress has been made in terms of policy, implementation of NI control, resulted in a significant reduction of the prevalence rates of NI[4]. To further expand the NI control activities, national guidelines for NI control are essential[5]. These guidelines should be evidence-based, driven by practice need, agreed by multi-professional concensus, and modified over time[6]. The guidelines should also address the different practices in hospitals which vary in facilities and resources.

The Nosocomial Infection Control Group of Thailand have developed many practice guidelines for NI control since 1987. It is deemed that a study into the development of national guidelines should be carried out. The results could be put together to formulate appropriate guidelines for NI control for hospitals of all facility levels in Thailand.

Meterial and Method

Draft guidelines were written by the researchers. Twenty-one main topics in NI control were included. The guidelines were sent to 10 leading NI control practitioners in Thailand for review. The first reviewed draft were further debated by brain-storming of 55 multi-professional members in a conference in July 2002. The

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draft were amended for the second time after the debate. The second reviewed drafts were sent to 20 hospitals across Thailand to test for praticality for 1 month. Users of the second reviewed draft guideline made various useful suggestions. Their comments were included in the third review of the drafts. They were further scrutinized by the 55 multi-professional members in August 2003. The national guidelines on nosocomial infection control were finalized after the fourth review.

Results

Topics to be included in the national guidelines are shown in Table 1. There were 2 topics in organization of NI control in a hospital, the structure and committees. Subjects in NI practice include surveillance, practices and intervention of outbreaks of NI.[7] The NI control program should be properly audited. After drafting the guidelines, they were later reviewed by a panel of experts in NI control in the countries, of whom 3 were doctors and 7 nurses (Table 2). They were from medical and nursing schools, department of nursing and from general hospitals. Modification of the draft guidelines were made as shown in Table 3. The first reviewed guidelines were debated in a group of 55 NI control practitioners (Table 4). They were randomly selected according to professions, categories of hospitals and geographical distribution. Major modifications were made after the debate and the second reviewed guidelines were issued. They were tested for practicability in 20 hospitals for 1 month (Table 5). The hospitals were enrolled by stratified randomization so that the opinions generated would represent those from the majority hospitals. Table 6 shows the number of hospitals where guidelines in various topics were not practical. Comments and suggestions were given by doctors and nurses of these hospitals. The guidelines were revised for the third time using the above information. They were debated by the panel of 55 practitioners and minor changes were made in the final draft guidelines.

Examples of the 120 page finalized national guidelines are given as in Table 7.

Discussion

The present study aimed to develop national guidelines for preventing NI in Thailand. They are intended to lead the development of more detailed operational protocols at individual hospitals. The guidelines must be evidence-based and modified so that they are appropriate in all categories of hospitals. In big

Table 1. Topics in national guidelines for the prevention and control of nosocomial infections

	Topics
Organization	1. Structure
	2. Committees
Practices	3. Definitions and diagnosis
	4. Surveillance
	5. Intervention of outbreaks
	6. Isolation precautions
	7. Prevention of respiratory tract infection
	8. Prevention of catheter associated urinary tract infection
	9. Prevention of surgical site infection
	10. Prevention of skin and soft tissue infection
	11. Prevention of blood stream infection
	12. Prevention of infection in clinical laboratories
	13. Prevention of infection from dead bodies
	14. Handwashing
	15. Disinfection and sterilization
	16. Management in central sterile supply department
	17. Management of linens
	18. Prevention of infection in nutrition department
	19. Prevention of contamination of enteral feeds
	20. Management of hospital waste
Auditing	21. Auditing the prevention and control of hospital infection program

Table 2. Member of practitioners who reviewed the draft guidelines

Sources	Doctors	Nurses
Faculties of Nursing	-	3
University hospitals	1	1
Regional hospitals	1	1
Private hospital	1	-
Department of Nursing Ministry of Public Health	-	2
Total	3	7

Table 3. Number of experts modified the original draft by researchers (N=10)

