DEVELOPMENT OF EMERGENCY NURSING SERVICE IN BANGKOK CHRISTIAN HOSPITAL, CHURCH OF CHRIST IN THAILAND, 2003

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DEVELOPMENT OF EMERGENCY NURSING SERVICES IN BANGKOK CHRISTIAN HOSPITAL, CHURCH OF CHRIST IN THAILAND, 2003.

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ABSTRACT

The emergency unit of a hospital must provide nursing services to accident and emergency patients. If the patients do not receive the immediate help, they may die or become disabled. Emergency units have a lot of problems such as poor preparation at the start of shifts and unclear nursing processes. Preparation and processes need to be improved in a way that satisfies medical staff, administrators and patients. A new working model that address these problems was designed for the emergency unit at Bangkok Christian hospital. The experimental model was implemented by a new working models for three months. A pre-test and post-test using checklists, record forms and questionnaires to medical staff, administrator and patients were used to assess quality of service, quantity of services delivered, length of time of services and the satisfaction of the people involved. The results were analyzed by Man Whitney U Test and t-test at alpha 0.05.

It was found that after implementing the new working model, the correctness of preparation on personnel before the performance was improved ($p < 0.001$) and the satisfaction of the related people was also higher ($p < 0.001$). The average time from walk-in until seeing a doctor decreased ($p < 0.001$). While wage expenses increased. It was shown that the new working model constructed by the researcher was effectiveness and appropriateness for the experimental area because implementation was good with a clear system, and was accepted by the related people from the beginning. The recommendation and suggestions in this research are that follow-up and evaluation should be done in order to improve the service continuously. Moreover, the experience in this development model should be applied in emergency service and other tasks in the hospital for continuous improvement.

KEY WORDS: EMERGENCY NURSING SERVICE / DEVELOPMENT / ACTION RESEARCH / R& D

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การพัฒนางานบริการพยาบาลผู้ป่วยอุบัติเหตุและฉุกเฉิน โรงพยาบาลกรุงเทพคริสเตียน สภาคริสตจักรแห่งประเทศไทย พ.ศ. 2546 (DEVELOPMENT OF EMERGENCY NURSING SERVICE IN BANGKOK CHRISTIAN HOSPITAL, CHURCH OF CHRIST IN THAILAND, 2003)

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บทคัดย่อ

หน่วยงานอุบัติเหตุและฉุกเฉินต้องให้การบริการรักษาพยาบาลผู้บาดเจ็บจากอุบัติเหตุและเจ็บป่วยอย่างกะทันหันที่อยู่ในภาวะวิกฤตที่ต้องการความช่วยเหลืออย่างเร่งด่วนและฉับไว ซึ่งถ้าผู้รับบริการไม่ได้รับการช่วยเหลืออย่างทันท่วงที หรือไม่ถูกต้อง จะส่งผลทำให้ผู้รับบริการเสี่ยงต่อการเสียชีวิตหรือเกิดความพิการได้ ปัญหาเกี่ยวกับงานบริการรักษาพยาบาลผู้ป่วยอุบัติเหตุและฉุกเฉินมีมากมาย ทั้งในด้านปริมาณงาน คุณภาพงาน เวลา และ ความพึงพอใจของผู้ที่เกี่ยวข้อง งานให้การบริการรักษาพยาบาลผู้ป่วยอุบัติเหตุและฉุกเฉิน จึงเป็นงานที่มีความสำคัญและสมควรได้รับการปรับปรุงแก้ไข เพื่อให้การปฏิบัติงานเป็นไปอย่างมีประสิทธิภาพก่อให้เกิดผลดีต่อผู้ป่วย ก่อให้เกิดความพึงพอใจทั้งต่อผู้มาใช้บริการ ต่อผู้ปฏิบัติงาน และต่อผู้บริหาร ผู้วิจัยจึงทำวิจัยปฏิบัติการกึ่งทดลองชนิดสองกลุ่ม เปรียบเทียบก่อนกับหลังการพัฒนางาน โดยนำหลักวิชาการต่าง ๆ มาประยุกต์ในการสร้างรูปแบบการดำเนินงานใหม่ของงานบริการรักษาพยาบาลผู้ป่วยอุบัติเหตุและฉุกเฉิน แล้วนำไปทดลองใช้เป็นเวลา 3 เดือนในโรงพยาบาลกรุงเทพคริสเตียน โดยให้หน่วยอุบัติเหตุและฉุกเฉินโรงพยาบาลเซ็นหลุยส์เป็นกลุ่มควบคุม เปรียบเทียบผลการดำเนินงานในด้าน ปริมาณงาน คุณภาพงาน ความพึงพอใจ เวลา และ ค่าใช้จ่าย ด้วยค่าสถิติแมนวิทนี ยู และ ค่าสถิติ ที ที่ระดับ แอลฟา = 0 .05

ผลการวิจัยพบว่า หลังนำรูปแบบใหม่ไปดำเนินการ มีการเตรียมความพร้อมด้านบุคลากรก่อนเริ่มปฏิบัติงานสูงขึ้น ($p < 0.001$) ความพึงพอใจของผู้เกี่ยวข้องสูงขึ้น ($p < 0.001$) ระยะเวลาเฉลี่ยตั้งแต่ผู้ป่วยเข้ามารับบริการในหน่วยงานจนกระทั่งได้พบแพทย์ลดลง ($p < 0.001$) ในขณะที่ค่าใช้จ่ายเพิ่มขึ้นแต่เป็นค่าลงทุนด้านบุคลากร แสดงให้เห็นว่ารูปแบบการดำเนินงานการบริการรักษาพยาบาลผู้ป่วยอุบัติเหตุและฉุกเฉินที่ผู้วิจัยสร้างขึ้น เป็นรูปแบบที่มีประสิทธิภาพและเหมาะสมกับพื้นที่ทดลอง เนื่องจากมีระบบงานที่ชัดเจน ถูกต้องตามหลักวิชาการ และมีวิธีการนำรูปแบบไปดำเนินการที่ดี เป็นที่ยอมรับของผู้เกี่ยวข้อง ได้เสนอแนะให้มีการติดตามประเมินผลเป็นระยะ ๆ เพื่อปรับปรุงพัฒนางานอย่างต่อเนื่อง และควรนำประสบการณ์ที่ได้ในการทำวิจัยครั้งนี้ไปประยุกต์ใช้ในการพัฒนา ทั้งงานบริการผู้ป่วยฉุกเฉินและงานอื่น ๆ ของโรงพยาบาลต่อไป

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CHAPTER 1
INTRODUCTION

Background and Rational

An Emergency Department is responsible for providing emergency health care to patients from accidents or suffered from emergency illness with critical condition.It is therefore an important unit in a hospital and needs to provide 24-hour service (Jenkins, 1978: 1).

As patients referred to Emergency Department usually have emergency and critical condition,so the health care needs to be performed urgently. Otherwise,it could result in mortality or disability (Kittiraktrakool, S. 1993: 6). Patients therefore have high expectation that they will be safe and can have normal life after receiving treatment at Emergency Department. Medical personnel should thus be able to response effectively (Hawanont, S. 1993: 3).

Emergency services have a long history of evolution. In Thailand, the emergency services are in every hospital. Under the 8th National Health Development plan (1997-2002) all hospital were required to develop efficient and up-to-date emergengy services. Moreover, the 9th National Health Develoment Plan (2003-2006) also set up the standards of health factories at each level that comparable to the international standards (Torugsa, S. 2001: 55).

Considering problems of the emergency services, it was found that on each day in a year the performance of emergency response were not completed (Torugsa, S. 2000: 68). This could be devided into several aspects. In term of quantity, it was found there were too that many patients receiving emergency services

per year. Certainly, there is a number of people do not receive the deserve services or receive the services below the hospital capacity (The 8th National Health Development Plan Committee, 1996: 141). In term of service quality, it was found to be still low, inefficient and preventable complicatiom still arise (Torugsa, S. 1996: 22). Some study also found that about 43 percent of the death patients from accidents in developed countries could be safe if receiving correct treatment within 10 minutes after the accidents. Besides about 15 percent were death during the treatment, from complication, function failure and acute infection. It was estimated that the death rate was higher in developing countries (Chartbahchachai, W. 1991 cited in Pitimana-aree, S. 1997: 3). Besides, the patients also did not receive completed treatment and received under standard treatment (Holleran, 1994: 107). Treatment time was also too long. For satisfaction, both patients and their relatives were not satisfied with the services, from reception, issuing patient card, waiting, consultation, drug dispensing, appointment and high cost of treatment (Torugsa, S. 1996: 22) while personnel who perform treatment and their administrators were not satisfied with the services, under used of resources so the services had higher unit cost than it should be and the patients do not receive treatment that worth their money.

Regarding problems of the emergency services in Thailand, the treatment results of the emergency services in hospital particularly in rural provinces were not satisfy the expectation of the patients, hospital staffs and administrators (Torugsa, S. 1993: 3).

The mentioned problems caused several negative impacts, for instances, to patients and their families due to lost of life, illness, and disability can result in early death (Karnchanaburanout, K., 1994: 100).The impacts on service providers are for example hospital staff are not proud of the hospital so do not devote to the work (Sudsuk, U. and Pavabutr, P., 1994: 432). The impact on hospital is that patients are not confident in the quality of the service which can result in reduction in obtaining srevices fron public hospital but rather go to private hospitals which can provide srevices more rapidly with better care (The 8th National Health Development Plan Commettee, 1996: 141). Morever, there is impact on the country as the government

needs to allocate more health butget that cannot solve the problems or increase response to the need of patients (Torugsa, S. 2000: 68).

There are several causes of these problems. Firstly, the nature of work that services or task need to be performed rapidly so it is easily for any mistake to occur (Mimnistry of public Health, Nursing Devision, 1993: 6). Secondly, personnel at Emergency Department such as doctors, nurses and other medical personnel are not sufficient so they have over responsibility. Thirdly, equipment such as equipment are not sufficient, lack of mainttenance, or personnel are not trained to use the equipmemt correctly (Kaewkittichai, S. 2001: 17).Fourthly, the system, such as lack of planning, inappropriate organization, unclear assignment or non-written assignment, lack of technically correct or standard procedures (Holleran, 1994: 4), lack of effective coordination, lack of personnel responsible for incident informing collecting data on services, and reporting is incomplete (Chartbunchachai, W. 1991 cited in Pitimanaree, S. 1997: 4).

The most effective way to solve these problems is solving at their causes. However, since there are several causes, systemize the work can be an important basic of the work. All staff concerned should be encouraged to participate at all processes so that the working system is appropriate and resistance from staff can be reduced (Torugsa, S. 2000: 42-46). Other solution is using action research to solve prolems (Sirirasami, T. n.d.: 10) and several researches have been used to develop working systems successfully. For instances, developing working system of the central supply of Makarak Hospital in 1993 by Songsri Kitiraktrakool, prevention and control of Children Hospital in 1996 by Somporn Loykhamsook, public relations at Children Hospital in 1996 by Yaovanit Khomkham, developing the administrative work using computer in the work at Amphawa Hospital in 1997 by Nikhom Charoendee, and development of the nursing recording form to be used in patient wards in Phayathai one hospitals in 1999 by Sisanga Khumpitak.

This research was conducted at Emergency Department of Bangkok Christian Hoapital which was about 300-bed hospital under The Chruch of Christ in

Thailand. According to the record of service recipients, incident report, and client satisfaction survey during the last year, problems of this unit in terms of number of service recipients, quality of service, time of service, and satisfaction of all stakeholders were not different from emergency unit in other hospital though these problems had been continually solved. Besides, the 9th National Health Development Plan (2002-2006) provides the standards of health services facilities in each level focusing on the quality system developed in Thailand which was upgraded to the international standard. Moreover, increasing standard was in order to response to the policy of the hospital and to be the model for other hospitals. Furthermore, the researcher had been working at this hospital for 9 years and had realized the problems and their significance, therefore was determined to carry out the research to improve Emergency Department at Bangkok Christian Hospital.

Objectives of the Research

General Objectives

To develop Emergency nursing service at Bangkok Christian Hospital.

Specific Objectives

1. To develop the new working model for Emergency nursing service at Bangkok Christian Hospital.
2. To compare the result of performance between the newly developed and existing working model.

Hypothesis of the Research

The newly developed emergency response services is more effective than existing system, considered from:

1. Rate of emergency patients per 1 service provider is increased.

2. Correctness rate of preparation before working in the each shift is increased.

3. Correctness rate of service before patients leaving from Emergency Department is increased.

4. Service time from coming to Emergency Department until seeing a doctor is decreased.

5. Level of administrator s' satisfaction is increased.

6. Level of Provider s' satisfaction is increased.

7. Level of Customer s' satisfaction is increased.

8. Benefit from emergency service is decreased.

Variables of the Research

Independent variables

It was the working model implementation of emergency service,it composed of internal variables as follow:

1. Characteristics of working model:
   - 1.1 Principle of model
   - 1.2 Structure of model
   - 1.3 Implementation of model
2. Structure work system and actual work implementation
3. Resource using:
   - 3.1 Man
   - 3.2 Money
   - 3.3 Material
4. Environment while the actual implementation:
   - 4.1 Physical
   - 4.2 Biological
   - 4.3 Social
   - 4.4 Chemical
5. Problems and constrains during performance, solution and results

6. Enabling factors during performance
7. Obstructing factor

Dependent variable

Output of working model implementation. It can be divided into sub-type variable as follow:

Result of task performing can be considered from:

1. Quantity of work
2. Quality of work
3. Time of emergency services
4. Aministrator s' satisfaction
5. Provider s' satisfaction
6. Recipient s' satisfaction
7. Benefit from emergency services

Definition of Terms

1. Development is doing it for better and continuos processes

2. Emergency Department is a unit responsible for providing first services to patients when they arrive at a hospital. The services include assessing urgent illness from accidents, first aid, symptom observation, and curative treatment to reduce suffering and complications such as infection or disability. This is done for further treatment steps.

3. Emergency patient is a patient ill from the following causes:

3.1 all accidents from road traffics, working, suicide, being harmed or hurt, poisoning, or unknown causes.

3.2 Non-accidental emergency such as emergent physical and mental sickness, for examples sickness

4. Emergency service is composition and procedures of services provided to emergency patients, covering 6 activities as follows:

4.1 Preparedness before providing services:

4.1.1 service providers.

4.1.2 materials and supplies needed for providing service.

4.1.3 money needed for administration.

4.1.4 procedures for some specific cases such as emergent, patient specific or disease specific.

4.2 impressive welcome extended to service recipients

4.2.1 place

4.2.2 behavior of service providers

4.2.3 service supports such as materials and supplies, information leaflet, communication media, etc.

4.3 preliminary service provided to service recipients, such as:

4.3.1 emergency service, e.g. life rescue, pain relieving

4.3.2 emotional relieving

4.3.3 personal specific service, e.g. for monk

4.4 providing service completely based on condition and needs of service recipients with appropriateness and rapidity, while may be complication occurred as resulted of emergency service or treatment.

4.5 providing following final service before patients leaving the unit:

4.5.1 knowledge, understanding, e.g. suggestion, instruction

4.5.2 feeling, e.g. releasing of emotional depression, expression of care

4.5.3 traveling home from hospital

4.6 providing following service after the service recipient has left:

4.6.1 follow up,e.g. referral, follow up by phone, mail etc.

4.6.2 data recording both in the report and entering data into computer following the information system of the emergency services

4.6.3 maintenance of place and materials

5. Hospital administrator is a person holding the position of hospital director, deputy hospital director, head of nurses, health of section, and head of patient ward responsible for emergency service.

6. Service providers are personnel working at the emergency service unit.

7. Service recipients are patients receiving medical services at emergency service department and their relatives.

Definition of Variables

1. Performing patterns mean characters of factors including method of task performing in order to attain the goal of that organization which having important factors: principle of pattern, structure of the pattern and method of taking pattern into word starting from the beginning until the end including continual improvement. This can be measured in terms of Nominal Scale as in pattern 1,2,3 until the last type.

1.1 Principle of the pattern mean the guideline and trend for performing task that relates to patterns. They are principle of administration direct principle of patterns, rules and regulations of organizations / related sectors, related cultures and persons as well as laws involving in task performing accoring to the pattern

1.2 Pattern structure mean resources that are taken into use in the pattern as well as connection of every resource to be integrated smoothly in order to be most efficient and sustainable accomplishment.

2. Resources mean person, money, tools, technology, time that are actually used in practicing serving services at emergency nursing care. It is measured in ratio scale of one month using personal recording sheet for research.

3. Type of Practice means method of actual practice during the period of task performing. It is measured in name value and differentiating into former type and current type of practice in new pattern.

4. Method of taking pattern into practice means the process of taking developed pattern to be accomplished to have the most efficiency. It is measured in name value by using personal recording sheet for research.

5. Surrounding during task performing means an environment that effects to the result of practice. It may be things to support or object to the task performing. It is measured in name value by using personal recording sheet for research and recording data of experimental area sheet with comparing area sheet. It differentiated in 3 aspects:

5.1 External surrounding which are physical surrounding such as area condition, climate and transportation condition etc.

5.2 Internal surrounding means of a hospital, location, manpower, medical and health personnels, budget, rules regulation, policy and practices according to the Prime Minister's Office' rules, Civil Service Rule etc.

5.3 Special events such as changing position of the Director, disaster etc.

6. Result of work of Emergency nursing service. It is measured as rate, using the emergency service recording from.

6.1 Workload is number of patients receiving emergency service. It is measured as rate, using the emergency service recording from.

6.1.1 Rate of emergency patients per 1 service provider:

$$A = \frac{\Sigma B}{\Sigma C}$$

When A = Rate of emergency patients, measured as patients / 1 service provider

B = Number of emergency patients receiving services in 1 week

C = Number of service provice providers in the same duration

6.1.2 Rate of emergency patients per labour of provider:

$$A = \frac{\Sigma B \times 1000}{\Sigma C}$$

When A = Rate of emergency patients, measured as man / 1000 man-minute

B = Number of emergency patients receiving services in 1 week

C = Number of labour service providers in the same duration

6.2 Quality of work is correctness of providing emergency service, measured by rate and the data is recorded in the emergency service recording form.

6.2.1 Correctness rate in preparing before working:

$$A = \frac{\Sigma B \times 100}{\Sigma C}$$

When A = Correctness rate in preparing before working, measured by %

B = Number of correctness of preparation before working within 1 week

C = Number of preparedness before working in the same duration

6.2.2 Correctness rate in providing emergency services before patient leaving from Emergency Department:

$$A = \frac{\Sigma B \times 100}{\Sigma C}$$

When A = Correctness rate in providing emergency services before patient leaving from Emergency Department, measured by %.

B = Number of correctness in providing emergency services before patient leaving from the emergency department within 1 week

C = Number of emergency services provided wthin the same duration

6.2.3 Complication rate occurred as resulted of emergency services or treatment:

$$A = \frac{\Sigma B \times 100}{\Sigma C}$$

When A = Complication rate occurred as resulted of emergency service or treatment, measured by %.

B = Number of complication occurred as resulted of emergency services or treatment within 1 week

C = Number of emergency services provided in the same duration

6.3 Service time is the rapidity providing emergency services from coming to Emergency Department until seeing a doctor. It is measured by rate, using the emergency service recording from.

The rapidity of service is calculated as:

$$A = \frac{\Sigma B}{\Sigma C}$$

When A = Rapidity of services, measured by minute per patient

B = Time from coming to Emergency Department until seeing a doctor within 1 week

C = Number of emergency patients in the same duration

6.4 Satisfaction of service recipients mean the level of positive opinions given by emergency service recipients on the emergency service performance. It is measured by rate, using the questionnaire on recipient satisfaction.

Level of service recipients satisfaction in emergency service performance is calculated as:

$$A = \frac{\Sigma B}{\Sigma C \times D} \times 100$$

When A = Average level of service recipients satisfaction in emergency service performance, measured by %

B = Satisfaction score given by service recipients

C = Number of questionnaire respondents

D = Full satisfaction scores

6.5 Satisfaction of service providers is the level of positive opinion of personnel working in Emergency Department on emergency service performance. It is measured by rate, using the questionnaire on provider satisfaction.

Level of service providers satisfaction in emergency service performance is calculated as:

$$A = \frac{\Sigma B}{\Sigma C \times D} \times 100$$

When A = Average level of service providers satisfaction in emergency service performance, measured by %

B = Satisfaction score given by service providers

C = Number of questionnaire respondents

D = Full satisfaction scores

6.6 Satisfaction of service administrators is the level of positive opinion of personnel working in Emergency Department on emergency service performance. It is measured by rate, using the questionnaire on administrators satisfaction.

Level of service administrators satisfaction in emergency service performance is calculated as:

$$A = \frac{\Sigma B}{\Sigma C \times D} \times 100$$

When A = Average level of service administrators satisfaction in emergency service performance, measured by %

B = Satisfaction score given by service administrators

C = Number of questionnaire respondents

D = Full satisfaction scores

Scope of the Research

This research is conducted to study emergency service at Bangkok Christian Hospital which is a non-profit private hospital with about 300 beds. Saint Louis Hospital is selected as the control hospital. The examination was conducted for 3 month from 1 May to 31 July 2004.