Topics		No
Organization	1. Structure	6
	2. Committees	6
Practices	3. Definitions and diagnosis	7
	4. Surveillance	9
	5. Intervention of outbreaks	3
	6. Isolation precautions	9
	7. Prevention of respiratory tract infection	9
	8. Prevention of catheter associated urinary tract infection	9
	9. Prevention of surgical site infection	5
	10. Prevention of skin and soft tissue infection	3
	11. Prevention of blood stream infection	8
	12. Prevention of infection in clinical laboratories	7
	13. Prevention of infection from dead bodies	7
	14. Handwashing	8
	15. Disinfection and sterilization	8
	16. Management in central sterile supply department	4
	17. Management of linens	9
	18. Prevention of infection in nutrition department	6
	19. Prevention of contamination of enteral feeds	6
	20. Management of hospital waste	7
Auditing	21. Auditing the prevention and control of hospital infection program	1

Table 4. Infection control practitioners in brain storming sessions

Sources	Doctors	Nurses
University hospitals	2	5
Regional hospitals	4	9
Provincial hospitals	2	12
District hospitals	-	5
Private hospitals	2	2
Faculty of Nursing	-	3
Others	3	6
Total	13	42

Table 5. Categories of hospitals where the guidelines were tested for practicability

Categories	Number
University hospitals	3
Regional hospitals	5
Provincial hospitals	5
District hospitals	2
Private hospitals	5
Total	20

Table 6. Number of hospital suggested modification of the second reviewed guidelines (N=20)

Topics		No	%
Organization	1. Structure	8	40
	2. Committees	12	60
Practices	3. Definitions and diagnosis	9	45
	4. Surveillance	10	50
	5. Intervention of outbreaks	2	10
	6. Isolation precautions	7	35
	7. Prevention of respiratory tract infection	13	65
	8. Prevention of catheter associated urinary tract infection	12	60
	9. Prevention of surgical site infection	10	50
	10. Prevention of skin and soft tissue infection	6	30
	11. Prevention of blood stream infection	14	70
	12. Prevention of infection in clinical laboratories	10	50
	13. Prevention of infection from dead bodies	8	40
	14. Handwashing	6	30
	15. Disinfection and sterilization	8	40
	16. Management in central sterile supply department	8	40
	17. Management of linens	6	30
	18. Prevention of infection in nutrition department	6	30
	19. Prevention of contamination of enteral feeds	11	55
	20. Management of hospital waste	11	55
Auditing	21. Auditing the prevention and control of hospital infection program	5	25

Table 7. Content of guidelines

Activities	Practices	Levels			
		A	B	C	D
Surveillance Of NI	Point prevalence survey 1-2 per year	1	1	1	1
	Continuous survey	1	1	1	2
	Targeted survey	1	1	1	2
Tracheostomy	Adherence to aseptic technique	1	1	1	1
	To perform in Operating theater	2	2	2	2

Levels 1 = strongly recommended
2 = recommended
Categories of hospitals
A = university hospitals (>1000 beds)
B = regional hospitals (500-1500 beds)
C = provincial hospitals (120-500 beds)
D = district hospitals (10-120 beds)

hospitals, for example, university hospitals, more laboratory tests are available than in small district hospitals. Guidelines for these hospitals should be tailored to suit each hospital. Simple, short guidelines are more applicable in Thailand where experienced NI control professionals are limited in number[7].