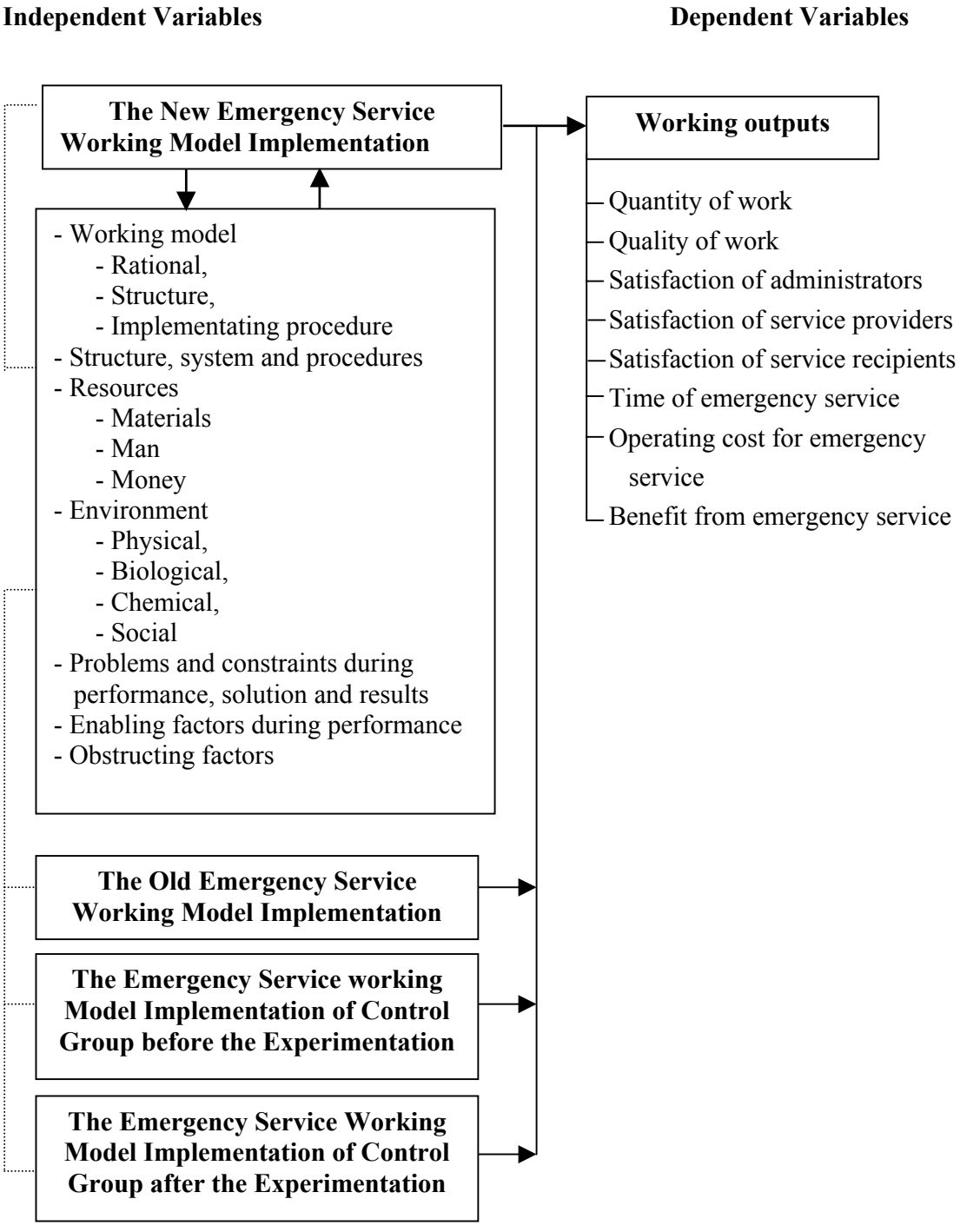


Figure 1. Conceptual Framework

CHAPTER 2
LITERATURE REVIEW

The researcher has reviewed related literatures and reseach on development of emergency service, which can be divided into 2 main parts, as follows:

Part 1 Literatures related to emergency services.

Part 2 Literatures related to variables.

Part 1 Literatures related to emergency services

Definition and Significance of Emergency service

Jenkin, A. L. (1978: 1) say that an Emergency Department is an important unit a hospital and it is the first point to provide medical treatment to patients injured from accidents or urgently ill with critical condition and need urgent attention. Emergency service needs to be provided 24 hour.

Kittiraktrakool, S. (1993: 6) says that the important characteristics of Emergency Department is providing rapid service because if patients do not get urgent attention, they will be in high risk of death or disability. However, this depends on how critical condition or symptom is.

Jamjudee, D (1999: 80) mentions about the level of sickness severity of patient in the Emergency Department, divided using criteria of the Nursing Devision on the standard of providding treatment to emergency patients, as follows.

1. Emergent patients are the patiens with the following conditions who need prompt treatment otherwise may die or permanently disable within a few minute

- Unconscious,disoriented, very confused or coma score < 7
- Airway problems of any types especially with cyanosis or stridor in a child
- Respiration rate < 10 or > 30 with or without cyanosis
- Weak irregular pulse < 50 / minutes, > 150 / minutes or pulseless
- Cardiac or respiratory arrest
- Systolic blood pressure < 90 mmHg or no palpable radial pulse in children
- Cervical spine injury
- Severe head injury or comalose state
- Open chest or abdominal wounds
- Burn partial or Full > 20 % in adult or > 10 % in children
- Severe uncontrolled bleeding
- Shock of any type
- Seizure
- Severe medical problem such poisoning, overdose, cardiac, or diabetic complication
- Emergency childbirth, complication of pregnancy, Hemorrhage or indication of eclampsia
- Patients with severe phychiatric condition such as suicidal attempt or injuring others

2. Urgent patients are patients who need less urgent treatment than the above patients but may die or disable if not being treated within 1-2 hours. Patients are conscious and is not shock but has the following conditions:

- Non- acute abdominal pain or back pain
- Continuous nausea, Vomiting or diarrhea
- Temperature > 39^{o} C
- Acute panic states or drug overdose, suspected poisoning
- Burn patients (diagnosis by poor vision), acute glaucoma or epitaxis

- Acute headache

3. Non-urgent patients are patients without emergency condition but need proper treatment. Normally, they have the following condition:

- Minor insury
- Non-acute abdominal pain or back pain
- Chronic conditions: headache or backache
- Mild anxiety
- Sore throat or cough
- Dead on arrival

Hawanout, S. (1993: 3-4) mentioned about the roles of personnel working at the Emergency Department as follows:

1. Emergency service personnel has a role to respond to the expectation of service recipients, i.e. safe from death or disability and can live normal life.

2. In an emergent situation, every second needs to be used worthily as it means life or death of patient.

3. Given the emergent condition, there is high need for rapid and accurate performance coupled with mindfulness, patience, and concertration. Personnel need to be able to console patients'relatives.

4. Teamwork, understranding and good coordinateion are required for success in performance.

5. Systematic performance following rules will avoid obstacles.

6. Emergency treatment is multidisciplinary involving other sectors such as diagnotic, treatment of several body functional systems, etc. So personnel need to be a coordinator to make all treatment proper and meet the needs.

7. Personnel need to understand and know well how to use and maintain all equipment.

Problems of Providing Emergency Service

Stravic (1976, cited in Wiwatvanich, S. 1991: 70) has compiled comments from patients which say that hospital is not an interesting place. The outpatient department has a lot of patients waiting for diagnosis for a long time particularly medical schools which have more patients. Patients with several health problems needs to come to a hospital several times to receive treatment from different section and need to wait for a long time. Some patients who cannot receive treatment within the service hours seek services from the Emergency Department which is open for 24 hours and expect to receive rapid and good services but also need to wait while emergent patients also need to take time to wait for the services. Moreover, nursing staff are supposed to pay attention or give an understanding to patients but do not do so. Consequently, patients do not understand and complain that they do not receive services as they expected.

Torugsa, S (2547: 58-59) say that the real problem of working is uncompleted work, i.e. there is a gap between the expectation and present performance. For example, performance of a hospital does not meet the expectation of patients administrator and staff, due to:

1. Outdate treatment method which consumes a lot of time and resources, procedures are complicated and create complications.
2. Service is slow, patients need to wait for a long time, reception is not good staff do not have friendly conversation or greeting.
3. Patients do not follow medical instructions correctly.
4. Irrational or under utilization of resources.
5. People do not have good image toward hospital.

Consequence of Problems in Emergency service

Wiwatvanich, S. (1991: 70) mentions about the Emergency Department that it is regarded as the most complicated and problematic section

because of several reasons, e.g. it has to open for 24 hours, misunderstanding between doctor, nurse and service recipients, the section always get complaints from patients.

Torugsa, S. (2547: 60) say that severity of a problem is considered from both term and long term effects of that problem on:

1. People such as service recipients, staff, and administrator
2. Organization
3. Community where the organization is located
4. The country as a whole

Boonkerd,S. and Chunhapran, P. (2000: 39) mention that consequence of the problem in emergency service that as the Emergency Department is open for 24 hours receiving accident, emergent and non- emergent patients with different level of problems. Patients with respiratory and blood circulation problems need to get urgent attention. In this case, staff are not careful enough, they may get infected or accident from working. For waiting patients or relatives, they may complain that staff do not pay attention them or express inappropriate behaviors to the staff. Drunk patients may be aggressive, not cooperate in treatment, or even injuring medical staff.

Causes of Problems in Emergency Service

Chunlakiat,B. (1992: 50) says that most emergency unit tends to receive more injured patients so there may be some error in service. This error is arisen from:

1. lack of details examination
2. lack of examining experience or injury estimation
3. lack of experience in analying the x-ray film
4. not following correct instruction or procedures

Torugsa, S. (2547: 60) says that problems at work are cauesd by 3 causes as follows:

1. Nature of work that is difficult, complicated, required special equipment and highly skilled and experienced staff.
2. Resources needed, e.g. staff, money,equipment and system, are not sufficient, and the remain resources are not fully utilized.
3. Insufficient factors supporting the work such as working condition, economy, society or culture.

Causes of working problems are multifactors but there are 2 main factors that working problems:

1. System not supporting the work:

Complicated system dose not assist working so the person who dose the work is discouraged.

The management system is the most important and can cause working problems. This system consists of 7 activities i.e. planning, organizing, staffing directing, coordinating and budgeting or "PORDCoRB". A responsible person is highest administrator of the organization.

2. Behaviors that are not conductive to working are:

2.1 Administrators'behaviors such as not making decision, uncertain, self-centred, discouraging, running away from a problem, etc.

2.2 Behaviors of people performing the work, e.g. irresponsible, avoidance, conflict, self-centred, look down other workers, etc.

2.3 Behaviors of service recipients, e.g. self-centred, using inappropriate right, not following rules, etc.

Out of these behaviors, the behaviors of administrators are the most important

Incontrast, service behavior though intangible but touching the heart of service recipients. Hence it has high sensitivity.

Guidelines for Solving Emergency Service Problems

Torugsa, S. (2547: 61) says that effective solution for working problems is difficult for executive, based on the following guidelines:

1. Looking at the problems creatively, under the following concepts:

1.1 All work has a problem.

1.2 All problems can be solved.

1.3 Problems can lead to development.

2. Set up working goals of working as “Service for All” such as providing best srevices which will give good image to the hospitals, leading to good health of people as a whole.

Setting up working goals will reduce interpersonal conflit as it helps answering that what we work for.

3. Problem should be solved at its cause particularly changing our behavior to assist working.

The aims of solving problems in the workplace is to make performance better while the problem itself is a good indicator for effectiveness of problem solving. If the problem is measured both before and after solving, we will know effectiveness of problem solving. Indicator can then be used to set up targets in the workplace, such as reducing complication from treatment by 10 percent, recording waitng time to not more than 30 minute, and not less than 75 percent follw the instruction correctly, etc.

The follwing should be done to solve the problems:

3.1 Set up target focusing on better performance.

3.2 Improve the system to assist working, particularly administration, while the service and service support systems should be improved in term of working procedure. It will be most helpful it a working manual can be developed.

3.3 Changing inappropriate behaviors, if possible, starting from administrators. This can be done in several methods such training, teaching, seminar, site visit, etc. Besides, management by participation should be applied targeting at better perfomance. However, it should be cautioned that the target should not specifify that it is to improve anyone’s behavior in particular as this may bring more conflict and uncooperation.

3.4 The starting point of problem solving is the administrator themselves. The administrators should use the principle of administration should be followed to make themselves become good administrators.

The Principle of Administration can be applied in all works. For instances, to become good administrators, it should start from situation analysis to identify the current status as an administrator, what to be improved and why. Then, regular evaluation should be carried out and the results can be used. The principle of administration can later be started over again to improve their administrative role continously.

All of these activities will be successful and sustained depend on monitor, control and coordination.

The most important person in a hospital is normally caused by behavior of the director not conductive to the work. To solve the problem effectively depends on how much the director accept the truth about his/her behavior.

Part 2 Literatures Related to Variables

1. Literatures related to independent variables

1.1 Working model

Definitions of model

Kasemsin, S. (cited in Nioj, A. 1993: 29) says that model is the illustration of the relationship between all compositions of what is interesting for study and what need to be studied. The model is developed to study the compositions of the model. Only compositions important for the particular study are selected. Therefore, model can be changed though time and situation.

Torugsa, S. (2004: 5) says that hospital administration principle is the scientific principle that can enable the implementation of hospital work to attain the goals and duties effectively and efficiently.

Torugsa, S. (2004: 1) said that administration is the action to make success of work to be the highest effiiency and up higher. There are 8 main activities of administrative principle, which correct and join continually to be a cycle for each work namely:

Composition of model

1. Principles of the Model: mean principles that are uaed to be the principle and the guideline to perform tasks that are related to that model which are technology direct principle in other academic purposes, rules and regulations of organization, as well as related sectors, laws, traditions, customs, believes, share value, local culture organization etc. of corresponding people.

1.1 Technical Principle:

1.1.1 administrative principle

1.1.2 technical principle directly related to the work

1.1.3 other related technical principle

1.2 Rule, instruction and regulations

1.3 Legislation

1.4 Norm, tradition, belief, and value and culture of related organization and society

2. Structure of model is the resource used and connection of the resources for the effective operation. Resources can be divided into 3 categories, as follows:

2.1 Human resource structure, e.g. personnel working under the model.

2.2 Commodity resource structure, e.g. land, building, materials, equipment.

2.3 Financial resource structure, e.g.money, expense.

2.4 Work system structure is the system used under the selected model.

3. Implementation of model is the process where the model is applied and implemented, through the following processes:

3.1 Model setting&improving based on the action resesearch for development concept.

3.2 Model implementation, divided into:

3.2.1 pre-implementation preparation, such as administrator and organization preparation, responsible team preparation, drafting the action plan, presenting the plan, and distributing it to peopleconcerned

3.2.2 implementation of the action plan

3.2.3 formative and summative evaluation

3.2.4 summarizing the implementation and preparing the final report

3.2.5 present the result to the administrators

3.3 Model development: applying what is gained from the implementation to improve the working model to be more updated and effective.

Principle of format

1. Administrative theory

1.1 Administrative theory under Gulick & Urwick's POSDCoRB Model

Professor Gulick and Prof. Urwick, (cited by Bhustha Intaraprasong, 2539 b: 5) have concluded on the process i.e. 7 administrative principles comprising planning, organizing, staff, directing, coordinating, reporting and budgeting.

Torugsa, S. (2000: 55-57) mentions about the 7 administrative principles under POSDCoRB Model as follows:

1. Planning: Unique implementation of activities without duplication so that resources are used with optimum result. Time is used as the focal point for relating all activities. Planning can be divided into:

1.1 Annual action plan

1.2 Monthly action plan

1.3 Weekly action plan

1.4 Daily action plan

2. Organization: Appropriate organizing are:

2.1 Dividing and setting up departmental tasks.

2.2 Recruiting positions in the organization and preparing written job description and job specification.

3. Staffing: Appointing appropriate staff to each position for the optimun reproductive, which covers the process of:

3.1 Selection of staff

3.2 Orientation before working in the assign position

3.3 Coaching

3.4 Improving

3.5 Keeping staff to work effectively by providing encouragement and appropriate penalty

3.6 Appropriate discharging without causing effect or with least effect to the organization

4. Directing: the important directing processes for most effective working are:

4.1 Commanding

4.2 Delegation of authority

4.3 Follow up

4.4 Control

4.5 Motivation

4.6 Problem solving

4.7 Penalty

4.8 Evaluation

5. Coordinating: It is important for smooth implementation. It includes internal and external coordination, formally and informally, both on a usual basis or emergency.

6. Reporting: Reporting is to inform people concerned on the implementation, it can be:

6.1 Usual reporting

6.2 Emergency reporting

6.3 Specific reporting

7. Budgeting needds to be appropriate, sufficient, in time and worth. It includes:

7.1 Mobilisation

7.2 Receiving the money

7.3 Keeping the money

7.4 Spending

7.5 Follow up and control the use of money

7.6 Auditing t use of money

7.7 analyzing the use of money

1.2 Peter F. Drucker's Management by Objective Theory

Dejthai, T. (1999: 246-247) says that management by objectives needs structure but flexible targets. Characteristics of management by objectives are:

1. Both administrators and staff have an understanding and agreement in their duty and responsibility.

2. Staff set up both short and long term working objectives under approval of the administrator and the objectives need to be relate to the organizational objectives.

3. Both administrators and staff should have a agreement on criteria for evaluation of working and achievement of the targets.

4. Both administrators and staff should regularly evaluate the progress and the target should be modified though procedures and consultation when needed.

5. Administrators need to give support, coordinate and allocate if the objectives are achieved.

Peter F. Drucker (cited by Khanthahat, S. 1998: 91-93) that it is one kind of administration which is located on the basis of self control working and open a chance for every level of personnel to participate actually in the

process according to the target of the organization. It is performed by identifying cooperated objectives and planning, delegation of power and duties as well as responsibilities, checking and improving systematically, measuring and evaluating by emphasizing on objectives and target.

1.3 Participate Management Theory

Hapgood (cited in Nakwannakit, 1997: 19) proposed a concept of participation in working and administration as following:

1. It is participation in objective development or decision making.
2. It is the participation in implementation.
3. It is the participation in benefits of growth, after evaluation is result is good, all personnel in the organization will be rewarded equally.

Rensis Likert (cited by Tridech, P. 1997: 93) that the success of work result from contribution of colleagues as well as communication within the organization to induce group work. Every member of the group even leader or practitioners should help each other. This will enable everyone fell contributed in every activity i.e. needs beliefs, initiative, target, and expectation, these are all affected to motivation.

1.4 Heinz Weihrich & Horold Koontz's Contigency Management Theory

Santiwong, T. (1996: 34-35) says that the strength of contigency management is that the guideline or technique used for the mangement need to be suitable and related to the situation.

Fred Fiedler (cited by Boonthan Dokthaisong, 1998: 156) that administration that focused on an interaction process between variables in basic organization has an attitude that organization and administration is the system consisting of various subsystems which have limitations, The accectation to the importance of environment as well as internal subsystem of each component as unity

is taken. It is well accepted that there is no universal administrative principle and each organization has its unity in each condition. The decision to have or not to have is depened on adaption of the administrator himself who know well about the balance of organization condition and environment.

1.5 Management by committee

Santiwong, T. (1992: 331-338) says that committee are a group of people working on problems in an organization. These groups of people can be formed informally. However, in practical terms, the committee are formed formally.

Cited in Siriorn Khanthahat (1998: 89) means management in the form of a committee appointing directors, which consists of individuals from various department. This will help everyone to understand and accept other departments they have to deal with, hence work coordination can be easier.

1.6 Somchat torugsa's Principle of Management

Torugsa, S. (2004: 1) said that administration is the action to make success of work to be the highest effiency and up higher. There are 8 main activities of administrative principle, which correlate and join continually to be a cycle for each work namely:

6.1 Situation analysis: analy of part activities, analysis of available resuorces, organization analysis, surrounding community and social analysis of impacts from past activities, as well as future trends, conclusions of present situations, i.e. what we have to do and how we have to do.

6.2 planning: It is to identify guideline, methods and resources to be used for working in the future as how, where, with whom, why we have to do. The summary of planning is to obtian clear and definite plan.

6.3 Implementing: It is to take the specified plan to implement effectively. It is composed of preparration before activation, starting work, follow-up work and problem solving in working.

6.4 Evaluating: It is an analysis and summarizing of action for all Inputs, process and output, as how much we get, what we get and why. It is an evaluation both directly and indirectly.

6.5 Utilizing: taking outcome from implementation to e used at highest beneficial in terms of human resource development, working development, other work development, organization development, dissemination of result of work, exchanging of results, experiences with other organization.

6.6 Monitoring, Controlling, Coordinating: Follow-up for collaborating and controlling are the ones that make all activities to be accurate and to yield the most effective results. It is composed of communication system arrangment, follow-up of management, collaboration, controlling, solving the occurring problem.

6.7 Information is generate all the time both internally and externally. Hence it is necessary that a process must be established to make Information connected together thoroughly, conveniently and speedily. Information may be classified into 2 groups as information related to resources and information related to work operation.

6.8 Continuous work operation is a process of consideration after work operation is completed, whether or not to continue the work operation. If not, end of project activities must be initiated

1.7 Organization Development

Navikarn, S. (2000: 974) mentions that organization development emphasizes on changing of attitude, perception, behavior and expectation. Organization development is an attempt to change 1) pan, 2) organzation as a whole, 3) from high level executive, 4) increase eficiency, and 5) that is based on integrating a plan developed by organizer.

Muangman, T. and Suwan, S. (1997: 269-270) mention about characteristics of organizational development as follows:

1. Planned change: Bennis is the first person to emphasize on the important of systematic planning which also focus on making organization development separated from unsystematic changes.

2. Comprehensive change: focus on developing an organization rather than attempt to develop the whole system. The whole organization or all units will be used for analysis.

3. Emphasis on Work group: though some development focus on individual and organization, but most of focus on a group.

4. Long- range change: organization development experts mention that the process of organization development take months or even years though there may be some pressure to make accomplished in a short time. However, the organization development process is not developed to fill this gap.

5. Participation of change agent: organization development experts emphasize on the need for leader of a change from some other outside.

6. Emphasis upon intervention and action research: Research will help solvong problems as there will be researcher participating in this. Result of organization development will include efficiency of the organization, solving organization problem, and ability to adjust. In term of human resource development, organization development is an attempt to give opportunity to individual in participation. The final purpose is cooperating targets and objective of individuals together with target of organization.

Cited in Sulak Meechusap (1991: 26) means organizing management structure such that power and duties of each sub work units or working position in the work unit is specified clearly, including identifying characteristics and methods of work coordination. Power and duties should be related according to hierarchy, in order that implementation may be orderly, including consideration to check and improve project termination in time, and to correspond with the environment and objectives of the work unit.

Delegaton

Cited in Aegachai Keesukpun (1987: 45) means distributing work under responsibility and decision making power, within specified limit, to colleagues or subordinate.

Technical principles for emergency service

1. Standard for emergency service under the hospital standard, patient-centred quality development guidelines: the golden judilee version.

1.1 Mission, goal and objectives

Mission, philosophy, scope, goal and objective of the emergency service are clearly up.

1.1.1 Mission, philosophy, and scope, of the emergency service are in corresponding to mission of a hospital.

1.1.2 Having feasible goals and objectives.

1.1.3 Communicating mission, philosophy, goals and objectives of emergency service to involved staff and departments.

1.1.4 Staff are knowledgeable and understanding in emergency service goals and aware of their roles.

2. Organizing and administration

Organizing and administration are effectively supportive for emergency service:

2.1 Structure of the emergency service are proper and clear.

2.2 Head of the department has proper qualification, is being assigned with appropriate duties and is competent in administration to bring the department to achieve the mission.

2.3 Qualification for each position is clearly set up in writing.

2.4 Having an effective mechanism for working guidelines, communication and problem solving.

2.5 Having a mechanism for participation in planning, decision making, and policy set up in a hospital.

3. Human resource management

Having effective human resource management in order to achieve the mission of the emergency service with good quality and efficiency:

3.1 Manpower management

3.1.1 Having sufficient staff both in term of quantity and quality:

3.1.2 Having a mechanism to systematically monitor and evaluate staff sufficiency in comparison to the workload.

3.1.3 Performance is regularly evaluated focusing on positive performance in order to create pride and encourage continual improvement.

3.1.4 Unqualified staff or students traines need to work under supervision.

4. Human resource development

Having preparedness, knowledge and skill strengthening so that staff can work effiently:

4.1 Evaluation of need and set up the content of human resource development.

4.2 Developing human resource development plan.

4.3 All new staff are being prepared before starting shift work so that they are informed about their duties, responsibilities and working environment.

4.4 Having regular knowledge and skill strengthening activites for on-duty staff.

4.5 Evaluation of the human resource development plan in the form of behavioral change and effect on patient care.

5. Policy and code of practice

Having written policy and code of practice, which reflect the knowledge and principle of the modern profession in response to the emergency service/ relevant rule and regulation and staff practicing the policy:

5.1 Having good policy/ code of pratice formulating processes.

5.2 Policy/ code of practice of a department are related to hospital policy, as providing the following guidelines to staff, patients and relatives:

- Administration
- Clinical clinic and management
- Moral, social and legal issues
- Document record and preparation
- Safety
- Human resource development

5.3 Staff are informed about, understand and practice for its comprehensive and relevance to the work.

5.4 Regularly evaluate policy and code of practice for its comprehensive and relevance to the work.

6. Environment and infrastructure

Environment and infrastructure are supportive to the emergency service in terms of convenience, safety, quality and effectiveness:

6.1 location of the emergency service department is appropriate, easy for access and referral.

6.2 Having enough space and the internal structure is properly divided for service and supply storage.

6.3 General condition of the department is safe with good ventilation, proper temerature and clean.

6.4 Diagnosis/ treatment/ consultation areas are divided and enclosed to prevent from being seen or heard.

6.5 Place for staff is provided.

7. Equipment, supplies and facilities

Having standard material, supplies and facilities that enable safe, quality and efficient emergency service:

7.1 Having criteria and mechanim for selecting/ evaluating equipment and supplis needed for the service.

7.2 Having sufficient equipment and supplies.

7.3 Those who need to use special equipment are properly trained and know how to use it well.

7.4 Having spare equipment and medical supplies ready for disbursement.

7.5 Having a good maintenance system.

7.6 Having a system to check readiness of the equipment.

8. Working system, service process

Having a working system/ Process that enables effective the emergency service in accordance with professional standard and meet needs of each patient:

8.1 Having teamwork among each profession.

8.2 Patients and families are prepared before get treatment.

8.3 Exchanging essential information between patients, families and service providers.

8.4 Each patient is evaluated and planned on treatment in order to meet their health needs.

8.5 The emergency service is in accordance with the professional standards.

8.6 Recording patient information, problems, treatment plan, and result to create good communication between the service providers and continouity of the treatment.

8.7 Having a process to ensure treatment continuity.

9. Quality development activity

Having evaluation and improvement of the emergency srevice quality by working in a team with continuous improvement:

9.1 Having quality development activity involving cooperation of staff at all levels/ professions within and between departments.

9.2 Quality development activity consists.

9.3 Using professional standard and evidence-based knowledge in quality activity.

2. Standard of emergemcy service nursing, Division of Nursing, Office of the Permanent Secretary, Ministry of Public Health

Standard 1 Nursing direction

Content: Setting up a clear direction of nursing service within a department with acceptance from all staff and use it as a working principle.

Criteria:

1. Having written philosophy of nursing service which is relevant to the philosophy of the nursing Unit which reflects on the principle of and confidence in:

1.1 Individualism and right of a patients/ service recipient.

1.2 Binding to professional morality.

1.3 Integrated nursing service under a patient-centred principle.

1.4 Following the nursing procedure.

1.5 Providing intergrated service covering disease prevention, health promotion, treatment and rehabilitation.

1.6 Continuos quality improvement.

1.7 Nursing goal to protect life, function of body organs, suffer relieving,

2. Mission of the organization is relevant to the philosophy, and reponse to vision and mission of the nursing department with participation from all staff.

3. Identifying scope of responsibility in writing with following detail:

4. Commmunication mechanism can inform all staff to be aware and understand mission of the organization.

5. Mechanisms for support and evaluation can enable staff to complete their mission and roles in their full capacity.

Stanard 2 Organizing and administration

Standard: Organizing and administration comducive to quality service.

Criteria:

1. An administrative diagram describing responsibility line, authority and clear coordination.

2. Updated written job description, covering:

2.1 Scope of responsibility of staff in each level at the normal and emergent situation.

2.2 Authority in working on their responsibility.

2.3 Position-specific qualification.

3. Administration is supporting for participation of staff at all levels in the administrative process.

4. Evaluation mechanism can follow up progress of administrative, service and techical development and inform it to staff and administrator of the nursing department.

5. Nursing administration consists of:

5.1 Supervision and evluation of staff performance are correct as described in standard.

5.2 Rapid coordination with clear procedures developed by relevant organization.

5.3 Problem solving process.

6. Administration of the emergency service system:

6.1 Communication system is effective and can be informed of emergency or accident directly at the emergency room.

6.2 Emergency ambulance is ready for the work.

7. Administrstion for mass emergency:

7.1 Having an action plan for emergency response.

7.2 Written job assignment for each level of nursing staff in each shift there is mass emergency.

8. Performance evaluation:

8.1 Performance evaluation systematic and encourages staff participation in the evaluation.

8.2 Process of promotion consideration is based on performance evaluation.

9. Communication mechanism is able to inform all nursing staff on organizing and administrative system.

Standard 3 Nursing team

Standard context: The nursing team is ready to provide nursing service with good quality.

Criteria:

1. Manpower allocation by having a nursing team looking after patients for 24 hours:

1.1 A professional nurse is head of each shift.

1.2 Manpower allocation is baesd on burden and manpower standard for nursing.

1.3 Having reserve manpower for a case of emergency or having a practice to increase manpower in a case of emergency which every staff is well informed about and practicing.

1.4 Delegating nursing staff who have been trained for caring if emergency patients to station at emergency ambulance for referral case for 24 hours.

2. Head of the organization is qualified and competent in administration, nursing practice and technical knowledge.

3. All professional nurses are qualified and competent based on the qualification set up by the nursing department on knowledge and skill for nursing service for emergent patients.

Standard 4: Development of nursing staff

Context of the standard: Supporting development of knowledge and skill needed for the work of nursing staff, for continuous learning and self improvement.

Criteria:

1. New staff attend the orientation on the following issues before working:

1.1 Policy, philosophy/mission, scope of responsibility, and practicing guidelines.

1.2 Responsibility both in emergency and normal situations.

1.3 Report of incidence.

1.4 Intra and inter organizational coordination.

1.5 Consulting superior in each level.

1.6 Nursing standard.

1.7 Guideline for performance evaluation.

2. Conducting need assessment systematically and use the study results for capacity building amoung staff.

3. Providing the following skill training for staff regularly:

3.1 Life rescuing.

3.2 Specialized nursing/nursing techniques for most common diseases.

3.3 Practical technique for the use and maintenance of new equipment.

3.4 Rehearsal for a case of emergency or disater

3.5 Other technical training in response to needs.

4. Providing activities that create learning atmosphere for staff:

4.1 Promoting technical activities within the professional area and with other professions, such as a meeting on analysis of service problem, visiting patients together, self-learning, case conference, or journal club.

4.2 Encouraging nursing staff to participate in technical meeting and related training held both in and outside the hospital.

4.3 Encouraging nursing staff to participate in presentation of the department or hospital's work / research.

5. Organizing activities to improve value and attitude toward working and self improvement continuously, and improving nursing staff development, as well as systematic and continued impact assessment on the service.

Standard 5: Standard of practice

Context of the standard: standard of practice for emergency nursing service reflects up-to-dated knowledge and technical related job description and legislation.

Criteria:

1. Having standard of practice on service, staff concerned should participate in the following service:

1.1 Triage, treament record and treatment evaluation

1.2 Life rescue

1.3 Management of unknown patients or unconscious patients without relatives

1.4 Keeping of patients' belonging

1.5 Management of death patients

1.6 Disclose of information to police or the press

1.7 Admission for symptom observation

1.8 Intra and inter organizational ordination and communication

1.9 Patient referral both within the hospital and to other hospitals

1.10 Providing dangerous drug, addictive drug, xygen and blood transfusion

1.11 Prevention and control of nosocomial infection

1.12 Management in response to mass disaster

1.13 Recording of wound appearance and collecting of specimen for the police

1.14 Treatment of patient in the Emergency Department who have specific diseases or symptoms

1.15 Security of the4 department

2. Communication mechanism to inform all staff and follw the stand of practice.

3. Evaluation of implementation of the standard of practice and improve it to be up-to-date in order to increase working efficiency.

Standard 6 Environment, infrastructure and facilities

Cotext of the standard: Environment, infrastructure and facilities are properly organized to be appropriate for patient care and impressive for service recipients.

Criteria:

1. Location of the service station facilitates the reception and referral of emergent patients:

1.1 Having clear signs inside and outside the hospital.

1.2 Having a good and convenient entrance

1.3 Location of beds and wheelchairs is close to the patient receiving and referral points.

1.4 The patient receiving and referral point is close to the emergency room and easily accessed.

1.5 Nursing staff can see patients easily and have communication equipment to communicate with security guard or bed staff about incoming patients.

1.6 Entrance and exit have wide gates.

2. Space is proportionally arranged and appropriate for providing service, the space should have:

2.1 Triage

2.2 Diagnosis and first aid

2.3 Emergent life rescue

2.4 Cast

2.5 Poison diluting

2.6 Symptom observation

2.7 Preparation of space for mass disaster following the space plan with the emergency room as the centre

3. The transporting system is convenient for moving or helping partients.

4. Facilities for service recipients:

4.1 Reception counter and patient card office are located in the front of the department.

4.2 Number of benches are enough for patients and relatives.

4.3 Signs or direction symbols to important places such as dug dispensing room, x-ray, are clear.

4.4 Having enough toilettes for service recipients (ratio 12-15 people: 1 toilette, separate male/female).

5. Having facilities for staff such as meeting room, changing room, toilet.

6. Environmental condition and work place environment:

6.1 Clean, not stuffy or stink.

6.2 Proper lighting, temperature and good ventilation to prevent emission of disease.

6.3 Materials and equipment are nicely organized without obstructing walkway.

7. Having space for used equipment such as for aprons, waste, and for cleaning used equipment, which is separated from treatment area

8. Effective security

8.1 Having security guard who can be easily contacted.

8.2 Having communication equipment that can communicate with the police.

8.3 Providing rehearsal for all staff to practice when there is a case of emergency or disaster.

Standard 7 Equipment and medical supplies for providing services

Context of the standard: Equipment and medical supplies are sufficient and ready for providing service to patients.

Criteria:

1. Head of the department participates in mobilizing and identifying needs for equipment and medical supplies.

2. Emergency cart has good moving ablility and it is placed in position convenient for accessing to the patient rapidly and should at least have the following equipment and supplies:

2.1 Airway maintenace equipment

2.2 Breathing equipment

2.3 Circulatory support equipment

2.4 Important medicine for life rescue such as drug for cardiac contraction or controlling heart beat

2.5 Cardiac monitoring: EKG

2.6 Cardiac defibrillator

2.7 CPR board

3. Keeping sterilized equipment and equipment with expire date based on standard operating procedure for prevention and control of nosocomial infection.

4. Checking number and sterilizing of equipment and medical supplies under the standard operating procedure for prevention and control of nosocomial infection.

5. Ensuring the readiness of equipment:

5.1 Checking equipment and medical supplies following timetable under the standard operating procedure.

5.2 Checking equipment and medical supplies in emergency cart at every shift.

6. Having a system to ask for essential equipment and medical supplies in case of emergency.

7. Maintenance system for equipment and medical supplies is effective:

7.1 Having a history record of use and problems from using equipment such the change of expense for repairing and repairing time.

7.2 Setting up standard operating procedure for maintenance.

8. Having a standard ffor preventing loss and reducing equipment and materal cost.

Standard 8 Development of nursing quality

Context of the standard: Development of nursing quality is done continuosly with participation from staff.

Criteria:

1. Head of the supporting unit allows staff to participate in evaluation and improvement of the nursing service quility continuosly.

2. Having activities on nursing quality development and performance follow up carried by staff involved in:

2.1 Analyzing of nursing service system.

2.2 Analyzing needs based on expectation of patients and internal and external service recipients.

2.3 Analyzing weakness of procedures for patient service/ care.

3. Setting up activities or project to improve quality of service based on the results of surveillance and data analysis on quality development activities.

4. Evaluation of success of the activities or project to improve quality of service.

5. Setting up standard or standard operating procedure based on the evaluation of activities to improve quality of service, and continously surveillance the performance under the standard operating procedure.

Standard 9: Nursing information

Context of the standard: The nursing information in the department has good quality.

Criteria:

1. Data collection in the department is complete, not duplicated and easy.

2. The department at least collects the following data:

2.1 Administration data on personnel administration, material and equipment record, personnel development.

2.2 Service data such as triage level, type of patients, top 5 diseases receiving service, problem/ needs, treatment and result of the treatment, as well as monthly supporting activities from other organizations within and outside the hospital.

2.3 Data on nursing quality index.

3. Communication mechanism to make staff informed and understand data collection and reporting.

4. Having a comprehensive data reporting system with data synthesis for the use of administration, patient services, quality development and reporting to concerned people.

Related techniqcal principles

1. Communication principles

Prabnasak, B. and Jirawatkul, S. (1995: 15-51) mentions about communication that is a process of exchanging and receiving knowledge with common understanding on signs of that information. Communication is regarded as a basic need for human life which can affect the society, daily life, industry, business, and international politics. For public health front, communication is important for

quality of life and nursing profession. The composition of communication are communicator, issues, and result of communication.

Tochinda, B (1999: 186) mentions about effective communication system in the organization, which should involve:

1. For job assignment should include asking not only downward communication but rather allow upward communication, i.e. asking to gain understanding. This is called two-way communication.
2. If implementation personnel my not understand, other communication system such as meeting, preparing a manual or instruction can be done.
3. Both one-way and two-way communication should be rapid, convenient and thorough.
4. Good relationship between administrator and staff and amoung staff themselves.
5. All staff understand policy of the organization correctly.
6. Systematic and continuos.

Navikarn, S. (2000: 447-448) says that effective communication will occur when both sender and recipient have the same understanding of the information.

Effective communication will occur at the lowest cost in term of resource use. For communication, time is one of the resuorces. Communication be sending written message or group meeting will be more effective than face to face communication.

2. Coordination principle

Kaesemsin, S. (1974: 147) mentioned about target of coordination that should cover 3 targets as follows:

1. Enables result and quality of work to meet objectives of the organization, but if coodination is not good. Result of work would not also good.

2. Good coordination needs planning in advance and prediction which will help saving resource and duplication of work as well as unreasonable use of resource.

3. Reducing conflict amoung staff. As working together can cause conflict so good coordination can enable all staff to understand about duty of each section and not to overrule each other.

Tochinda, B. (1999: 187) mentions about coordination of work as follows:

1. Participatory planning by setting up activities, who and when to carry out.

2. Coordinating the performance report.

3. Meeting can enable coordination, so those who need to coordinate amoung each other should meet both before and after working.

4. Forming committee to work together from the beginning since planning, appointment for work, follow up and modifying the work.

Related rules and regulations

Navikarn, S. (1991: 80-81) mentioned about procedure that it is one kind of a plan different from policy as it identifies what needs to do by reducing consideration of any one person in solving a problem. Rule is suggestion which is similar to procedure with penalty for those who violates the rule. Rule is different is used. However, rule is related to procedure in a way that they are both guideline of action. Rule is telling what to and not to do but procedure dose not have order of action.

Santiwong, T. (1992: 53) says that policy is the general statement used as guidelines for administration. In other word, policy is the statement

of general guideline providing concept and principle for decision making among subordinates.

Kongja, D. (1998: 28-59) mentions about the law on rights of patients under the Constitution of the Kingdom of Thailand B.E.2540 (1997) that health professional organization has issued an order on the rights of patients in order to create clarity in the procedures, reduce conflict and eventually create good treatment.

Conclusion of the Model

Implementation model consists of principle, structure and procedure. Principles of implementation model are administrative principle, job-specific technical principle. And other related technical principle. These principles should be applied appropriately to the work. The principle of the model should be further developed.

1.2 Structure of the Model

Personnel structure

Wiwatwanij, S. and Imjai, J. (1993: 31-35) says that emergency service will be effective if service providers are knowledgeable and competent in providing correct preliminary treatment by using appropriate technique. It needs to be carried out in a team. Each team member has good relationship and a head of the team has good leadership and is able to supervise the performance.

Forming a treatment team is important for personnel administration of the Emergency Department. All new nursing staff need to get orientation and gain their knowledge when coming to work at the development. All staff need to be able to work in a order to provide effective treatment, particularly for such situation as short of breath, no heartbeat, or accidents. Every staff need to understand the A B C procedures clearly:

A = Airway, clearing the airway to enable breathing

B = Breathing

C = Circulation, massage the heart or life rescuing

Effective forming of a treatment team is as follows:

1. Head nurse of the Emergency Department analyses job description and workload based on performance during the past 3 years, then, allocating manpower for emergency service to cover 24-hour service, such as:

Morning shift 1-2 professional nurses
2-3 Technical nurses
1-2 Patient aids

Afternoon and night shift
1-2 Professional nurses
1-2 Technical nurses
1 Patient aid
1 bed staff

2. Set up scope and responsibility of staff in level in writing, particularly for emergency care or when having more than 1 patient coming for the service.

3. Providing orientation for all new staff to be able to work in a team, rescue and providing treatment when having more than 1 patient coming.

4. Evaluation of performance and improve all mistakes as well as gaining knowledge to fill the gaps regularly with regular evaluation.

Forming a team can be varied from a hospital to a hospital which has different staff limitation. A professional nurse who is head of each shift should be able to to manage personnel under their responsibility. At the same time, head of the Emergency Department can provide activities to increase knowledge to all nurses before or even during working. Situation can be created such as afternoon and night shift when there are less staff or during morning shift when there are more staff so they can help in the emergency situation effectively.

Pakpanij J., Nicrothra, P. and Tuntikul, J, (1997: 9-11) say that there are 3 types of personnel working in the Emergency Department, i.e. doctors,

nurses, and administrator. They are working in a form of committee with representative from other department participatively set up policy and improve the service. The staff themselves can perform efficienttly under the given objectives.

There must be doctor standby for 24 hours at this department. It can be a family doctor or intern doctors working at this department should receive orientation to gain understanding on their responsibility. They should consult senior doctors in case of having problems. If additional doctor is need, it should be selected to meet the type of patients.

Nurses working in the Emergency Department should be selected in term of number and quality. They need to be able to be able to solve a problem promptly, having high ability, flexible with work, having good interpersonal relations and willing to work at the Emergency Department because patients at this department are coming with fears and worries. Nurses working at this department need to be able to make decision upon emergency situation promptly and can use their knowledge to assess problems of the patients.

Besides, the nurses should be skillful on the use of equipment and medical supplies. They should understand physical and mental needs of patients by assessing the patient individually, Moreover, nurses at the Emergency Department should have the following characteristics:

1. Care for patients at all time.
2. Can adapt themselves to any emergency situation.
3. Be patient to behaviors of patients and relatives.
4. Observe patients' symptoms and can make decision well.
5. Providing information and health education advice to patients.
6. Be enthusiastic to serve with good and impressive gestures.

7. Having good relations with patients and relative so that to assess needs and problems of patients and make patients trust and satisfied in the services.

8. Be able to assess emotional stress, understand about sickness and give good help.

9. Able to work in a team.

10. Specially trained and knowledgeable in laws.

Furthermore, an orientation should be organized to provide information on policy, essential knowledge such as life rescue, consultation, counseling, emergency care and advance technology.

Manpower allocation for the Emergency Department depends on number and type of patients who come services during 24 hours. There will be receive diagnosis at other clinics. For real emergent patients, they will receive service at the Emergency Department through triage with highly experience patients. Monpower allocation needs to be response to the unit or area of the Emergency Department, as follows:

1. Triage, this unit needs senior nurses with high experience who can assess symptoms accurately and refer the patients to get treatment correctly and rapidly.

2. Head of each shft is responsible fore planning and job assignment, direct and advise on patient service to all staff, coordinate with other sectors, as well as report on problems that occur to the head nurse in writing.

3. Health care unit provides health care services such as would dressing, injection, lumbar puncture, and so on for correct diagnosis.

4. Diagnosis room needs nurse assistant to prepare equipment and assist a doctor during diagnosis.

5. Rescuing room is the most important in the department and needs at least 2 senior and experienced nurses and 2 nurse assistants to work cooperatively in a team to save life of a patient. They should also have knowledge on drugs and equipment such as EKG, defibrillation, etc.

6. Splint and small operation room need to have a nurse with high experience in assisting a doctor for patients who need splint or small operation.

7. Counseling unit also needs a nurse with competency in providing consultation on all problems as well as teach patients in person or in groups.

Staff at the emergency unit, besides doctors, are nurse assistants, ward clerks, workers and bed staff. All of them are important for providing service to patients.

The Nursing Division, Office of the Permanent Secretary (1997: 13-14) provides criteria for nursing manpower of the Emergency Department as follows:

1. Number of position

1.1 Principle and context for consideration when calculating number of positions are as follows:

1.1.1 Treatment of 4 emergency patients per 1 nursing team.

1.1.2 Position in 1 team consists of professional nurses.

1.1.3 Emergency patients can seek service for 24 hours.

1.1.4 Thus, need at least 4 shifts, i.e. morning, afternoon, night and holiday

1.2 Equation for calculating number of position needed for emergency service is:

Number of team required = Number of emergent patient/ day /4

Number of team required = Number of team required for emergency service

Number of emergent patients per day = Average number of emergent patients per day (calculated from number patients received service in 1 years or 365 day)

2. Setting up position level

Positions of professional nurses need to be level 3-5 or 6 or 7 because their work need knowledge, specialty, and professional tecniques for assessing serverity of sickness, making decision of helping patients, mornitoring and providing care. They also need to provide consultation, advice and training in their profession.

For a hospital with emergency service department and has more than 45 emergent patients per day can have one position of level 8 professional nurse. However, if the number of patients is more than 90 patients per day, one additional position for level 8 can be allocated to serve as a head of assessment team who can make decision and give orders on emergency service, monitoring efficiency of patient service, counseling, and and giving advice on performance to all nursing staff. This position is allocated from professional nurses that should have under that work.

3. In case a hospital cannot be allocated with sufficient number of professional nurses, technical nurses with experience can be assigned to work with the team. In each team should have 3 professional nurses and 1 technical nurse. This technical nurse will be responsible for symptom observation, reporting symptom changes, assist a doctor or nurse in diagnosis or treatment, and preparing equipment. The performance of a technical nurse needs ability, specialty, experience and advance treatment techniques, so the position is for level 2-4 or 5 or 6.