The key areas in NI control were chosen for development of national guidelines (Table 1). Essential elements in organization of NI control in a hospital were included. The main structures for NI control were recommended. They included a committee, a policy, a work system, auditing and a channel for communication between administrators and NI control practitioners. The main members in NI committee were also proposed together with their job assignments. Surveillance methods, clinical practice guidelines including intervention of an outbreak of NI and evaluation of NI control program were included. A group of outstanding NI control practitioners were invited to review the draft by the researchers (Table 2). Valuable suggestions and modification of the original draft were made by these experts (Table 3). In most topics, the original drafts were modified to make them more practical. The amended version was later debated by 55 NI control practitioners (Table 4). More detailed changes were made in this debate and the second reviewed guidelines were issued. To test their practicability, they were tested in 20 hospitals across the country (Table 5). After 1 month, comments and suggestions were given by doctors and nurses in these hospitals, mainly on practicability of the guidelines (Table 6). They were modified for the third time by the researchers and subsequently scrutinized in sessions of brain-storming of the 55 NI control professionals. The finalized national guidelines on NI control have gone through 4 reviews 1 by experts, 2 by brain storming and 1 by doctors and nurses in hospitals where they were tested. It is hoped that the national guidelines be appropriate for the country[7]. However, periodic review and modification are essential to keep them up-to-date[5].

Conclusion

National guidelines for prevention and control of NI were formulated. The guidelines have gone through 4 review processes, 1 by a group of experts, 2 by a panel of 55 NI control practitioners and 1 by users. It is hoped that the guidelines be appropriate for all hospitals in Thailand.

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การพัฒนาวิธีปฏิบัติระดับประเทศเพื่อการป้องกันและควบคุมโรคติดเชื้อในโรงพยาบาล

สมหวัง ด่านชัยวิจิตร, ยงค์ รงค์รุ่งเรือง, ไพฑูรย์ บุญมา, สมพร สันติประสิทธิ์กุล, เทพนิมิตร จุแดง

วัตถุประสงค์ : *พัฒนาวิธีปฏิบัติระดับชาติที่ยึดข้อมูลเป็นหลักเพื่อการป้องกันและควบคุมโรคติดเชื้อในโรงพยาบาล*
วัสดุและวิธีการ : *คณะผู้วิจัยร่างวิธีปฏิบัติเพื่อป้องกันและควบคุมโรคติดเชื้อในโรงพยาบาล ซึ่งได้รับการปรับปรุงแก้ไขโดยผู้ทรงคุณวุฒิ 10 ท่าน นำข้อปฏิบัติที่ปรับปรุงแล้วพิจารณาแก้ไขโดยการระดมสมองของบุคลากรป้องกันและควบคุมโรคติดเชื้อในโรงพยาบาล 55 ท่าน ในเดือนกรกฎาคม พ.ศ. 2545 หลังจากแก้ไขเป็นครั้งที่ 2 นำวิธีการปฏิบัติไปทดลองใช้ในโรงพยาบาล 20 แห่ง เป็นเวลา 1 เดือน ผู้ใช้วิธีปฏิบัติได้ให้คำแนะนำซึ่งนำมาแก้ไขวิธีปฏิบัติเป็นครั้งที่ 3 การจัดทำวิธีปฏิบัติขั้นสุดท้ายอาศัยข้อมูลจากความเห็นของการระดมสมองของบุคลากร 55 ท่าน ในเดือนสิงหาคม พ.ศ. 2546*
ผลการศึกษา : *ได้วิธีปฏิบัติระดับชาติเพื่อการป้องกันและควบคุมโรคติดเชื้อในโรงพยาบาล วิธีปฏิบัตินี้ครอบคลุม 21 หัวข้อ วิธีปฏิบัตินี้ผ่านการแก้ไข 4 ครั้ง, กระทำโดยผู้ทรงคุณวุฒิ 1 ครั้ง, การระดมสมองของบุคลากรป้องกัน และควบคุมโรคติดเชื้อในโรงพยาบาล 2 ครั้ง และจากผู้ใช้ 1 ครั้ง*
สรุป *: ได้พัฒนาวิธีปฏิบัติระดับชาติเพื่อป้องกันและควบคุมโรคติดเชื้อในโรงพยาบาลโดยอาศัยความร่วมมือของบุคลากรหลาย ๆ ฝ่ายและผ่านการทดสอบการใช้ วิธีปฏิบัตินี้สามารถนำไปใช้ได้ทุกโรงพยาบาลในประเทศไทย*