Material structure

1. Building/ infrastructure

Chantrapa, W. (1995: 48-52) mentions about organising buidling/ infrastructure as follows:

1. The location of the Emergency Department should be closed to hospital's entry and on the floor convenient for communicating with other departments such as X-ray, diagnosis, operation, or critical care unit. In front of the

department should have inclined entry and exit for wheeling the beds or wheelchairs. Ambulance can park close to department. Besides, there should be clear sign of the department with lighting so it can be seen fom outside the hospital.

1.1 Gate and patient transferring way should separate between entry and exit. The gate of the Emergency Department should be wide not less than 1.80 meters and high not less than 3 meter. Door should be pussh or slide door for convenient in moving patients and equipment such as x-ray or oxygen cylinders, etc.

1.2 Window, floor and walls are all important. Windows should be push or slide with removable fly screens. Floor should be polished stone with brass trimming for convenient cleaning and conducting electricity to the ground. Wall of the emergency room and around sink should be covered with glazed tiles for up to 2.5 high or out of a hand reach for cleaning and disinfecting purpose.

1.3 Lighting should use light tubes that provide lighting most similar to day light, together with a lamp with 50-100 foot candle lights. The emergency electric system should also be spared in case of electric black out.

1.4 Good ventilation system to increase fresh air and reducing germs and unpleasant smell.

1) Natural ventilation through window. The emergency room should have windows cover 20-25 percent of the floor area. The window size should not less than 0.80 meter wide and 1.10 meters high with lower frame 1 meter above the floor.

2) Ventilation by mechanism such as air conditioners, fan and air filters which need cool air to make it work. For ventilation, cool air will be falling down and hot air floatng above, ventilation will not occur and germs or pathogens will accumulate. So to use air conditioner for ventilation in the emergency room should consider disease control. At present there is air conditioner which provide bacteria free air by circulating the 15 rounds per hour and the filter can filtrate particles as small as 1-5 microns. However, it is 10 times more expensive in price.

2. Dividing area the Emergency Department to consist of the following:

2.1 Bed centre should be located in front of the department and can be seen clearly, as well as staff in the centre can see if patients in a vehicle has sever symptoms so they know if bed or wheelchair should be used.

2.2 Information and patient card room should be in the front area so patients can see clearly as well as asking for information about service. Benches should be provided for relatives around here.

2.3 Triage is the first pass to assess symptoms after getting a card in order to classify patients and refer to other appropriate departments.

2.4 Treatment room should have area at least 2.50x3.25 square metres and divided into small diagnosis and treatment rooms with area for a nurse to do paper work in between the rooms against one side of the wall so that all beds can be seen.

2.5 Rescuing room is used for saving life of patients case of heart failure. The room should be 6x4 square meters for convenience in installing equipment and 2 bed and at least 3 members of a team.

2.6 Small operating room should be close to the department and semisterile.

2.7 Room for splint, washing, interal examination and sysptom observation. Splint room should be close to the treatment room for a convenient of moving patients. A washing room for patient with dirt or acid or base should be provided. If cannot be separated, it can be in a treatment room with curtain. Symptom observation room is for observing symptoms for any change and waiting for diagnotic result.

2.8 Supplies and equipment room should be close to the treatment room so the treatment team can get supplies they need conveniently.

2.9 Doctor and nurse rooms should be in the same room so that doctors can be called or consulted easily in case of emergency. Nurse area can also be used for dining with staff restroom nearby. The toilette ratio is 1 per 15 male staff or 1 per 12 female staff or the average toilet: staff 1:1:10.

2.10 Equipment washing basin should be big enough to clean dirty and not dirty equipment at the back of the department with good sunshine and ventilation. Sleeping wast disposal area should be close to the toilette. Apron bins should have closed lids and placed at the back of the building. Patients toilette particularly in the regional areas should be septic tanks rather than flushing toilette. The toilette ratio is the same as for the staff. A room or cupboard for spare equipment is important for the Emergency Department.

2.11 Security unit is important for supporting the emergency service because there are several kinds of patient and some can cause crimes.

Jamjuree, D. (1999: 74-75) mentions about appropriate management of the environment, building and facilities in Emergency Department for safe and impressive services, as follows:

1. Location of the department enable reception and referral of emergent patients:

1.1 Having clear sigh indicating the location of the department which can be seen from outside and inside the hospital.

1.2 Having a clear way for ambulance or patient vehicle to access the department conveniently, fast and safely.

1.3 Location of beds and wheelchairs is close to the patient reception and referral point.

1.4 The patient reception and referral point is close to the emergency room and can be easily accessed.

1.5 Nursing staff can see service recipient easily or having communication tool to contact security guard or bed staff to inform about arrival of emergent patients.

1.6 Entry and exit are on different way with wide gates.

2. Space is proportionally arranged and appropriate for providing service, the space should have:

2.1 Triage

2.2 Diagnosis and first aid

2.3 Emergent life rescue

2.4 For cast

2.5 Poison diluting

2.6 Symptom observation

2.7 Preparation of space for mass diaster following the space plan with the emergency room as the centre

3. The transporting system is convenient for moving or helping patients.

4. Facilities for service recipients:

4.1 Reception counter and patient card office are located in the front of the department.

4.2 Number of benches are enough for patients and relatives.

4.3 Signs or direction symbols to important places such as dug dispensing room, x-ray, and are clear.

4.4 Having enough toilettes for service recipients (12-15 people : 1 toilettes)

5. Having facilities for staff such as meeting room, changing room, toilet.

6. Environmental condition and work place environment:

6.1 Clean, not stuffy or stink.

6.2 Proper lighting, temperature and good ventilation to prevent emission of disease.

6.3 Materials and equipment are nicely organized without obstructing walkway.

7. Having space for used equipment such as for aprons, waste, and cleaning used equipment, which is separated from treatment area.

8. Effectve security

8.1 Having security guard who can be easily contacted.

8.2 Having communication equipment that can communicate with the police.

8.3 Providing rehearsal for all staff to practice when there is a case emergency or disater

2. Equipment, materials and medical supplies

Chanthapa, W. (1995:57-62) mentions about management of equipment and supplies in the Emergency Department, as follows:

1. Criteria for management of equipment and supplies in the Emergency Department:

1.1 Providing enough list of equipment for each shift.

1.2 Checking and adding equipment to complete as listed.

1.3 Having each piece equipment ready for the work.

1.4 Organizing equipment in group with clear signs or symbols for convenient use.

1.5 Equipment are located in a place easily for access and use.

1.6 Equipment with complicated instruction should have a label showing clear instruction of use.

1.7 Having correct maintenance criteria.

1.8 Checking equipment in the emergency cart to be ready for the work.

1.9 Separating each type of equipment for sterilization.

2. Equipment for the Emergency Department:

2.1 Diagnosis room

2.1.1 Bed

2.1.2 Bed for internal diagnosis

2.1.3 Equipment for diagnosis

2.1.4 Equipment counter

2.1.5 Wound cleaning cart

2.1.6 Wound dressing cart

2.1.7 Oxygen tube and vacuum

2.1.8 Wall sphygmomanometer

2.1.9 Electronic clock

2.1.10 Hand sink

2.1.11 Bins for contaminated waste

2.2 Staff changing room

2.2.1 Shelf for shoes worn in the department and self for shoes worn outside

2.2.2 Hand sink operated by elbow, with soap tray and hanger for a hand towel

2.2.3 Cupboard for clothes used in a patient ward

2.2.4 Cupboard for staff ‘s clothes

2.2.5 Lockers for staff ‘ s belongings

2.2.6 Dressing desk with mirror

2.2.7 Staff rest room

2.3 Cast room

2.3.1 Equipment for cast

2.3.2 Equipment of muscle / born stretching

2.4 Observation room

2.4.1 Bed, same as in a patient ward

2.4.2 Bedside table

2.4.3 Oxygen pieline and vacuum with equipment for giving oxygen and suction

2.4.4 Hand sink operated by elbow, with soap tray and hanger for a hand towel

2.4.5 Vital signs equipment

2.4.6 Bins for contaminated wastes

2.5 Small operation room

2.5.1 Operation bed

2.5.2 Operation lamp

2.5.3 Equipment tray

2.5.4 Solution cart or self

2.5.5 Foot rest

2.5.6 Stitching and operating sets

2.5.7 Air conditioner

2.6 Medicine and solution preparing room

2.6.1 Equipment set such as stitching set, wound dressing set

2.6.2 Cupboard for medicine

2.6.3 Cupboard for body cleaning equipment

2.6.4 Medicine and solution preparing counter

2.6.5 Hand sink operated by elbow, with soap tray and hanger for a hand towel

2.6.6 Bin for wet/ contaminated wastes

2.6.7 Preparing cart

2.6.8 Wound dressing cart

2.6.9 Equipment desk

2.6.10 Drug refrigerator

2.7 Nurse working room

2.7.1 Two-level counter, 1st level is 30 inches high and 2nd level is 10 inches high from the floor

2.7.2 Moveable and rotate-able chair without armrest

2.7.3 Document cupboard

2.7.4 Office stationery

2.7.5 Addictive deug cupboard with a lock

2.7.6 Film viewing room and film keeping cupboard

2.7.7 Hand sink operated by elbow, with soap tray hanger for a hand towel

2.7.8 Bins for dry wastes

2.7.9 Internal and external telephone or radio

2.8 Cupboards for materials, equipment and medical supplies

2.8.1 Cupboard for spare equipment and supplies

2.8.2 Breathing equipmemt

2.8.3 One moveable EKG

2.8.4 One defibrillator

2.8.5 Ambu bag

2.8.6 Equipped moveable suction

2.8.7 Equipped oxygen provider (with oxygen flowing meter)

2.8.8 Pieline equipped suction

2.8.9 X- ray portable

2.8.10 Cupboard for patients'clothes

2.9 Equipment cleaning room

2.9.1 Bedpan self

2.9.2 Waste drainage

2.9.3 Two washing sinks (for clean and dirty equipment)

2.9.4 Equipment drying desk

2.9.5 Rail for strip equipment

2.9.6 Cleaning Equipment for the department

2.9.7 Equipment cleaning stuff

2.9.8 Cupboard for cleaning chemicals and soap

2.10 Staff room

2.10.1 Hand sink operated by elblow, with soap tray and hanger for a hand towel

2.10.2 Dining desk and chairs

2.10.3 Drinking water tank

3. Medicine and solution should be separated based on the local illness while the amount should be based on service in the past year.

3.1 General medicine and solutions

3.2 Medicine and solution on the emergency cart need to be provided appropriately and sufficient for 2-3 patients at a time. Medicine should include distilled water, 50% glucose, atropine, adrenalin, sodiumbicarbonate, xylocard, xylocain with adrenaline, lanoxin, morphine, isuprel, etc.

There need to be a list of these medicine and solution and number/amount should be check. Additive medicine need to be kept well. And medicine solution on the cart should be circulate to prevent deconditioning or expiration.

Phrukpitikul, S. (2000: 333-341) mentions about having standard equipment, supplies and facilities for effectve and safe service, as follow:

1. Having a selection and evaluation system for equipment, materials, medicines and medical supplies

The hospital should set up a mechanism for selecting equipment, materials, medicines and medical supplies and allow staff who need to use these equipment, to participate in selection. It can also be in the form of purchasing committee.

2. Providing enough equipment and supplies

A hospital should survey the need for purchasing equipment and supplies as well as for replacing damaged or expired ones.

In case of limited resources, purchasing should consider priority and worthiness.

3. Training for the use of special equipment

Staff who need to use special equipment such as operation or laboratory euipment, X-ray equipment, etc., should be trained

The hospital should have spare equipment and supplies system for highly needed equipment, such as borrowing from other department.

4. Providing spare equipment and supplies ready for use at any time.

The hospital should have spare equipment and supplies system for highly needed equipment, such as borrowing from other department.

5. Providing preventive maintenance

Effecttive maintenance system should have the following composition:

- Maintenance manual to prevent damage, and staff understand the instruction well.
- Having a maintenance system for some fragile equipment such as having trained technicians or a system to contact service agent rapidly.
- Having maintenance plan for each equipment.
- Having record of the equipment, selling agent, and maintenance system of each equipment.
- Recording problem of each equipment including type of problem, solution, cost and time period of not using.

6. Having monitoring system to ensure equipment and supplies are ready to be used.

A hospital should ensure that each department has a mornitoring system for readiness of the equipment, as follows:

- Listing equipment that need checking each day or each shift.
- Providing a system for regular checking readiness of the equipment.
- Recording the result of monitoring and checking.
- Equipment that need regular monitoring and checking

7. Having calibration system

A hospital should have a system to calibrate the equipment particularly equipment for patient care, e.g. respirator, infusion pump, defibrillator. And diagnostic equipment such as hearing measurement, ECG.

Calibrating system should be as follows

- Identifying equipment that need calibration.
- Having written manual for calibration.
- Standard and recognized calibration method.
- Calibrating equipment is highly accurate and certified by nation or interational body.
- Preparing calibrating plan in advance and calibrate the equipment as planned.
- Controlling environments during calibration as required in the manual.
- Having a preventive measure for adjusting the equipment after calibration that can affect accuracy.
- Showing stutus of calibrated equipment properly such as using sticker so that user know if the equipment is still accurate or need calibration.

Since calibration is costly, the hospital should only calibrate essential equipment. A committee on calibration should be formed consists of doctors knowledgeable persons. Following criteria for calibration should be considered for most cost effective calibration.

Money structure

Sarasombat, Y. (1994: 134-138) defines budget administration asd the process of changing financial resource in accordance with objectives due to financial limitation. There are 4 phases of budgeting cycle, as follows:

1. Preparation of budget.
2. Budget approval.
3. Budget administraion.

4. Budget control.

Dejthai, T. (1996: 19) says that there are 3 phases that administrators should know about budgeting:

1. Preparation phase, each department draft their departmental budget indentifying activities and money needed, then submmit it though administrative levels for consideration as organizational budget.

2. Budget proposal is presentation of organizational budget to the Bureau of Budget for consideration before submission to the parliament for approval.

3. Implementation of the budget as said in the budget as said in the budget plan.

Tridech, P. (2000: 13) says that incomes of public health institution are from 2 main sources, i.e. budget and non-budgeting money, which be divided into 3 types:

1. Expenditure budget is the maximum amount of money allowed to spend under objective and time mentioned in the Act.

2. National income is all incomes the government collects or receives as provided by the law and regulations, any government office cannot keep part of the money.

3. Non-budgeting money is the money is the money under responsibility of the agency which is not butget, national income, remaining budget waiting for return.

Expenditures in the pulic health institution both for budget and non-butgeting money need to strictly comply with the regulations on government expenditure.

Working structure

Torugsa, S. (2000: 46-55) says that there are 4 elements of the principle of working system, as follows:

1. Work centred.

2. Each work consists of working systems:

2.1 Servicing system, which is the main working system.

2.2 Supporting service system

2.3 Improving service system

2.4 Managing service system

3. Clarifying all 4 working systems in written and feasible for practice, then informing concerned people.

4. Follow up, support, promote and control the implementation of the system among aall concerned.

5. Regularly improve the system, emphasize on implementers to be able to improve the working system themselves appropriately and continously.

Servicing system

The goal of the servicing system is providing rapid, correct and impressive services, from the arrival of clients until leaving. It consists of 6 main activities:

1. Prepareness before providing service in following asssssspects:

1.1 Service provider.

1.2 Materials, equipment needed for service.

1.3 Money needed for service.

1.4 Procedures for each situation, such as emergency, person-specific, disease specific, ect.

2. Impressive welcome and greeting, interms of:

2.1 Place, e.g. cleanliness, orderliness, nice and confidence, etc.

2.2 Behaviors of service providers such as gesture, eye contact, wording, action, etc.

2.3 Service support such as brochure, drink, food, communication equipment.

3. Proividing preliminary service appropriately and promptly based on the need of the service recipient, as follows:

3.1 Emergent service such has life rescue, pan relieving, panic relieving.

3.2 Relieving worry, anger, etc.

3.3 Person-specific service such as monk, VIP.

4. Comprehensive service, which meets the need of patient, technically correct, fast and appropriate for each recipients:

4.1 Main service.

4.2 Supportive service

4.3 Specific service

5. Final service before recipients leave:

5.1 Feeling, e.g. releasing of worry, giving care, a feeling of proud, etc.

5.2 Knowledge and understanding, e.g. advice, explanation, reminding,etc.

5.3 Traveling home, e.g. cars, taxi, wheelchairs, etc.

6. Complete service after the service recipient has left,as follows:

6.1 Continued care such as referral, communication telephone, letter, postcard, home visit, etc.

6.2 Cleaning of equipment, and area as well as maintenance of the equipment.

Each department will have different working system specially for the department based on their resources and limitations.

Supporting service system

The supporting service system has a target to providing resource in supporting the work, such as man, money, material and technology to enable correct, satisfied service on time and at the right place. There are 9 main activities as follows:

1. Identifying needs for service support that is clear, accurate, complete and feasible.

2. Recruiting service support correctly and completely based on the need of service providers.

3. Keeping the service supports safely with good quality until they reach users.

4. Distributing service supports to users correctly, rapidly without damaging.

5. Utilize the supports in accordance with their characteristics and capacity.

6. Improving the service supports for better utilization.

7. Repairing service supports to last longer, more durable and can be easily repaired if damaged.

8. Distributing service supports correctly, appropriately and fast high benefit.

9. Control and coordinate each activity above to be most effective.

Improving service system

The target of the improving service system is to improve service to be in progress, rapid, secured, and sustained. It is composed of 6 main activities as follows:

1. Analysis of current situation to determine problem, root causes and how to improve or solve the service to become clear and comprehensive in the fpllowing aspects:

1.1 Work

1.2 Department

1.3 Organization responsible for the service

Things gained from this activity are what to be improved, by what strategies / methods for the most optimum result.

2. Planning of service improvement for clear,complete and supportive planning before implementation and evaluation of the service, can be divided into:

2.1 Short-term plan

2.2 Long-term plan

3. Implementation of the plan, the plan is effectively and effiently implemented:

3.1 Preparation of administrators of the work/project to understand the plan and can administer the plan effectively.

3.2 Preparation of implmenters to have good attitude toward the plan and can understand and be willing to implement.

3.3 Monotoring and evaluation/improvement occasionlly, and effectively.

3.4 Appropriately support the implementers at the beginning and later.

3.5 Helping and solving problems for implementers appropriately, on time and can be positive at the short and long terms.

4. Evaluation of input and output process of implementation of the service improving plan in the following issues:

4.1 In accordance with taget of the improving service plan.

4.2 Sufficiency of target implementation.

4.3 Efficiency of the implementation.

4.4 Effectiveness of the implementation.

Conclusion and recommenations of implementation are needed during this process, which can be further used.

5. The use of implementation result, in the follwing aspects:

5.1 Human development.

5.2 Work improvement, both is work and other.

5.3 Organization development.

It can be distributed within the development, community, in the country and in other countries.

6. Follow up, coordinate and control all activities to progress properly, relevant to each other but not duplicate, and with most effectiveness.

Managing system

Managing system has a taget to make all work proceed smoothly and relevant based on existing resources. There are 7 main activities as follows:

1. System planning at the beginning as guideline of practice.

2. Controlling the work to follow the system, emphasize on self-controlled and interpersonal controlled with willingness, straightforward, complete, proper and high effectiveness.

3. Improve and develop the working system during implementation as needed such as monthly, etc.

4. Reviewing the whole working system regularly and continuosly, such as every 6 months, etc.

5. Improving the whole woking system as planned such as every during the first 3 years, then, every 3 year.

6. Follow up, coordinate and control all activities to propress properly, relevant to each other but not duplicate, and with most effectiveness.

7. Deforming the organization or work after careful consideration that there is no need for further implementation, thus, it is the end of the managing system.

Factors affecting working model

Kasemsin, S. (1947: 85-91) mentions about model of a work plan that it needs to consider available resouurce, characteristics of work, current

situation and future targets. There are several implementation processes but only 3 are well known:

1. Objectives which are different from organization to organization depends on model and basic characteristics of the organization.

2. Policy which is developed as guideline for implementation to achieve the objectives. Good policy should be based on the principle of procedure.

3. Guideline is the most details work plan.

Effective model of implementation

Santiwong, T. (1992: 30) says that model is a conceptual framework. Analysis of the model will cause 3 effects as follows:

1. Better data collection because the model can identify what problems exist.

2. Better data interpretation and utilization because the model can tell which data should be analyzed.

3. Better decision making because model can define scope and regulate analysis. Asny action taken by administrators always has complete and good consideration.

Implementaion of the model

Torugsa, S. (2000: 219-220) mentioned about the effectve implementation of the model that it should include the following:

1. Model setting and improving based on the research which has 7 steps as follows:

1.1 Analysis of the existing model to understand it clearly and determine what to be improved.

1.2 Develop a new model based on technical principle.

1.3 Checking the structure and content validity by at least 3 experts, i.e. administration, implementation, and organizational administration, then, editing the model as advised.

1.4 Checking appropriateness and feasibility of the new model by field trial by administrator and implementational team, then, editing the model based on the comments and recommmendations.

1.5 Implementation of the model.

1.6 Improving or change the model during implementation as appropriate if the implementation team and the model development team agree.

1.7 Analysis of the model, its implementation and results and use these outcomes to improve the model to be more comprehensive.

2. Model implementing, consists of 5 steps below.

2.1 Preparation before implementation.

2.1.1 Preparing administrator and the organization to be aware of, and understand the model correctly and have good attitude toward the model.

2.1.2 Preparing the implementation team to understand the model clearly and have good attitude toward the model as well as can work effectively in a team. The team will include model developer and implementers. The structure of the team includes planning implementing and evaluation sections. Each section should have clear function.

2.1.3 The planning section drafts the action plan and presents it to the team for comments. The action plan should include evaluation and implementaion time of not less than 3 months. Implementaion will be more comprehensive if the time is not less than 1 years as it is a complete cycle of working and can cover all factors.

2.1.4 Submission of the action plan for approval by the authorized person.

2.1.5 Distributing the approved action plan to people concerned.

2.2 Implementing the action plan.

2.3 Formative and summative evaluation.

2.4 Summarizing the implementation results and preparing a report.

2.5 Presenting the results of implementation to the administrators.

3. Model development by using finding from implementation to improve the model to be up-to-date and effective.

Resources used for implementation

Composition of resources used for implementation

Tochida, B (1999: 30) says that resources or administrative factors, sometime called 3M or 4m, i.e. man, money, material and management. Or nowadays known as 4Rs,i.e. human resource, financial resource, physical resource and information resources are the imput.

Torugsa, S. (2000: 30) say that fundamental of work are man, money, material, tehnical and time which administrators needs to manage efficiently and effectively.

Factors affecting resource used for implementation

Suwannart, W. (1982: 87) mentions about increasing effective use of resource. He says that any activity that can create optimum benefit under limited resources is call effectve activity.

Santiwong, T. (1992: 308-309) says that while facing several situation, an organization will set up resource for working, which consist of ability, asset, resource and experience. Each organization will have different method of setting up the resources that can be modified to respond to the work plan appropriately. Different set up of resources can either reduce or increase the resource.

Resource used for implementation

Santiwong (1992: 34) says that business organization is a system for transforming resources by giving input, i.e. personnel, raw material, investment cost, machine, knowledge and information and transform them into output or in the form of products, service or reward which can be sent uot of the organization.

Procedures

McLarney (cited in Kesemsin, S. 1974: 89) defines procedure as rules or order provided in the working process. Procedures are part of the working sysyem. Criteria for setting up adminitrative procedures shuold include:

1. Should have report and be ready for monitoring at each procedure.
2. Identifying each job clearly to prevent conflict and duplication.
3. Each procedure should consider man, material, equipment, good reporting and recording systems.
4. Details of procedures to be cooperated and involves good reporting and recording systems.
5. Procedures should be relevant to other sectors and importantly related to organization objectives and policy.

Implememtation methods

Navikarn, S. (1995: 332) mentions that importance obstacle of using new policy, target or procedures is resistance of members on the chnge. There are 3 causes of resistance as follows:

1. Uncertainty of impacts of the change, members of an organization are resisting to the change because they want to avoid uncertainty. They would prefer the same procedures that they are used to without willing to cancel it, so they are resist to any change.
2. Unwillingness to loss the benefit they are receiving. Though a change can be benefit to the organization as a whole, it can negatively affect members or some section so these people may have resistance to the change.
3. Perception of weakness of the change. Some resistance may be caused by some problems that are overlooked by change initiators. This resistance ts a good one.

Santiwong, T. (1992: 342-344) mentions that resistance to a change is always parallel to the change so administrators need to carefully set up

processes of change so that the change can occur smoothly. There are 3 methods of doing so as follows:

1. Motivating: It is motivating people to accept the change which can be done by providing information showing benefits from the change. In order to motivate, information need to be comprehensive. Information can be provided in a group explanation or by writing but has to be though and easy to understand so that it will be accecpted. Besides, giving information during and after the change is also importand as it will stress on reliability.

2. Participation in the change from planning until inplementation will reduce resistance to the change because:

- it will make members feel owning the change.
- It will allow stakeholders to exchange information which will create an understanding among staff and change initiators.
- There will be better understanding on reasons for change.

There are several ways of participation such as data collection by interviewing opinion, opinion survey or selecting representative of each section to participate, or even using an experimental project in order to create confidence and trust from trial. This will lead to acceptance eventually.

3. Using authorization by depending on people with power who is widely accepted. However, it depends on several factors such as high ranking executive with power need to get involved occasionlly.

Implementation environments

Definition of the environment

Rajbunditsathan (1999) defines environment as physsical and biological conditions surrounding human. They can occur naturelly or manmade.

Santiwong, T. (1996: 3) mentions about organization environmental condition that it is condition of external factors beyond control of an organization.

Composition of the environment

Sereerat, S. et al. (1996: 53) mentions about organization environment that it consists of:

1. General environment such as politics, legislation, economy, technology, social, culture, and international environment.
2. Task environment such as clients, competitors, raw material suppliers, employment market, government officer, and co-investors,etc.
3. Internal environment such as business owner, shareholders, employees, administrative committee and organization culture.

Affecting environment

Navikarn, S. (1995: 58-62) says that important task environments are distributors, clients, competitors, and government agencies. Administrators need to set up some thing to maintain or improve the perforrmance under changing environment.

Sereerat, S. et al. (1996: 63) says that uncertainty of the environment can create change and confusion which will affect the organization. Reaction of the environment will indicate ability in resource mobilization. The administrator can formulate appropriate strategy to respond to this environmental presure and changing the organization to suit with the environment.

Problems and constraints of implementations and solving implementation problems

Torugsa, S. (2000: 157-159) mentions that problems of implementaion used to be an issue for monitoring and evaluation. However, for a modern administration, we regard this, as past experience so follow up is to determine what happened, how it was solved and what the result was. Importantly, it is what implementers gain from this and how to prevent the same problem. Important principles for solving problems at the work place are:

1. At the cause
2. In time

3. Creative
4. Improving man, work and organization
5. Making bad thing a good thing
6. High efficiency

Prevention of a problem is the best solution, which can be proceeded as follows:

1. Setting up clear and appropriate working syssstem in writing and providing training, monitoring, promoting, and improvement so that set up system is strictly implemented.
2. Having internal auditing system to encuorage implementation of the set up system and should focus on team auditing by working staff and continually develop to become self-improvement.
3. Promoting basic value on " being careful, conscious and open-minded" among all staff.
4. Setting up problem surveillance system to be informed about the problems and can manage it correctly and properly.

A key to success is head of the organization and quality improvement team, so qualified people should be recruited and appointed to do the work.

If a problem arises, it should be solved as follows:

1. Not running away from the problem but e calm and solve it promptly.
2. Accepting the situation but no need saying it is your false.
3. Discuss creatively, not expressing bad emotion particularly anger.
4. Expressing enthusiastic, willingness and kindness clearly.
5. Not promising and not saying no but be determine to satisfy problem creator and audients.
6. Solving the problem completely.

7. Expanding the implementation result for wider benefit.

Enabling and obstructing factors for implementation

Nature of the actor if he/she is determine and willing to improve or solve the problem.

1. Situation occurs during taking action such as policy, politics, law, regulation, social movement, economic situation as well as emotion and feeling of those who take action.

2. Administrators of a department/organization such as administrative style, change of administrators, focus of administrators, related policy, etc.

3. Result of past actions, such as being rewarded, complimented, pride, or being blamed, losing face or fear, which can create learning and experience leading to motivation which can be less, more or the same.

2. Lteratures Related to Dependent Variables

2.1 Implementation results

Quantity of work

Definition of quantity of work

Rajbunditsathan (1999) defines quantity as more or less of aamount.

Tochinda, B. (1999: 207) defines quantity as amount or amount of product.

Composition of quantity of work

Torugsa, S. (2000: 273) says that quantity of work is what have been done, received or occurred from implementation and can be measured quantitatively.

Factors affecting quantity of work

Santiwong, T. (1992: 112) says that productive motivation focuses on using reward. If a staff has good performance and receives reward, the staff will continue to perform better. Thus, motivation is catalyst of productivity.

2.2 Quality

Definition of quality

Prukpitikul, S (2000: 3) mentions about quality under the standard of hospital accreditation that it is response, based on professional standard, to need of service recipients, as well as respect to right and dignity service recipients with quality dimension as follows:

1. Competent service provider (competency)
2. Service is acceptable, response to and expectation of service recipients (acceptability)
3. Service is appropriate and response t the standard (appropriateness)
4. Effective service (Effectiveness)
5. Efficient service with rational use of resource (efficiency)
6. Safe service without complication (safety)
7. Service that are accessible (accessibility)
8. Equity in receiving service (equity)
9. Continuity of service and care (continuity)

Sriratanaban, J.et al. (2000: 5) defines quality of medical care as characteristics under appropriate standard without any error so they provide good result and respond to need of service recipient satisfactorily.

Uthairak, K. (2000: 470) says that quality is to make different things the same things.

1. It is reform of old practice to the up-to-date practice (or revolution of the old system to the new one).

2. Making more than 1 system within one organization into only 1 system.

3. Create standard, reducing difference of practice, reducing misunderstanding and uncollaborration on the principle that everyone is working for the organization not for themselves.

4. Everyone speaks and understand on the same language that is quality language, reduces uncreative view that can cause conflict within the organization. The quality language can be used well for administration of change because quality is positive, anyone who dose not accept quality can be blamed. So it can reduce resistance, which is yhe first step of making different thing the same thing can reduce resistance, which is the first step of making different things the same thing.

5. Comparing with doing something good.

6. Working, service and production will be ssmooth because of quality from the beginning until the end

7. Clients are satisfied as they xan see good change and receive the same service.

2.3 Time

Definition of time

Parkinson (cited in Turugsa, S. 2000: 32) says that time is like air in closed container and work is work is particles of the air that are diffusing in the container, i.e. time. When the time for a piece of work to be completed is et up, working will start like arranging all particles of air within the given time. This needs good time management.

Tantikanoporn, K. (1998: 59) says that time is untouchable and intangible but can be seen through event or experience. It is unreachable and uncollectable resource.

Composition of time

Torugsa, S. (2000: 278) classifies time for implementation into 2 group as follows:

1. Time for working is measured in hours, minutes, second or more detailed unit.
2. In-time is action taken within the time given.

Factors affecting time

Charoenwongsak, K. (1998: 104-119) says that internal and external factors affecting time are:

1. Internal factors such as afraid of failure, undisciplined, non-punctuality, afraid of saying no, too much focus on wining, lack of clear target, not distributing task or ineffective task distribution.
2. External factors such as having unexpected visitors, interrupting telephone, non-orderliness desk.

Tantikanoporn, K. (1998: 59) says that time management is ability to get rid of unimport activities to do more meaningful activities instead which will lead to achievement. The great benefit from time control or management is freedom and ability to spend time.

2.4 Satisfaction

Definition of satisfaction

Na Nongkai, S. (1997: 19) says that satisfaction is emotional results of service recipients or clients.

Netphokaew, R. (1999: 135) says that satisfaction is status of good emotion after situation analysis. It is a feeling of like physically and mentally and closely related to courage.

Factors affecting satisfaction

In 1950, Herzberg proposed theoories of 2 factors (cited in Navikarn, S. 1995: 373) that factors involved satisfaction and dissatisfaction in working and occurred from 2 separated factors, as follows:

1. Motivation factors such as success, compliments, responsibility and progress. It makes satisfaction on the job content and resulted from performance.

2. Hygiene factors such as salary, organizational environment, company's policy. It is very important factors as it is the cause of inefficiency.

The Baldrige National Quality Program (2001: 1) mentions about factors affecting satisfaction of patient while waiting for treatment that they are varied, these include, good understanding about health and result of illness, relationship with service providers, cost, care and the most important factor is ability to participate in making decision about their own health.

Affecting satisfaction

Santiwong, T. (1992: 112) says that if work or status of work can respond to satisfaction of staff will be more motivated, which will be benefit for improving quality and quantity of work in a long run. This is because all work will be success due to their own initiation, and self control.

Conclusion

Satisfaction is feeling received from being responded to needs physically and mentally and depends on serveral factors.

2.5 Worthiness of resource use

Composition of worthiness of resource use

Torugsa, S. (2000: 179) says that worthiness is measured by values of things related to the work, which can be divided into 5 group, as follows:

1. Cost for implementation or investment cost.
2. Unit cost.
3. Reward of working such as incomes.
4. Profit
5. Use of available resource, i.e. man, money, materials, time, technology.

Factors affecting worthness of resource use

Santiwong, T. (1996: 8) mentions about ability of administrators in working that can create rational use of resource for optimum working results such as attempt to cooperate the work of each section, systematize the work or improving working methods, and effective use of machinery resources, i.e. save cost, high productivity with good quality of work.

Affecting worthiness of resource use

Navikarn, S. (1995: 195) says that effectiveness of increased production has 2 meaning which are increased ability of staff that result in reduced administrative cost, or same amount of productivity with less staff.

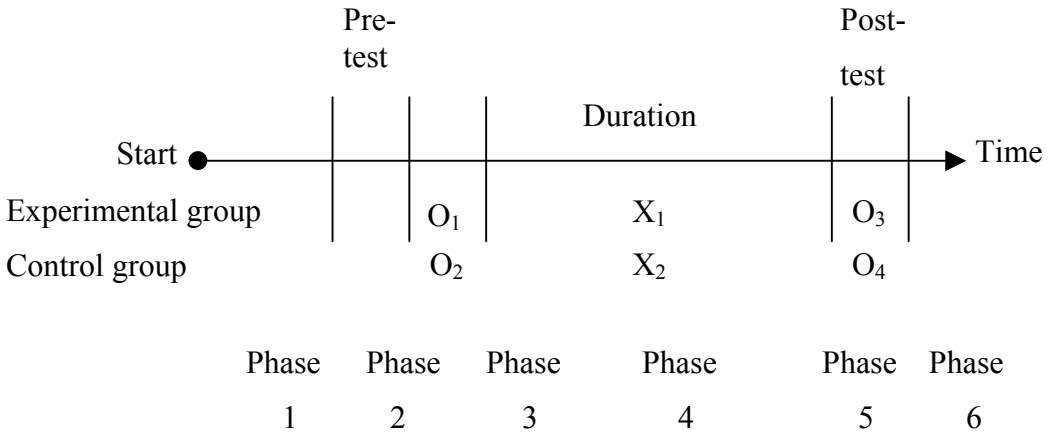
Conclusion

Worthiness of resource use is using available resource for optimum results with good quality productivity.

CHAPTER 3
METHODOLOGY

Research Design

This research is a quasi experimental research, using two groups pre-test post-test design, as illustrated in the following diagram:



X = Working model

O = Working Outputs by Working Indicators

Area Covered in the Research

Research area is the Emergency Department, Bangkok Christian Hospital,Chruch of Christ in Thailand. The hospital director has approved the conduct of the research in the hospital.

Control area is the Emergency Department, Saint Louis Hospital which has similar characteristics. The hospital director has approved the conduct of the research in the hospital.

Population and Sample

Main population are Each emergency service is timed from the receiving a patient until leaving.At the experimental area, there are 7 emergency service per day,49 emergency service per week.Atcontrol hospital,there are 10 emergency service per day, 70 emergency service per week.

Population responding the Questionnaire

1.	Administrators	Experimental area	30 people, selected by census
		Control area	20 people,selected by census
2.	Service providers	Experimental area	65 people, selected in 21shifts by census
		Control area	70 people, selected in 21shifts by census
3.	Service recipients	Experimental area	49 people, selected by census
		Control area	60 people, selected by census

Research Instruments

1. The new working model of Nursing emergency service work

Characteristics of the instrument

Developed the new working models for emergency service work have the following details:

1. Principle of the working model for emergency service, consists of:

1.1 Technical principle:

1.1.1 Administrative principle:

1.1.1.1 Administrative principle under Gulick and Urwick's POSDCoRB Model

1.1.1.2 Peter F.Drucker's Management by Objective principle

1.1.1.3 Heim weihrich and Horold KoontZ's Contingency Management principle

1.1.1.4 David Hapgood's Participative Management Principle

1.1.1.5 Principle of Management by Committee

1.1.1.6 Somchart Torugsa's Principle of Management

1.1.1.7 Organization development

1.1.2 Technical principles for emergency service:

1.1.2.1 Stanard of emergency service nursing, Division of Nursing, Office of the permanent Secretary, Ministry of Health

1.1.2.2 Stanard of emergency service under the hospital standard, patient quality development guidelines: the golden jubilee version.

1.1.3 Related technical principles:

1.1.3.1 Communication principle

1.1.3.2 Coordination principle

1.2 Related rules and regulations:

1.2.1 Patient's rights

1.2.2 Rules and regulations of Bangkok Christain Hospital

2. Structure of the emergency service working model:

2.1 Personnel structure

2.2 Material structure

2.3 Money structure

2.4 Structure of the working system.

3. Development of the emergency service working model:

3.1 Correct and detailed analysis of the emergency service working model, and know what should be improved.

3.2 Literature search to obtain information to develop a new comprehensive and appropriate model.

3.3 Collecting concepts principles in order to develop a new model.

3.4 Presenting the draft model to the thesis supervisor and experrts to check and comments, then edit based on the comments received.

3.5 Checking appropriateness and feasibility of the model, then, presenting it to administrators and service providers in the experimental areas for comment and correction.

3.6 Modifying and editing the model under the common agreement between providers of the emergency services and the working model development team.

3.7 Analyzing the working model and result of implementation from the beginning and then editing the model to be most appropriate and comprehensive.

4. Implementation of the working model in the experimental area

The completed model which has been approved by the service quality development team and head of the emergency department is implemented in the experimental area for 3 months. The model can be modified to suit with the services. The experiment time can be divided as follows:

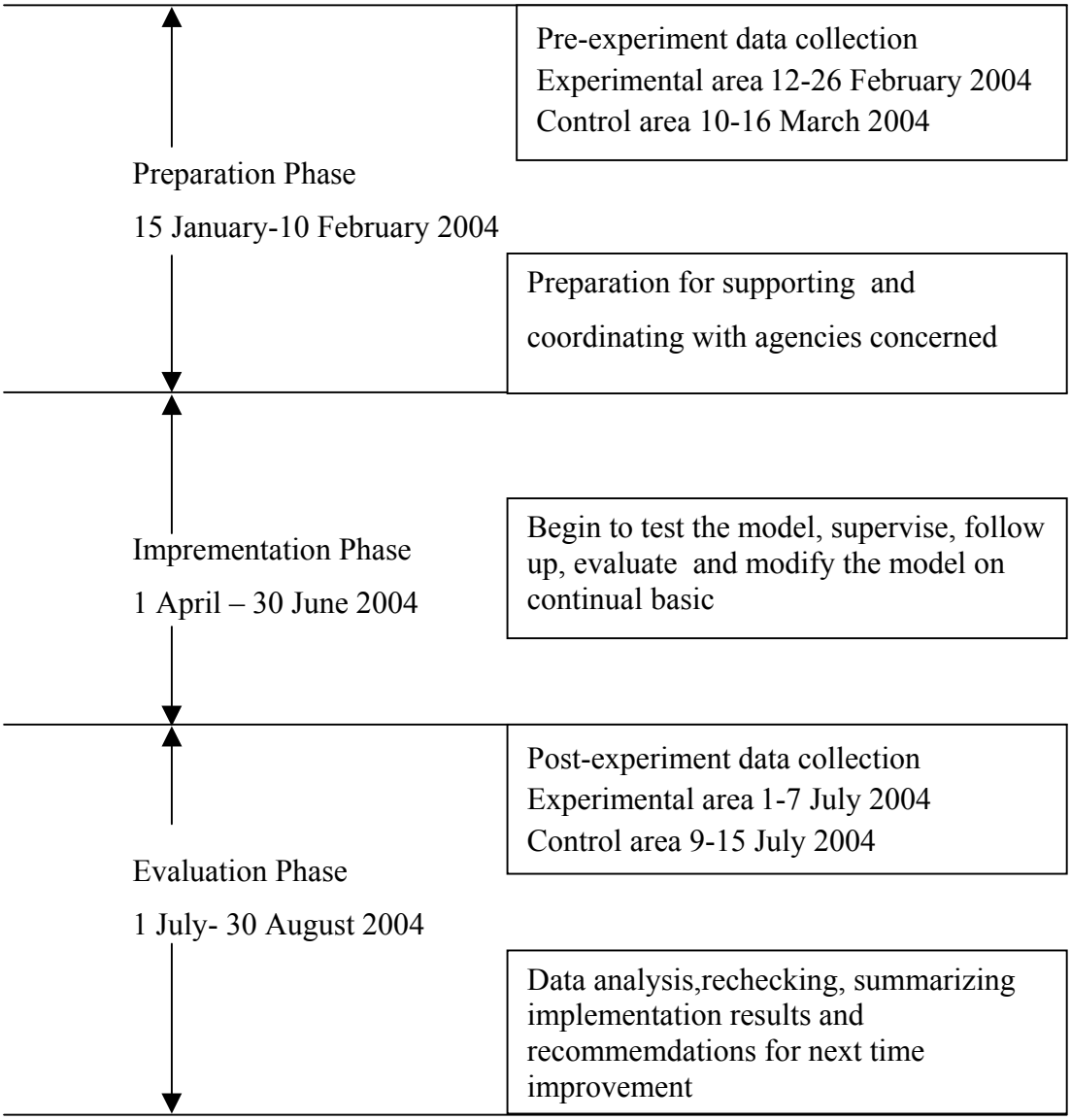


Diagram of working model implementation in the experimental area

Checking Quality of Research Instrument

The structure and content validity of the model is checked by 3 experts in at least 3 areas,namely,administrative experts,emergency service experts, and emergecy service administrative experts. If 2 out 3 experts agree, it implies that model is valid.In contrast,if at least 3 experts disagree, the research will correct the model resubmit until it is agreed.

2. Emergency service activity record forms

There are 2 emergency service activity record forms, namely:

2.1 Form for preparedness of the emergency service department

2.2 Form for activity on emergency service

Methodology on the development of the forms

1. Study the relevant documents and theories, available forms to get the information for developing the forms.

2. Develop the forms to cover all activities.

3. Submit the draft forms to the thesis advisor for checking, then editing it based on the advisor's comments.

4. Submit the draft forms to the experts for checking, then modifying it as advised by the experts.

Testing the quality of the research instrument

1. The content validity of the forms is checked by 3 experts in at least 3 areas, namely, administrative experts, emergency service experts and emergency service administrative experts. If 2 out of 3 experts agree, it implies that the forms are valid.

2. The accuracy of the questionnaires give 10 people check relevant to Kuder Richardson (KR-20, KR-21) and activities forms is not tested because activities observed from the real doing based on the criteria.

3. Questionnaire on satisfaction of the related people

There are 3 sets of questionnaire on the satisfaction, namely:

1.1 Set 1 for administrators

1.2 Set 2 for service providers

1.3 Set 3 for service recipients

Methodology for questionnaire development

1. Determine the issues by considering the composition of the service and satisfaction of the emergency services.

2. Develop the questionnaire to covers all issues.

3. Present the questionnaire to the thesis advisor for checking, then editing them based on the advisor's comments.

4. Submitting the questionnaires to the experts for checking, then modifying them as advised by the experts.

Testing the quality of the research instrument

1. The content validity of the questionnaires is checked by 3 experts in at least 3 areas, namely, administrative experts, emergency service experts and emergency service administrative experts. If 2 out of 3 experts agree, it implies that the forms are valid .

2. The accuracy of the questionnaire is not tested as the questionnaires include only one question on opinions of respondents on the work of emergency service work.

Data Collection

Preparation for data collection

1. Request for the permission from the Dirrectors of Bangkok Christian Hospital and Saint Louis Hospital to collect data the independent study.

2. Request for the permission from the Head of the Nursing Unit for collecting data in the Emergency Department.

3. Coordinate with the Head of the Emergency Department to set up the time for data collection.

4. Preparation of the researcher and assistants by providing knowledge and understanding on the data collection, objectives and data collection.

5. Prepare supports for data collection.
6. Prepare the working system for data collection.

Phase 1: Pre-test

1. Collecting data on emergency service activities using the data collection forms by the researcher for 7 days

2. Collecting the data on satisfaction of relevant people, namely, administrators and service providers by using the 1st and 2nd sets of the questionnaire. The data is collected by the researcher

3. Collecting the data on satisfaction of service recipients using the 3rd set of the questionnaire. The data is collected after the recipients receive emergency services and collected by the research assistants for 7 days.

Phase 2: Implementation

Data is collected by inspecting the emergency service work, observing asking and checking the meeting minutes and memoandum of the Quality Development Committee throughout the implementation phase of the emergency service working model.

Phase 3: Post-test

The data collection is the same as for the pre-test phase.

Checking correctness and completeness of the data before analysis

1. Checking the completeness of answers in the record forms and questionnaires at the site to avoid errors.

2. Coding the checked data, in the computer as well as checking correctness of the data at each step before saving the data into diskettes.

Data Analysis

1. The result of developing a working model for emergency is analyzed descriptively on the appropriateness of the principle, structure and implementation of the model.

2. Testing the distribution of the data on the result of implementing the emergency service work in the experimental and control areas by using Kolmogorov Smirnov Test.

3. Comparing the pre-test result of implementing the emergency service work in the experimental and control areas by using the independent t-test for the data with normal curve of distribution or Mann Withney U test for the data without normal distribution curve.

4. Comparing the pre-test and post-test result of the emergency service implementation in the experimental area by using the independent t-test for the data with normal curve of distribution or Mann Withney U test for the data without normal distribution curve.

5. Comparing the pre-test and post-test result of implementing the emergency service work in the control areas by using the independent t-test for the data with normal curve of distribution or Mann Withney U test for the data without normal distribution curve.

6. Comparing the pre-test scores of satisfaction of people involving in implementing the emergency service work between the experimental and control areas by using the independent t-test for the data with normal curve of distribution or Mann Withney U test for the data without normal distribution curve.

7. Comparing the pre-test and post-test scores of satisfaction of people involving in implementing the emergency service work in the experimental area by using the independent t-test for the data with normal curve of distribution or Mann Withney U test for the data without normal distribution curve.

CHAPTER 4
RESEARCH RESULTS

The results of the study on the development of nursing service model and its implementation at Bangkok Christain Hospital, could be divided into 2 parts, as follows:

Part 1 Results of the development of the emergency service model.

Part 2 Comparative results between before and after implementation of the new working model.

Part 1 Results of the development of the emergency service model

There were 3 main steps of development of the emergency service model at the Bangkok Christian Hospital, as follows:

Main step 1 Development of a preliminary model or Model 1

Main step 2 Development of the working model between the implementation or Model 2

Main step 3 Finalize the working model

Main step 1 Development of a preliminary model or Model 1

There were 2 steps, as follows:

1.1 Analysis of the status of emergency service work at Bangkok Christian Hospital.

The researcher had analysed the status of the emergency service work at Bangkok Christian Hospital, during the past year though documents, observation and interview of people concerned. It was found that the quality of the work was not good, particularly in terms of technical correctness, completion of the

services, rapidity, coordination between departments, and satisfaction of service recipients, providers, and administration. These were:

1.1.1 Nature of the work

Emergency service needs to be performed urgently for patients with urgent sickness or injuries. If the patients do not receive prompt treatment, then may be in risk of death or disability. The service cannot done by one staff but needs cooperative performance.

1.1.2 Working system

1.1.2.1 The working system was not clear separated with OPD

1.1.2.2 Lacked of coordination among staff in and between department.

1.1.2.3 Lacked of continuously evaluation

1.1.2.4 Lacked of a written working manual.

1.1.2.5 Lacked of effective planning

1.1.3 Personnel

1.1.3.1 High-level administrator had a policy to develop the Emergency Department to have good service and technical quality.

1.1.3.2 Service providers had varied abilities and skills resulted from rotation policy.

1.1.3.3 Some service providers did not have appropriate working behaviors, eg. speaking, providing information.

1.1.3.4 Service recipients had very high expectation on the emergency service both in quality and rapidity of services than in the past.

1.1.4 Materials and supplies

The readiness of this department was in types of essential materials and supplies. However, some supplies were not frequently used but become damages and unusable when needed, despited the maintenance effort.

1.1.5 Time

Since the department was open for 24 hours, There was a large number of patients, both walked in and referred, receiving service at the

department, particularly on the holidays. Consequently there was time limitation for each patient so some patients were not get completed treatment.

1.1.6 Environmental condition

Since the department was located on the ground floor of the building, Though the department had tied to provide space that will accommodate the patients more comfortably, the problem of space still exists when there were many patients visiting the department and supplies service department stay far from the emergency service

1.2 Development of a preliminary model or model 1

The researcher had used the technical principle of the emergency service, service principle, regulation, rules, and instruction to develop the preliminary working model. The model emphasized on the use of resources for optimum benefits. The model was collaboratively developed by the head of the Emergency Department, service providers at the department, personnel from concerned departments and the research. The important details of the preliminary model were:

1.2.1 Setting up the location, material, supplies. Personnel and working structure with the emphasis on the use of resources for optimum results.

1.2.2 Setting up clear working guidelines for emergency service which focus on service, as well as developing a guidelines for staff in the department

1.2.3 Setting up rotation of service in the Emergency Department starting from shift preparedness, preparedness before patients receiving services, reception, screening, medical record, giving patient card as soon as a patient arrives, additional diagnosis, procedures after the patient has left, and procedure before ending a shift work.

1.2.4 Following up the work on emergency service continually.

1.2.5 Completion of service, service provided before a patient leaves the department.

Main step 2 Development of the working model between the implementation or Model 2

2.1 Preparedness

2.1.1 Place: setting up area under responsibility of staff based on assignment in each shift.

2.1.2 Personnel: adding the assignment record in each shift, setting up job description each duty, and examined by head of each shift.

2.1.3 Materials and supplies: adding equipment to complete as listed, changing a method of checking term of characteristic and number in each van form recording in the forms located in each van to recording the number in the logbook.

2.1.4 Document: changing the form for checking readiness of document in term of characteristic, number and time for checking in order to make it relevant to the disburstment of supplies.

2.2 Setting up clear working guidelines for screening patients which focus on service, as well as developing a guidelines for staff in the department

2.3 Setting up clear working guidelines for continuously take care themselves when stay at home.

2.4 Develop average waiting time see the doctor.

Main step 3 Finalize the working model

After 3 month trial of the model, the research used the information found during the trial to finalize the model to become more suitable for the research area. The finalization has following processes:

1. Setting up a service rotation plan of the emergency service work.
2. Emphasized on preparedness in terms of place, personnel, supplies and documentation before working in each shift and before finishing the shift.
3. Identified guideline of job description staff in the department
4. Identified guideline for receiving and screening patients.

5. Emphasized on correctness and completion of the emergency service provided to patients when they were at department.

6. Checking the treatment activities after completing the service, in terms of correctness, completion of procedures.

7. Setting up clear working guidelines for continuously take care themselves when stay at home.

Summary different between new working model and former model were following:

1. Setting up clearly flowchart service process for new staff learning.

2. Emphasized on preparedness in terms of place, personnel, supplies and documentation before working in each shift and before finishing the shift.

3. Identified guideline of job description staff continuos following.

4. Setting up clear working guidelines for continuously took care themselves when stayed at home.

Part 2 Comparative Results between the Experimental and Control Groups

The researcher had compared the results in 5 parts as follows:

1. Comparison of general characteristics of the experimental and control groups

2. Comparison of implementation results of the experimental and control groups before implementing the new working model

3. Comparison of the implementation results between before and after experimentation of the new working model in the control groups

4. Comparison of the implementation results between before and after experimentation of the new working model in experimental groups

5. Result of emergency service work at Bangkok Christian Hospital post experimentation follow model 2

The researcher had collected information as follows:

1. Comparison of general characteristics between the experimental and control groups before implementation

Table 1 Comparison of general characteristics between the experimental and control groups before implementation

General characteristics	Experimental Group	Control Group
1. Location	124 Silom Road Bangluk Bangkok	215 South of Sathron Road Bangkok
2. Size	300 beds	500 beds
3. Type	Not-for-profit private hospital in Church of Christ	Not-for-profit private hospital in Romam Catolic
4. Manpower of Emergency Department	- 17 Professional nurses - 10 Nurse aids (working in 2 parts) Total 27 staff	- 16 Professional nurses - 9 Nurse aids Total 25 staff
5. Staff of each shift		
5.1 Night shift	- 1 Doctor - 2 Professional nurses - 2 Nurse aids	- 1 Doctor - 2 Professional nurses - 2 Nurse aids
5.2 Afternoon shift	- 1 Doctor after 8.00 pm. - 5-6 Professional nurses - 4-5 Nurse aids	- 1-3 Doctors - 5 Professional nurses - 4 Nurse aids

Table 1 Comparison of general characteristics between the experimental and control groups before implementation (Cont.)

General characteristics	Experimental Group	Control Group
5.3 Morning shift working day and Holiday	- 1 Doctor stand by - 5 Professional nurses - 1 Nurse aids	- 2 Doctors - 4 Professional nurses - 3 Nurse aids
6. Medical supplies	- Defibrillator - O2 pipe line - Suction - EKG monitor - Blood sugar test kit - Hg. sphygmomanometer - Ambumatic's respirator	The same
7. Emergency service system	Emergency Service Dept. Patients Reception ↓ Emergency service ↓ Follow medical record ↓ Provide service based on medical treatment plan ↓ Giving information / advice to recipients ↓ Discharge	The same

Table 1 Comparison of general characteristics between the experimental and control groups before implementation (Cont.)

General characteristics	Experimental Group	Control Group
8. Service recipients	75 patients / day in average: - Emergency patients - Urgent patients - Non urgent	95 patients / day in average: - Emergency patients - Urgent patients - Non urgent
9. Other characteristics of emergency service	- Emergency room not separated from OPD utilazation personnel together	- Identify clear Emergency room
	- Doctors had stand by on call	- Doctors had stand by on time 24 hours
	- Development followed guidelines provided by the Institute of Hospital Quality & Accreditation for quality improvement	- Getting accreditation with the Instutue of Hospital Quality Improvement & Accreditation
	- When ambulance working needs Professional nurses stand by on time	- Professional nurses stand by special emergency cases, normality cases give nurse aids stand by

It was found that the manpower of the Emergency Department of the experimental group had more nurse aids than control group . But the Emergency Department of the experimental group had not doctor stand by on time. For the number of service recipients, the experimental group had less number of patients per day.

Table 2 Comparison of general characteristics between the experimental group and control group after implementation

General characteristics	Experimental Group	Control Group
1. Manpower of Emergency Department	- 25 Professional nurses - 10 Nurse aids (working in 2 parts) Total 35 staff	- 16 Professional nurses - 9 Nurse aids Total 25 staff
2. Staff of each shift		
2.1 Night shift	- 1 doctor - 3 Professional nurses - 2 Nurse aids	- 1 doctor - 2 Professional nurses - 2 Nurse aids
2.2 Afternoon shift	- 1 Doctor after 8.00 pm. - 5-6 Professional nurses - 4-5 Nurse aids	- 1-3 Doctors - 5 Professional nurses - 4 Nurse aids
2.3 Morning shift working day and Holiday	- 1 Doctor stand by - 7 Professional nurses - 1 Nurse aids (Professional nurses working in 2 parts)	- 2 Doctors on time - 4 Professional nurses - 3 Nurse aids

It was found that the manpower of the Emergency Department of the experimental group had more professional nurses than the control group on night and day shift, but activity 2 departments. The Emergency Department of the experimental group had not doctor stand by on time.

Special Events of the Experimental Group

Table 3 Special Events before the Experimental phase in the experimental group

Date /Month/Year	Activities/Events	Model Effect	Operation/Results
February 2004	Set up specific committee to give opinions on the development of emergency nursing services.	Positive effect towards the model	The researcher took the opportunity to explain the model and encouraged the officers to have the interest and took part in giving the opinions for the development of the model before applying the model in the operation
February 11, 2004	Announced the procedure when there are child patients after 9:00 p.m.	Positive effect towards the model	The researcher took the opportunity to explain and encourage the officers who realized the importance of having clear performance directions and the performance were correct. The officers were confident and had will power to do the work continuously.

Table 3 Special Events before the Experimental phase in the experimental group (Cont.)

Date /Month/Year	Activities/Events	Model Effect	Operation/Results
March 1, 2004	Announced the adjustment of the fee rate when the doctor on duty had to work over time.	Positive effect towards the model	The researcher took the opportunity to explain and encourage the officers who realized the importance of clear direction for the performance that it decreased the period of time in coordinating with the accounting and finance section. As result, the quality of services is better.
March 2004	1 nurse took a leave for laboring.	Negative effect towards the model because nurses took more turns to perform the duties. As a result, they were exhausted and tired.	The researcher didn't changed, Give it following the natural working.

Table 3 Special Events before the Experimental phase in the experimental group (Cont.)

Date/ Month/Year	Activities/Events	Model Effect	Operation/Results
March – April 2004	1 nurse did not received her salary.	Negative effect towards the model because nurses took more turns to perform the duties. As a result, they were tired.	The researcher didn't changed, Give it following the natural working.
March 16, 2004	The announcement of the handbook on Watching for the Prevention of Falling Down.	Positive effect towards the model	The researcher took the opportunity to explain and motivate the officers to realize the importance of correct ways in performing their duties with confidence and will power so that they will be more active in self development.
March 19, 2004	The announcement on using the standing order in emergency patients with bleeding.	Positive effect towards the model	The researcher took the opportunity to motivate the officers to see the clear performance quickly and correctly. Accordingly they were confident and willing to

Table 4 Special Events during the Experimental phase in the experimental group

Date/ Month/Year	Activities/Events	Model Effect	Operation/Results
			perform and utilize the data towards the activeness in more development.
April 1, 2004	There were 7 new nurse on training.	Negative effect towards the model	The researcher and the organization must provide training before new personnel start working because did not had experience in providing patient services. The lack of performance skills of individuals causes the waste of time in giving services.
May 2004	There is CQI of the organization on "Giving Information during the waiting time for examination.	Positive effect towards the model	The researcher took the opportunity to combine to help the officers who had more ideas in development. The officers could share ideas and determined the clear written performances.

Table 4 Special Events during the Experiment phase in the experimental group(Cont.)

Date/ Month/Year	Activities/Events	Model Effect	Operation/Results
June 2004	The hospital send 6 officers to have the training on "The Development of Accident and Emergence patients of Medical Registration Division Dep. Of Health service support Min. of Public Health	Positive effect towards the model because be alert to develop and propose ideas in more work development.	The researcher also encourages for the more cooperation in job development.

* There were no special events effecting the operation according to the model after the experiment.

Special events of the Control Group

Table 5 Special Events of the Control Group before the Experimental phase

Date/ Month/Year	Activities/Events	Model Effect	Operation/Results
March 2004	2 nurses taking a leave for education.	Negative effect towards the model because more turns in performances which made them too tired	The researcher didn't changed, Give it following the natural working.

Table 5 Special Events of the Control Group before the Experimental phase (Cont.).

Date/ Month/Year	Activities/Events	Model Effect	Operation/Results
March 2004	1 nurse took a leave for laboring.	Negative effect towards to model because more turns in performances which made them too tired	The researcher didn't changed, Give it following the natuaral working.
March 2004	There were new nurses on training.	Negative effect towards the model because the new personnel did not have experiences in providing patient services.	The researcher and organization must set up the training and orientation before starting the job.
May 2004	There were two new nurses on training.	Negative effect towards the model because the new personnel did not have experiences in providing patient services.	The organization must set up the training and orientation before starting the job.

Table 5 Special Events of the Controlled Group before the Experimental phase (Cont.).

Date/ Month/Year	Activities/Events	Model Effect	Operation/Results
March 2004	Changed the leader of the sector	Positive effect towards the model because motivating several ideas in development to get along with the development of the job.	The researcher didn't changed, Gave it following the natural working.

* There was no special events effecting the operation model during and after the experimentation phase.

2. Comparison of implementation results of the experimental and control groups before implementing the new working model

The researcher compared 4 aspects of implementation between the experimental and control groups before implementing the new working model, as followed:

2.1 Quantity of work

2.2 Quality of work

2.3 Time

2.4 Satisfaction

2.1 Quantity of work

Table 6 Comparison of number of emergency and accidental patients between the experimental and control groups before implementation of the new working model, classified by the indicators (paired t test)

Indicators for implementation results	Experimental Group N=21 shifts		Control Group N=21 shifts		t	p-value
	$\overline{X}$	S.D.	$\overline{X}$	S.D.		
1. Number of patients per 1 service provider						
1.1 Doctor	4.76	1.48	2.86	0.83	1.119	0.228
1.2 Nurse	1.19	1.45	1.56	1.25	0.088	0.849
1.3 Nurse aid	2.04	1.28	1.90	0.84	0.091	0.847
2. Number of patients per 1,000 man-minute service provider (patient/1000 man-min.)	12.78	2.67	11.80	2.65	1.194	0.215

The analytical result shown no different between the experimental and control groups in terms of number of patients per 1 service provider and number of patients per labour-force of service provider (patient/1000 man/min.) before implementation of the new working model.(α = 0 .05)

2.2 Quality of work

Table 7 Comparison of the quality of emergency service between the experimental and control groups before implementation of the new working model, classified by the indicators (paired t test)

Indicators for implementation results	Experimental Group N=21 shifts		Control Group N=21 shifts		t	p-value
	$\overline{X}$	S.D.	$\overline{X}$	S.D.		
1. Correctness rate of shift preparation before implementing the work (%)						
1.1 Place	95.23	21.82	100	0.00	1.001	0.317
1.2 Personnel	81.00	40.24	100	0.00	4.463	< 0.001*
1.3 Materials, supplies	90.47	30.08	92.23	21.82	0.587	0.555
1.4 Document	85.71	35.86	97.61	10.91	1.303	0.200
2. Correctness rate of service before a patient leaves(%)	81.00	40.28	95.23	21.82		
3. Complication rate occurred to a patient during providing service (%)	0.00	0.00 [a]	0.00	0.00 [a]	1.423	0.169

[a] t cannot be computed because the standard deviations of both groups are 0

The analytical result shown that the control group had better average correctness rate for shift preparedness in terms of personnel than the experimental group with statistical significance ($p < 0.001$). However, the average correctness rate in shift preparedness in terms of place, materials, supplies and document; average correctness rate of service before a patient leaves and average complication rate occurred to a patient during providing service were not different. ($\alpha = 0 .05$)

2.3 Time

Table 8 Comparison of service time from walk-in until seeing a doctor between the experimental and control groups before implementation of the new working model, classified by types of patients (Mann Withney U Test and t-test)

Time for providing service by type of patients (minutes)	Experiment group			Control group			t	p-value
	N	$\overline{X}$	S. D.	N	$\overline{X}$	S. D.		
1. Emergent patients	5	5.00	2.24	4	2.50	1.29	1.715	0.080
2. Urgent patients	37	13.16	5.29	39	4.94	1.82	9.152	< 0.001*
3. Non-urgent patients	58	18.60	6.84	77	12.70	4.78	5.898	< 0.001*
Total	100	15.91	7.09	120	9.98	5.43	6.854	< 0.001*

The analytical result shown that the control group had less average time for urgent patients and non-urgent patients from walk-in until seeing a doctor than experimental group with statistical significance ($p < 0.001$). However, service time for emergent patients was not different. ($\alpha = 0.05$)

2.4 Satisfaction

Table 9 Comparison of level of satisfaction of people involved in emergency service between the experimental and control groups before implementation of the new working model, classified by the people involved (Mann Withney U Test and t-test)

Relevant people	Experiment group			Control group			t	p-value
	N	$\overline{X}$	S. D.	N	$\overline{X}$	S. D.		
1. Administrator (score)	30	5.6	0.92	16	7.8	1.11	7.186	< 0.001*
2. Service providers								
2.1 Night shift (score)	28	7.4	0.87	28	8.3	0.81	3.470	0.001*
2.2 Afternoon shift (score)	42	6.9	0.92	56	8.6	0.92	7.811	< 0.001*
2.3 Morning shift (score)	20	7.6	0.59	49	8.5	0.64	3.354	0.001*
Total	90	7.2	0.87	133	8.9	0.92	9.516	< 0.001*
3. Service recipients (score)								
3.1 Emergent patients (score)	5	7.2	0.45	4	8.3	0.50	0.788	0.354
3.2 Urgent patients (score)	37	7.6	0.93	39	8.5	0.72	4.942	< 0.001*
3.3 Non-urgent patients (score)	58	7.5	0.69	77	9.3	0.85	12.889	< 0.001*
Total	100	7.6	0.79	120	8.9	0.89	4.595	< 0.001*

The analytical result shown that the control group had better average level of satisfaction of administrators than the experimental group before implementation of the new working model with significance ($p < 0.001$). For average level of satisfaction of service providers in the control group before implementation of the new working model was better for night shift, afternoon shift and day shift than the experimental group with significance ($p < 0.001$). For average level of satisfaction of service recipients on emergency service before implementation of the new working model, it was found higher in the control group than the experimental group with

significance for urgent patients and non-urgent patients ($p < 0.001$) while not different for emergent patients. ($\alpha = 0\ .05$)

3. Comparison of the implementation results between before and after experimentation of the new working model in the control group

The researcher compared 5 aspects of implementation results in the control groups between before and after experimenting the new working model, as follows:

3.1 Quantity of work

3.2 Quality of work

3.3 Time

3.4 Satisfaction

3.5 Benefit

3.1 Quantity of work

Table 10 Comparison of number of patients in the Emergency Department between before and after implementation of the new working model in the control group, classified by the indicators (paired t test)

Indicators for implementation results	Pre-experimental N=21 shifts		Post-experiment N=21 shifts		t	p-value
	$\overline{X}$	S.D.	$\overline{X}$	S.D.		
1. Number of patients per 1 service provider						
1.1 Doctor	2.86	0.83	2.57	0.84	-0.245	0.756
1.2 Nurse	1.56	1.28	1.40	1.27	-0.088	0.848
1.3 Nurse aid	1.90	0.84	1.17	0.84	-0.615	0.538
2. Number of patients per man-minute service provider (patient/1000 man-min.)	11.80	2.65	11.05	4.65	-0.642	0.428

The analytical result shown no different in the rate of number of patients per 1 service provider and rate of number of patients per labour force of service provider (patient/1000 man-min.) before and after implementation of the new working model in the control group.

3.2 Quality of work

Table 11 Comparison of the emergency service quality between before and after implementation of the new working model in the control group, classified by the indicators. (analysis with paired t test)

Indicators for implementation results	Pre-experimental N=21 shifts		Post-experiment N=21 shifts		t	p-value
	$\overline{X}$	S.D.	$\overline{X}$	S.D.		
1. Correctness rate of shift preparation before implementing the work (%)						
1. Place	100	0.00	100	0.00	-0.044	0.875
2. Personnel	100	0.00	100	0.00	-1.311	0.188
3. Materials, supplies	95.23	21.82	96.19	0.18	-1.000	0.317
4. Document	97.61	10.91	99.04	0.04		
2. Correctness rate of service before a patient leaves (%)	95.24	21.82	100.00	0.00		
3. Complication rate occurred to a patient during providing service (%)	0.00	0.00 [a]	0.00	0.00 [a]		

[a] t cannot be computed because the standard deviations of both groups are 0)

The analytical result found that service quality of the control group in terms of average correctness rate of shift preparedness for place, materials, supplies and documents; average correctness rate of service before a patient leaves and average complication rate occurred to a patient during providing service were not

different between before and after implementation of the new working model in the control group.

3.3 Time

Table 12 Comparison of service time from walk-in until seeing a doctor between before and after implementation of the working model in the control group, classified by types of patients (Mann Withney U Test and t-test)

Time for providing service by type of patients (minutes)	Pre-experiment			Post-experiment			t	p-value
	N	$\overline{X}$	S. D.	N	$\overline{X}$	S. D.		
1. Emergent patients	4	2.50	1.29	2	1.75	0.35	-0.537	0.602
2. Urgent patients	39	4.94	1.82	34	4.97	1.93	0.068	0.861
3. Non-urgent patients	77	12.70	4.78	72	12.63	4.89	-0.088	0.851
Total	120	9.98	5.43	108	10.01	5.51	0.041	0.879

The analytical result shown that average time for emergent patients, urgent patients and non-urgent patients from walk-in until seeing a doctor were not different between before and after implementation of the working model in the control group. ($\alpha = 0\ .05$).

3.4 Satisfaction

Table 13 Comparison of level of satisfaction among people involved in emergency service between before and after implementation of the new working model in the control group, classified by the people involved (Mann Withney U Test and t-test)

Relevant people	Experiment group			Control group			t	p-value
	N	$\overline{X}$	S. D.	N	$\overline{X}$	S. D.		
1. Administrator (score)	16	7.8	1.11	10	8.0	0.66	0.514	0.212
2. Service providers								
2.1 Night shift (score)	28	8.1	0.77	25	8.3	0.60	1.060	0.162
2.2 Afternoon shift (score)	56	8.5	0.78	60	8.4	0.49	-0.820	0.327
2.3 Morning shift (score)	49	8.6	0.67	45	8.7	0.47	0.843	0.321
Total	133	8.4	0.75	130	8.5	0.53	1.250	0.209
3. Service recipients (score)								
3.1 Emergent patients (score)	4	8.3	0.50	2	8.5	0.70	0.463	0.212
3.2 Urgent patients (score)	39	8.5	0.72	34	8.4	0.65	-0.619	0.589
3.3 Non-urgent patients (score)	77	9.2	0.85	72	8.9	0.75	-2.278	0.015
Total	120	8.9	0.89	108	8.7	0.83	-2.458	0.017

The analytical results shown that average satisfaction levels of administrations between before and after implementation of the new working model in the control group were no different. The average satisfaction levels of night shift, morning shift and afternoon shift service providers, average satisfaction levels of service recipients, satisfaction level of urgent patients and emergency patients were also not different, while satisfaction level of non-urgent patients after implementation of the new working model had better before implementation of the new working model. ($\alpha = 0\ .05$)

3.5 Benefit

The control groups had 2 new professional nurses and 2 nurse aids, so that have spend for wage about 30,000 a month.

4. Comparison of the implementation results between before and after experimentation of the new working model in the experimental groups

The researcher compared 5 aspects of implementation results in the experimental group between before and after implementing the new working model, as follows:

4.1 Quantity of work

4.2 Quality of work

4.3 Time

4.4 Satisfaction

4.5 Benefit

4.1 Quantity of work

Table 14 Comparison of number of patients in the Emergency Department between before and after implementation of the new working model in the experimental group, classified by performance indicators (paired t-test)

Indicators for implementation results	Pre-experimental N=21 shifts		Post-experiment N=21 shifts		t	p-value
	$\overline{X}$	S.D.	$\overline{X}$	S.D.		
1. Number of patients per 1 service provider						
1.1 Doctor	4.76	1.48	6.67	1.92	0.788	0.437
1.2 Nurse	1.19	1.45	0.82	0.97	-0.212	0.776
1.3 Nurse aid	2.04	1.28	1.63	1.27	-0.227	0.767
2. Number of patients per man-minute service provider (patient/1000 man-min.)	12.78	2.67	14.60	3.89	1.767	0.062

The analytical result shown not different in the rate of number of patients per 1 service provider, while rate of number of patients per man-minute service provider (patient/1000 man-min.) after implementation of the new working model more higher than before implementation of the new working model in the experimental group (p = 0.062).

4.2 Quality of work

Table 15 Comparison of the emergency service quality between before and after implementation of the new working model in the experimental group, classified by the indicators. (paired t-test)

Indicators for implementation results	Pre-experimental N=21 shifts		Post-experiment N=21 shifts		t	p-value
	$\overline{X}$	S.D.	$\overline{X}$	S.D.		
1. Correctness rate of shift preparation before implementing the work (%)						
1. Place	95.23	21.82	95.71	19.64	0.423	0.652
2. Personnel	81.00	40.28	100	0.00	4.463	< 0.001*
3. Materials, supplies	90.47	30.08	97.62	10.91	1.342	0.189
4. Document	85.71	35.86	95.71	19.64	1.121	0.280
2. Correctness rate of service before a patient leaves (%)	81.00	40.28	95.23	21.82	1.455	0.140
3. Complication rate occurred to a patient during providing service (%)	0.00	0.00[a]	0.00	0.00[a]		

[a] t cannot be computed because the standard deviations of both groups are 0

The analytical result found that service quality of the experimental group after implementation of the new working model has better average correctness rate for shift preparedness in terms of personnel than before

implementation of the new working model with statistical significance ($p < 0.001$). However, the average correctness rate of shift preparedness in terms of place, materials, supplies and documents; average correctness rate of service before a patient leaves and average complication rate occurred to a patient during providing service were not different between before and after implementation of the new working model in the experimental group.

4.3 Time

Table 16 Comparison of service time from walk-in until seeing a doctor between before and after implementation of the new working model in the experimental group, classified by types of patients (Mann Withney U Test and t-test)

Type of patients (minutes)	Pre-experiment			Post-experiment			t	p-value
	N	$\overline{X}$	S. D.	N	$\overline{X}$	S. D.		
1. Emergent patients	5	5.00	2.24	4	4.8	1.92	-0.144	0.806
2. Urgent patients	37	13.16	5.29	33	7.9	2.01	-8.580	< 0.001*
Total Emergent and Urgent patients	42	12.71	5.33	37	7.6	5.38	-5.679	0.431
3. Non-urgent patients	58	18.60	6.84	43	17.6	5.38	-0.794	0.002
Total	100	16.13	6.87	80	12.98	6.53	-3.142	

The analytical result shown that average time for emergent patients, and non-urgent patients from walk-in until seeing a doctor were not different between before and after implementation of the working model in the experimental group. For the average time for urgent patients after implementation of the working model had better waiting time than before implementation of the working model with statistical significance ($p <0.001$). However analysis in total had after implementation of the working model had better waiting time than before implementation of the working model with statistical significance ($p = 0.002$)

4.4 Satisfaction

Table 17 Comparison of level of satisfaction among people involved in emergency service between before and after implementation of the new working model in the experimental group, classified by the people involved (Mann Withney U Test and t-test)

Relevant people	Pre-experiment			Post-experiment			t	p-value
	N	$\overline{X}$	S. D.	N	$\overline{X}$	S. D.		
1. Administrator (score)	30	5.6	0.92	16	6.8	.41	7.366	< 0.001*
2. Service providers								
2.1 Night shift (score)	28	7.4	0.87	30	7.8	0.67	1.969	0.002
2.2 Afternoon shift (score)	42	6.9	0.92	43	7.5	0.85	3.124	0.006
2.3 Morning shift (score)	20	7.6	0.87	100	7.7	0.78	2.736	< 0.001
Total	90	7.2	0.87	100	7.7	0.78	4.266	0.106
3. Service recipients (score)								
3.1 Emergent patients (score)	5	7.2	0.45	4	7.6	0.48	1.225	0.106
3.2 Urgent patients (score)	37	7.6	0.93	33	8.2	0.64	5.222	< 0.001*
3.3 Non-urgent patients (score)								
Total								

The analytical result shown that after implementation of the new working model in the experimental group had better average level of satisfaction of administrators than before implementation of the new working model with significance ($p < 0.001$). For average level of satisfaction of service providers in the experimental group after implementation of the new working model was better for night shift, afternoon shift and day shift than before implementation of the new working model with significance ($p = 0.05$, $p = 0.002$ and $p = 0.006$). However average level of satisfaction of service recipients on emergency service after implementation of the new working model, it was found higher before than after

implementation of the new working model for urgent patients and non-urgent patients with significance ($p< 0.001$ and $p= 0.018$) while not different for emergent patients. ($\alpha = 0 .05$)

4.5 Benefit

The experimental group had 6 new professional nurses, so that have spend for wage about 59,000 a month.

The utilization term of people, while they didn't had patients; they help working in The Out Patients Department for example injection dressing EKG analytical about 2,000-3,000 bath / month.

5. Implementation result of the emergency nursing service, Bangkok Christain Hospital

The implementation results of the new working model were better than the existing model, as shown in the table 18:

Table 18 Conclusion of the implementation results of the new working model classified by research hypothesis

	Research Hypothesis	Result	Prove	Reference Table
1.	Rate of emergency patients per 1 service provider is increased.	No change	Reject	14
2.	Rate of number of patients per labour-force of service provider (patient/1000man-min.) is decreased.	Increased	Reject	14
3.	Correctness rate of preparation before working in each shift is increased.			
	3.1 Place	No change	Reject	15
	3.2 Personnel	Increased	Accept	15

Table 18 Conclusion of the implementation results of the new working model classified by research hypothesis (Cont.)

Research Hypothesis	Result	Prove	Reference Table
3.3 Material, supplies	No change	Reject	15
3.4 Documents	No change	Reject	15
4. Correctness rate of service before patients leaving from Emergency Department is increased.	No change	Reject	15
5. Complication rate occurred as results of emergency service or treatment is decreased.	No change	Reject	15
6. Average time from walk-in until seeing a doctor is decreased.			
6.1 Emergent patients	No change	Reject	16
6.2 Urgent patients	decreased	Accept	16
6.3 Non-urgent patients	No change	Reject	16
7. Average level of satisfaction is increased.			
7.1 Administrator	Increased	Accept	17
7.2 Service providers			
- Night shift	Increased	Accept	17
- Afternoon shift	Increased	Accept	17
- Morning shift	Increased	Accept	17
7.3 Service recipients			
- Emergency patients	Increased	Accept	17
- Urgent patients	Increased	Accept	17
- Non-urgent patients	No change	Reject	17
8. Benefit is increased.	No change	Reject	Issue 4.5

CHAPTER 5
DISCUSSION

For the research on the Development of Emergency Nursing Service in Bangkok Christian Hospital, the researcher would like to organize the discussion into 3 issues as follows:

1. The results of the development of emergency nursing service in Bangkok Christian Hospital.
2. The results of the operation according to the new model of emergency nursing service in each aspect.
3. The development of operational model of emergency nursing service in Bangkok Christian Hospital.

1. The results of the development of emergency nursing service in Bangkok Christian hospital

The results of the operational service for the patients with accidents and emergency according to the new model were better than the former model because within 3 month of applying the new model, there were 7 items of better operation, 10 items of no changes and 2 items of operation (shown in Table 18). The discussion can be stated as the following:

For the better part, there were the rates of preparation before the beginning of the job on personnel was increased ($p < 0.001$). The average time in providing emergency nursing service since entering emergency room until meeting the doctors, the average waiting time was decreased ($p < 0.001$) in table 16. The satisfactory level of the people involved in the operation of emergency nursing service classified by types of related people was increased. For instance the level of administrators' satisfaction was increased ($p < 0.001$). The level of satisfaction of the

service providers in the group of emergency patients was increased ($p < 0.001$), table 17. It was the result from applying the new models, which were good and appropriate with the experimental area. In practice, the researcher used the administrative process with the participation of the performers together with the new development model in the operation.

The preparation of team workers and the performers was for the understanding, the model acceptance, and model performance with willingness and happiness. It was to reduce the resistance of the changes. It was the nature of human. This agreed with the ideas of Somchart Torugsa (2001: 17). He said that the people who involved should participate in planning so that the plan would cover everything and decreased the resistance. Thonglaw Detthai (2002: 259) also mentioned that the change management could make the balance which depended on the effectiveness in exchanging knowledge and experiences to each other in working together. That could help working more effective. Somyot Naweeekarn (2002: 178) mentioned that the situational administration was to use the administration theories appropriately in different situations. When everyone had the participation, it gave positive will power and satisfaction. They could work effectively and successfully. Such ideas agreed with the ideas of Somchart Kitbanyong (2002: 16). He said that team building and team working gave good results and good feeling among each other and formed the unity in organizational development. This idea was similar to Sanaw Tiyaow (2001: 95). Sanaw mentioned that the participation of the employees in all levels created good work planning and the performance could be quickly successful. Rawang Netpoekaew also had similar ideas (1999: 46). He said that the administration which was operated under the some goal between the commanders and the subordinators to determine the scope and responsibilities on the job needed to be achieved. The goal of the organization was considered as the directions to determine the goal of the performance Thongchai Santiwong had the similar ideas (1996: 366). He stated that everything on this world is uncertain. It can be changed. It is very common. Therefore, everyone should not be careless for any situations. There was the preparation all the time including the related people to decrease the resistance of for the changes.

The outcome that had no changes were the rate of patients per the rate of service provider, the rate of the correct preparation of the turn before performing the task on document, place, and materials, the rate of the correct patient services before leaving the organizations, the rate of patient complexity from the services while staying in the organizations, average waiting time to see the doctors in the group of emergency patients, the average of satisfactory levels towards the operational models in both emergency and non emergency. Because there have been regulation in providing turns but lack of the follow-up and written records for the assessment, the application of new models in the operation, therefore, did not have much effect on the job. Accordingly, the research result had no changes. Moreover, some of the administrator did not understand and did not cooperate as the agreement. As a result, there should be the preparation of the administrators, working team and the related personnel before applying the new models in job development continuously so that it would be beneficial and the most appropriate model for the organization. Somchart Torugsa also had the same ideas (2002: 220). He said that the preparation before applying the new models for the operation, there must be the preparation of the administrators and working teams of the organization for the correct understanding and good attitudes towards effective working team. The administrator should do the situational analysis regularly in order to know the data needed the improvement so that the job would be productive and highly effective. This after solving the problems, the result would be compared with the goal by evaluating from time to time the evaluation should not be done only one time after performing as the plan. Shomchart Torugsa (2000: 96). Also agreed on that idea. He said that the result of the situational analysis would lead to the clear and accurate operation for the administrators and decrease the risk, the waste and undesirable things which could occur that least or would not occur at all. The administrators needed to think and determine the appropriate alternatives from the situational analysis data. When making a decision for the best operation. Charoenpon Suwanchote (1999: 214) agreed with such ideas and stated that the administration based on the situational variables effecting the performers in different time interval. The administrators did not believe that there was no one administrative technique to do the work successfully. Thongchai Santiwong (1996: 162) agreed on the ideas and

said that the administrators needed to investigate the opportunity and the limitations of the organization in order to know the situation and the ways to work relevantly and closely to the real situations. It would be the best way. Somyot Naweekarn (1995: 50) mentioned that the situational administration was the application of administrative theories for different situations appropriately and could help the organization to achieve the most.

The worse operational results were the rate of the patients towards the labour of service providers and the additional expenses in operation. This was because of the less number of the patients during the time of collecting data after the operation as the model and the less number of personnel taking turns in performance and the increased rate in each round especially when the new nurses were on duty for the emergency patients. Both experienced nurses and new nurses had to help taking care of the patients. Accordingly the number of labours in medical care increased. When the were more new personnel, the cost of the salary including the other expenses also increased. Somchart Kitbanyong (2002: 79) agreed with such statement and said that the training and personnel development in real working situation or close to the real working situation were the ways to solve the working problems rapidly and effectively. Thongchai Santiwong (1996: 59) who had the relevant ideas said that the impact from the investment could be closely connected with long strategic planning and affected the first phase of the operation. However, it was quite a problem because there were not the expenses on the cost and wasted resources. It was the cost directly related to the administration and different operational steps.

2. The operational results according to the new models of emergency nursing services on each aspect.

The researcher set the discussion on 5 aspects as follows :

1. Work Quantity
2. Work Quantity
3. The satisfaction of the related personnel

3.1 Administrators' satisfaction

3.2 Service Providers' satisfaction

3.3 Service Receivers' satisfaction

4. Time for providing services

5. Economics

The details for each aspect could be explained below

1. Work Quantity

The operational result on the rate of patients per rate of one service provider had no changes. The rate of patient quantity per the increased service provider also had no changes. It was because the number of service receivers after collecting the operational data according to the model were less while the number of personnel in exchanging the performance rounds in each round increased. It was the period that the new nurses performed the job for the emergency patients. Both experienced nurses and new nurses had to help taking care of the patients. That could cause the medical care labours increased. When considering the care process, it was effective because the people with sickness naturally would worry about their sickness and need life security. Somchart Torugsa (2000: 143) also supported the ideas the same as Somchart Kitbanyong (2002: 79). Both of them stated that training and personnel development on real working situations or close to the real working situations were the quick ways to solve the problem effectively.

2. Work Quality

It was found that the better operational results were on the rate of correct preparation before the performance in the personnel aspect increased ($p < 0.001$). It was because before applying the operational models there were less number of the personnel taking turns to be on duty each round. Some had to be circulated to perform at the OPD, Eye and Surgery. However, in April, the new developmental models were applied there were 6 new nurses and 1 assistant officer including 1 nurse in the late night round. The preparation on personnel was better. The operational results were continuously better and should be continuously improved. Somchart Torugsa (2004: 72) agreed with such ideas and stated that the

promotion and the development for the related personnel to perform systematically so that there would be the continuous and sustainable development basing on the highly effective team working in all levels. Somchart Kitbanyong (2002: 16) also agreed with such ideas and said that team building and team working gave good results and good feeling during the work could be the unity and power in the organizational development. This was similar to Sanaw Tiyaow (2001: 95). He mentioned that the participation of people in all levels cause the good and complete creation and plans which could be used with the people who were related with the plans. They would understand and accept the plans. Then, they could perform as the plans quickly and successfully. Krit Uthairat (2000: 3) agreed with the ideas and stated that quality is essential for the survival of the organization. If the organization had no quality in the performance, had no quality in the performance, services or products, it would not be able to gain sustainable profit.

The operational results on the quality aspect with no changes were the rate of the preparation for each task on each round, the material, durable material, place and document, the rate of correct services before the patients would leave the sector, the rate of side-effect of the patients from providing the services in the sector. There was the determination that the personnel would be ready before starting each round for 15 minutes in order to check all equipment and make sure that there would be sufficient equipment and ready for use through the round. The list of the materials and durable materials in the emergency had to be reviewed to make sure that there were complete materials in each type. The hand book for the investigation was hung near each kind of equipment. There were people who were in charge of checking such equipment by emphasizing that each round had to check and record. There was also the former model of the development which was also developed by the support and promotion from the administrators. Such improvement made the performers active and changed to the better ways all the time. Somchart Torugsa (2004: 71) agreed with these ideas and said that the management with the involvement of everyone to perform according to the working system and the standards, the performers would be very happy while they were performing the job. As a result, the job result would have high efficiency as the determinate goals with the available resources.

3. The satisfaction of the related people

It was found that the better operational results were the satisfactory levels of the administrators and the performers in the morning and afternoon rounds increased. The satisfaction of the service receivers in the morning, afternoon and late night rounds also increased ($p < 0.001$) as shown in Table 17. It could be explained as follows:

The level of the administrators' satisfaction increased because the administrators understood and realized the importance, the promotion and planning participation to determine the model directions. There would be the evaluation until the operation reached the goal. The ideas were relevant to Siriorn Khanthahat (1996: 190) who said that the organizational development was the systematic development based on the principles of behavioral theories joined with the action research. It provided the opportunity for the organizational members taking parts in organizational administration. It could form the pride, love, and good atmosphere in working. There was also the CQI on the giving of the information during the waiting time for the examination of the sector where every member participated and the officers were active to provide more services. Such services affected the service receivers to have higher level of satisfaction system with more models. There was the preparation of readiness, the reduction of complex steps and the addition of enough labours to perform the task at each service spot. These ideas agreed with Somyot Naweekarn (2002: 23) who said that the opportunity provided for the related personnel to receive the information and working techniques to increase the effectiveness and the efficiency in working.

The level of service providers' satisfaction was increased because there was the preparation of the performers before applying the new models in the operation. The performers also took part in considering the problems and the cooperative ways to work. They had opportunity to propose different ideas which made them proud and fond of the organization including good working atmosphere. Somyot Naweekarn (2002: 227) had the relevant ideas and said that working design with happy working techniques and facilities could make the performers proud with the working techniques which they were responsible for. There would be the balance

between the effectiveness and the working satisfaction. Pornnop Pukkapan (2001: 231) had the relevant ideas with such ideas mentioned before and said that the opportunity one had to use the skills and creativity in the organizational operation, one would sacrifice his time for the work. One did the job with his love on the job could be better than the job he did not like. The performers doing their work with facilities could be better then the working situation without any improvement. Thongchai Santiwong (2000: 112) agreed with the above ideas. He said that move working or more products from the satisfaction of the employee could affect the development in both work quality and quantity in the long period because the work would be successful with the quality from one own creativity.

4. Time aspect in providing services

It was found that the results of the operation were better. There were patients with accidents from the emergency room until meeting the doctors in the emergence patient group. The average of the waiting time decreased ($p < 0.001$) as shown in Table 15. That was from the queue improvement and classify the ty6pes of the patients in the case of separating the patients for the doctor's examination without waiting in the queque order. Kornnikar Tantikanokporn (1998: 59) had the relevant ideas. She said that the time management was to get rid of the unimportant activities and conducting the activities to the goal of achievement and values. The administrators gained the benefit form the time management. These ideas were relevant to the Deputy of Public Health Office (1996: 175). It was stated that more time should be provided to the critical patients to decrease the severity and the danger which could occur to lives and treasure of the patients.

5. Economic Aspect

From the operational results, it was found that there were additional cost about 59,000 baht per month when there were more personnel and the changing of the rounds so that there would be officers on duty all 24 hours. By doing that could affect the nursing care system of the patients and caused the worth of human resource management. The officers were able to do different functions. For instance, the officers in the emergency room could help in the out – patient section

dressing the wounds giving the injection and check the heart waves in the X-ray section when there were not patients in the emergency room The help of doing other work could be about 2,000 – 3,000 baht per month.

The ideas were relevant to Thongchai Santiwong (1996: 8). He said that the ability of the administrators in performance could cause the resource utilization for the production or working achievement. For instance there was the effort to coordinate with other people indifferent sections to work together or organizing the working system or improving working techniques. Such activities were focused on saving but getting high products and good quality high products and good quality. When considering the results in the long term, the changing results would not be only within 3 months of the operation but it should be evaluated not less than one year. The ideas ware the some as Yuda Rakthai (2002: 9). She mentioned that the results from solving the problems should be brought to compare with the goal by setting the evaluation time. It should not be done only once after completing the performance. Somchart Torugsa also agreed with this (2000: 222). He stated that the time of the productive and clear operation should not be less than one year so that it could be the complete cycle of the performance and cover all of the factors influencing the performance.

3. The results of operational model development on emergency nursing services at Bangkok Christian hospital

The results from the new operational models were better than the former ones because there were good operational models and appropriate to Bangkok Christian Hospital. The developmental models could be summarized as follows :

1. There was the construction of operational models for the appropriate emergency nursing care with these principles and structure :

1.1 Principles of the models

1.1.1 Administrative Principle were

1.1.1.1 Administrative principles based on POSDCORB

Model. This was the classical model of Luther H Gulick and Lyndall F Urick.

1.1.1.2 Administrative principles by objective of Peter F. Drucker.

1.1.1.3 Administrative principles by situations of Heinz Weihrich and Horold Koontz.

1.1.1.4 Administrative principles by participation of David Hapgood.

1.1.1.5 Administrative principles by committee in democratic system.

1.1.1.6 Administrative principles by Somchart Torugsa with 6 main activities.

1.1.1.7 Principle management and organizational development. It was the organization of administrative structure by determining the functions of the small sectors or different positions in the sectors.

1.1.2 Principles for emergency nursing service

1.1.2.1 Emergency nursing standards according to hospital. standards in the quality development focusing on patient center the edition of the golden jubilee year. The mission, the goal and the objective were clearly written.

1.1.3 Academic principles related to the communication and coordination.

1.2 Model structure

Somchart Torugsa (2000: 218) said that the resources for effective and efficient operation were composed of 4 aspects: man, money, material and system. Somchart Torugsa (2000: 42 – 55) divided the working system into 4 systems such as service system, service support system, service development system and management system. However, the researcher focused on the service development system which is the system having direct interaction with the patients and patient oriented. The service system constructed by the researcher was emphasized on the preparation for the round on personnel, place, material and durable materials and document before the performance. The receiving of the patients is to give good

impression since the first time. The evaluation and screening types of the patients are done properly at the beginning. The express service is provided for the patients who need such care as soon as they get to the emergency room. The services are given in order until completing the individual patient characteristics until the patients will leave the hospital. The operation after the patients leave the hospital and the performance steps are written clearly. The performers take part in giving opinions on the ways of performance which is relevant to the academic concept.

2. The process of applying the appropriate operational models can be divided into 3 phases:

2.1 The preparation before applying the operational model

The researcher analyzed the former model improved and constructed the new models based on the academic concept. The new models were inspected on the structure and the content by the experts. To be checked the appropriateness before operating by the administrator and the performers in the organization. This agreed with Somchart Torugsa (2002: 220). He said that the preparation before applying the operational model needed to prepare the administrators and teams so that they could understand the models thoroughly and correctly.

2.2 There were good operation according to the models, performance as the determinate plan, and providing the written performance handbooks so that the performers could understand and follow the appropriate steps. These were relevant to the ideas of the Deputy of Public Health Office (1999: 2). It was stated that the performance and the operation which covered every point caused the good care or services for the service receivers.

2.3 There were the improvement and development for good models. The development was carried out from time to time with the follow – up and the improvement during the operation. There were also the meetings form time to time so that the problems, obstacle were realized and the quick improvement and correction were found. These agreed with Thongchai Sontiwong (1996: 34). He mentioned that different ways of techniques which would be used in administration had to be appropriate and fit the real situation the most.

For the assessment, there was the clear index according to the steps of emergency nursing care from the beginning until the end of the process. The aspects that were evaluated were the work quantity, work quality, satisfaction, the speed of services and the remuneration. Putsadee Rumakom (1999: 274). She said that all successful job needed to be investigated the results on the quality of the production, the quantity of the production, the punctuality, income and the cost.

In conclusion, the results of the operation of emergency nursing services at Bangkok Christian Hospital with the new models were better than the former models because the new models had the appropriate models. The people who got involved participated in the models. The principles of the administration were used including the specific principles of services for the emergency patients and other related academic concepts. In determinating the ways to perform the applying of the operational models and having the same procedures of performance, they were the factors to realize the values of the performance and made the performers have the love and pride in the sectors. The would be alert to develop the job continuously. These ideas were relevant to Somchart Torugsa (2000: 228). He said that the results of the performance caused the activeness in the performers of the sectors. They would do to develop themselves, develop the jobs and develop the organization holistically. Those could form good image for the organization and love the organization. According to the period of the experiment for 3 months was the short time because at the beginning of the experiment, there was a little resistance. There were many officers taking turns to perform the duty especially new nurses affecting the operational models. The job was preceded slowly and incompletely. The time for the experiment should be not less than 1 year. Such ideas were relevant to Yuda Rakthai (2002: 91). She said that the results from solving the problems had to brought to compare with the goal with the evaluation from time to time. It did not mean that it would be done only once after the performance as the plan Somchart Torugsa (2000: 222) agreed with such ideas. He said that the time of the experiment on the operation should not less than one year so that the result could be seen clearly and completely because it was the complete cycle of performance and covered all factors influenced the performance for the quality evaluation.

CHAPTER 6
CONCLUSION

Background

The accident and emergency sector is the hospital sector which provides nursing care for the wounded patients and sudden sickness at the critical status which needs intensive help. The patients with emergency sickness and crisis in every branch of disease such as stop beating heart, difficult breathing, shock, bleeding, acute abated kidneys.

The job is the immediate nursing care for the patients with acute and severe symptoms. Those patients will be sent to the hospital either individual accidents or groups. It they are not helped at the right time, they may die or easily crippled. If the problems are very severe, they may die within a few second.

The job in the emergency room is very hard work and must be done as quickly as possible to solve the problems for patients' lives. The nursing care provided to maintain parts of the body. After the crisis, the patients will be transferred to the operation room or the critical patient room as quickly as possible. The patients will be taken care of the real problems in order to save the patients' lives. The job that the personnel face is the situation which make them stressed such as the expectation of the service receivers, working environment with unhappy people, the changing of patient relatives' emotion. It can be said that the sector of accidents and emergency causes the stresses for both service providers and service receivers. It is because when the people come to the hospital in cases of accidents or emergency, they are very frightened confused and need quick services owing to the fearful situation. They do not understand the medical process. Therefore, the personnel in this sector must be

able to response such needs effectively. There are a lot of problems in operation the patient services with the accidents and emergency. After considering the result of the operation in the past year, it was found that the result of the operation was not complete. The work quality did not meet the expectation. The services were not effective. The patients did not receive the correct and complete steps of standard services. The patients had to wait for too long before they could be examined. The people who got involve were not satisfied with such services. The service providers were not proud of their jobs. Accordingly, they did not love their career and did not sacrifice for the services. Then, people did not rely on them for their qualitative services. As a result, the selection of using the hospital and the income of the hospital decreased.

In Christian Hospital, the emergency room is in the same room of dressing the wounds in the surgery section and providing services for the patients who need sudden medical care. The previous result of the operation was not complete. For instance the service system was not easy. From the related data, it was found that the claim rate of waiting time and medical care behaviors for the outpatient surgery were 1-3 cases per month. The rate of satisfactory of the service receivers was 70%. In the National Health Development edition 9 2002 – 2006, there are the requirement of the hospital standards in each level by fouling on the quality system developed in the country and relevant to the international standards. The researcher realized that there have been the solving of the problems, it has not been clear yet. The majority of the problems are incidental problems. As a result, the researcher has conducted the research on the development of emergency nursing service in Bangkok Christian Hospital so that the system will be more appropriate and can be applied for the development of emergency services with more efficiency.

Objectives of the Research

General Objectives

To develop Emergency nursing service at Bangkok Christian Hospital.

Specific Objectives

1. To develop the new working model for Emergency nursing service at Bangkok Christian Hospital.
2. To compare the result of performance between the newly developed and existing working model.

Hypothesis of the Research

The newly developed emergency response services is more effective than existing system, considered from:

1. Rate of emergency patients per 1 service provider is increased.
2. Correctness rate of preparation before working in the each shift is increased.
3. Correctness rate of service before patients leaving from Emergency Department is increased.
4. Service time from coming to Emergency Department until seeing a doctor is decreased.
5. Level of adminisstrator s' satisfaction is increased.
6. Level of Provider s' satisfaction is increased.
7. Level of Customer s' satisfaction is increased.
8. Benefit from emergency srevice is increased.

Variables of the Research

Independent Variables

It was the working model implementation of emergency service, it composed of internal variables as follow:

1. Characteristics of working model:
    1.1 Principle of model
    1.2 Structure of model
    1.3 Implementation of model
2. Structure work system and actual work implementation
3. Resource using:
    3.1 Man
    3.2 Money
    3.3 Material
4. Environment while the actual implementation:
    4.1 Physical
    4.2 Biological
    4.3 Social
    4.4 Chemical
5. Problems and constrains during performance, solution and results
6. Enabling factors during performance
7. Obstructing factor

Dependent Variable

Output of working model implementation. It can be divided into sub-type variable as follow:

Result of task performing can be considered from:

1. Quantity of work
2. Quality of work

3. Time of emergency services
4. Aministrator s' satisfaction
5. Provider s' satisfaction
6. Recipient s' satisfaction
7. Benefit from emergency services

Research Design

This research is a quasi experimental research, using two groups pre-test post-test design

Area Covered in the Research

Research area is the Emergency Department, Bangkok Christian Hospital,Chruch of Christ in Thailand. The hospital director has approved the conduct of the research in the hospital.

Control area is the Emergency Department, Saint Louis Hospital which has similar characteristics as Phrachomklao Hospital. The hospital director has approved the conduct of the research in the hospital.

Questionnaire on Satisfaction of the Related people

There are 3 sets of questionnaire on the satisfaction,namely:

1.1 Set 1 for administrators
1.2 Set 2 for service providers
1.3 Set 3 for service recipients

Preparation for Data Collection

Phase 1: Pre-test

1. Collecting data on emergency service activities using the data collection forms by the researcher for 7 days

2. Collecting the data on satisfaction of relevant people, namely, administrators and service providers by using the 1st and 2nd sets of the questionnaire. The data is collected by the researcher

3. Collecting the data on satisfaction of service recipients using the 3rd set of the questionnaire. The data is collected after the recipients receive emergency services and collected by the research assistants for 7 days.

Phase 2: Implementation

Data is collected by inspecting the emergency service work, observing asking and checking the meeting minutes and memoandum of the Quality Development Committee throughout the implementation phase of the emergency service working model.

Phase 3: Post-test

The data collection is the same as for the pre-test phase.

Data Analysis

1. The result of developing a working model for emergency is analyzed descriptively on the appropriateness of the principle, structure and implementation of the model.

2. Testing the distribution of the data on the result of implementing the emergency service work in the experimental and control areas by using Kolmogorov Smirnov Test.

3. Comparing the pre-test result of implementing the emergency service work in the experimental and control areas by using the independent t-test for the data with normal curve of distribution or Mann Withney U test for the data without normal distribution curve.

4. Comparing the pre-test and post-test result of the emergency service implementation in the experimental area by using the independent t- test for the data with normal curve of distribution or Mann Withney U test for the data without normal distribution curve.

5. Comparing the pre-test and post-test result of implementing the emergency service work in the control areas by using the independent t-test for the data with normal curve of distribution or Mann Withney U test for the data without normal distribution curve.

6. Comparing the pre-test scores of satisfaction of people involving in implementing the emergency service work between the experimental and control areas by using the independent t-test for the data with normal curve of distribution or Mann Withney U test for the data without normal distribution curve.

7. Comparing the pre-test and post-test scores of satisfaction of people involving in implementing the emergency service work in the experimental area by using the independent t-test for the data with normal curve of distribution or Mann Withney U test for the data without normal distribution curve.

Implementation results of the emergency nursing service, Bangkok Christain Hospital

The implementation result of the new working model were better than the existing model, as shown in table 19:

Table 19 Conclusion of the implementation result of the new working model classified by research hypothesis

	Research Hypothesis	Result	Prove	Reference Table
1.	Rate of emergency patients per 1 service provider is increased.	No change	Reject	14
2.	Rate of number of patients per labour-force of service provider (patient/1000man-min.) is decreased.	Increased	Reject	14
3.	Correctness rate of preparation before working in each shift is increased.			
	3.1 Place	No change	Reject	15
	3.2 Personnel	Increased	Accept	15
	3.3 Material, supplies	No change	Reject	15
	3.4 Documents	No change	Reject	15
4.	Correctness rate of service before patients leaving from Emergency Department is increased.	No change	Reject	15
5.	Complication rate occurred as results of emergency service or treatment is decreased.	No change	Reject	15
6.	Average time from walk-in until seeing a doctor is decreased.			
	6.1 Emergent patients	No change	Reject	16

Table 19 Conclusion of the implementation result of the new working model classified by research hypothesis (Cont.)

Hypothesis		Result	Prove	Reference Table
6.2	Urgent patients	Decreased	Accept	16
6.3	Non-urgent patients	No change	Reject	16
7.	Average level of satisfaction is increased.			
7.1	Administrator	Increased	Accept	17
7.2	Service providers			
	- Nihgt shift	Increased	Accept	17
	- Morning shift	Increased	Accept	17
7.3	Service recipients			
	- Emergent patients	No change	Reject	17
	- Urgent patients	Increased	Accept	17
	- Non-urgent patients	No change	Reject	17
8.	Benefit is increased.	No change	Reject	Issue 4.5

Discussion

The result of the operational service for the patients with accidents and emergency according to the new working model is better than the former model because within 3 month of applying the new model. There were 9 items of better operation, 8 items of no changes and 2 items (shown in Table 18). The discussion can be stated as the following:

1. Work Quantity
2. Work Quantity
3. The satisfaction of the related personnel
   3.1 Administrators' satisfaction
   3.2 Service Providers' satisfaction
   3.3 Service Receivers' satisfaction
4. Time for providing services
5. Economics

The process of applying the appropriate operational models

1. There was the construction of operational models for the appropriate emergency nursing care with these principles and structure

2. The researcher analyzed the former model improved and constructed the new models based on the academic concept. The new models were inspected on the structure and the content by the experts. To be checked the appropriateness before operating by the administrator and the performers in the organization. This agreed with Somchart Toraksa (2002: 220). He said that the preparation before applying the operational model needed to prepare the administrators and teams so that they could understand the models thoroughly and correctly.

2.1 There were good operation according to the models, performance as the determinate plan, and providing the written performance handbooks so that the performers could understand and follow the appropriate steps. These were relevant to the ideas of the Deputy of Public Health Office (1999: 2). It was stated that The performance and the operation which covered every point caused the good care or services for the service receivers.

2.2 There were the improvement and development for good models. The development was carried out from time to time with the follow – up and the improvement during the operation. There were also the meetings form time to time so that the problems, obstacle were realized and the quick improvement and correction were found. These agreed with Thongchai Sontiwong (1996: 34). He mentioned that different ways of techniques which would be used in administration had to be appropriate and fit the real situation the most.

Recommendation

1. For the experimental area

1.1 The operation of the service development for emergency nursing of patients should be for 1 year and there should be the evaluation every 3 months so that every officers could learn and apply the concepts to develop other aspects. The

development would be quickly and continuously and give good results to the organization and the service receivers would receive the most.

1.2 The handbooks of performance should be improved to be modern and have standards with correct academic principles. All officers had clear directions for the job and could perform effectively. The service receivers had reliability and trust in services.

1.3 There should be the improvement of different steps in coordinating with other organizations by setting the meetings of the representatives of the organizations in order to decrease the complexity and have the convenience to get to the service.

1.4 There should be the promotion to bring out the results of the new models to be applied in the development of other aspects of efficiency.

2. For Private Hospital (Not for Profit)

The operational models for emergency nursing from this research could be applied and preceded as follows:

2.1 Study the details of the new models with the consideration on one's own area and situational analysis so that one could understand and select the appropriate way to do the job.

2.2 There must be the preparation of the team, the explanation for the performers. The performers would have knowledge and understanding including the opportunity participating the operational model to decrease the resistance of changes. This is the important aspect that should be aware of.

2.3 When the constructed models will be applied, there should be the adjustment and the consideration on the selection of the appropriate procedure for the area of oneself. The should be the follow – up and the evaluation from time to time for the improvement according to the situations.

3. The recommendation for further study

The service processes in case of emergency that should be conducted in the further research are the development of giving information during the waiting time to meet the doctor in order to decrease anxiety, the development of emergency service for the diseases often found such as the emergency patients on heart disease and emergency patients with the respiratory tracks etc.

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APPENDIX

Form For Preparedness Of Emergency Department

Date……. No…..……

Shift ☐ Night ☐ Morning ☐ Afternoon

No.	Check-List	Total Quantity	Number of Checking	Number for Working	Remark
1.	Place	……...	……	…….	……..
2.	Provider in each shift				
	2.1 Doctors	……...	……	…….	……..
	2.2 Nurses	……...	……	…….	……..
	2.3 Aid	……...	……	…….	……..
3.	Equipment and Medical Supplies				
	3.1 Emergency cart				
	3.1.1 Medicine				
	3.1.1.1 Adrenaline	……...	……	…….	……..
	3.1.1.2 Atropine	……...	……	…….	……..
	3.1.1.3 Valium	……...	……	…….	……..
	3.1.1.4 Dopamine	……...	……	…….	……..
	3.1.1.5 $NaHCO_3$	……...	……	…….	……..
	3.1.2 0.9% NSS. 50 cc.	……...	……	…….	……..
	3.1.3 Sterile water	……...	……	…….	……..
	3.1.4 Syring size 50 cc.	……...	……	…….	……..
	20 cc.	……...	……	…….	……..
	10 cc.	……...	……	…….	……..
	5 cc.	……...	……	…….	……..
	3 cc.	……...	……	…….	……..
	3.1.5 K-Y jelly	……...	……	…….	……..
	3.1.6 Light	……...	……	…….	……..
	3.1.7 Plaster	……...	……	…….	……..
	3.1.8 Oropharyngeal Airway	……...	……	…….	……..

No.	Check-List	Total Quantity	Number of Checking	Number for Working	Remark
	3.1.8 Oropharyngeal Airway	……...	…….	……..…	……...
	3.1.9 Stethoscope	……...	…….	……..…	……...
	3.1.10 Oxygen mask	……...	…….	……..…	……...
	3.1.11 ET. Tube No. 2.5	……...	…….	……..…	……...
	No. 3.5	……...	…….	……..…	……...
	No. 5.5	……...	…….	……..…	……...
	No. 6.5	……...	…….	……..…	……...
	No. 7.0	……...	…….	……..…	……...
	No. 7.5	……...	…….	……..…	……...
	No. 8.0	……...	…….	……..…	……...
	No. 8.5	……...	…….	……..…	……...
	3.1.12 Laryngoscope with Handdle	……...	…….	……..…	……...
	3.1.13 Ambu bag	……...	…….	……..…	……...
	3.1.14 CPR board	……...	…….	……..…	……...
	3.1.15 I/V Fluid Solution				
	3.1.15.1 5% D/N/2	……...	…….	……..…	……...
	3.1.15.2 5% D/W	……...	…….	……..…	……...
	3.1.15.3 0.9% NSS	……...	…….	……..…	……...
	3.1.15.4 RLS	……...	…….	……..…	……...
	3.1.15.5 Acetar	……...	…….	……..…	……...
	3.1.16 Magill Forceps	……...	…….	……..…	……...
	3.1.17 Guide Wire	……...	…….	……..…	……...
	3.2 ResuscuingRoom				
	3.3.1 Respirator	……...	…….	……..…	……...
	3.3.2 Suction	……...	…….	……..…	……...
	3.3.3 Suction Catheter	……...	…….	……..…	……...
	3.3.4 Oxygen canula	……...	…….	……..…	……...
	3.3.5 EKG Mornitor	……...	…….	……..…	……...

No.	Check-List	Total Quantity	Number of Checking	Number for Working	Remark
	3.3.6 Defibrillator	……...	……	……	……...
	3.3.7 Medicine	……...	……	……	……...
	3.3.7.1 Adrenaline	……...	……	……	……...
	3.3.7.2 Aminophyllin	……...	……	……	……...
	3.3.7.3 Antihist	……...	……	……	……...
	3.3.7.4 Atropine	……...	……	……	……...
	3.3.7.5 Bricanyl	……...	……	……	……...
	3.3.7.6 Cal.	……...	……	……	……...
	Gluconate	……...	……	……	……...
	3.3.7.7 Dexamet	……...	……	……	……...
	3.3.7.8 KCL	……...	……	……	……...
	3.3.7.9 Lanoxin	……...	……	……	……...
	3.3.7.10 Lasix	……...	……	……	……...
	3.3.7.11 Magnesium	……...	……	……	……...
	3.3.7.12 $NaHCO_3$	……...	……	……	……...
	3.3.7.13 Valium	……...	……	……	……...
	3.3.7.14 Dopamine	……...	……	……	……...
	3.3.7.15 Pethidine	……...	……	……	……...
	3.3.7.16 M.O.	……...	……	……	……...
	3.3.7.17 Dilantin	……...	……	……	……...
	3.3.7.18 Isodil	……...	……	……	……...
	3.3.7.19 Adalat	……...	……	……	……...
	3.3.7.20 Nitroglycerine	……...	……	……	……...
	3.3.8 Set Special				
	3.3.8.1 Suture set	……...	……	……	……...
	3.3.8.2 Labour set	……...	……	……	……...
	3.3.8.3 PV. Set	……...	……	……	……...
	3.3.8.4 Cut down set	……...	……	……	……...
	3.3.8.5 Cath. Set	……...	……	……	……...
	3.3.8.6 Dressing set	……...	……	……	……...

No.	Check-List	Total Quantity	Number of Checking	Number for Working	Remark
	3.3.9 Support ต่าง ๆ				
	3.3.9.1 Arm Sling	……...	…….	…….	……...
	3.3.9.2 Soft Collar	……...	…….	…….	……...
	3.3.9.3 Hard Collar	……...	…….	…….	……...
	3.3.9.4 Knee support	……...	…….	…….	……...
	3.3.9.5 Ankle support	……...	…….	…….	……...
	3.3.9.6 Etc……	……...	…….	…….	……...
4.	Document				
	4.1 Admit set	……...	…….	…….	……...
	4.2 Consent Form	……...	…….	…….	……...
	4.3 Medical Certificate	……...	…….	…….	……...
	4.4 Laboratory Form	……...	…….	…….	……...
	4.5 Request X-ray Form	……...	…….	…….	……...
	4.6 CT Scan Request Form	……...	…….	…….	……...
	4.7 Etc……	……...	…….	…….	……...

Form For Activity On Emergency Service

Date…….. No…..……

Shift ☐ Night ☐ Morning ☐ Afternoon

Hospital Number…….

Gender ☐ Male ☐ Female

Charateristic of Patient ☐ Emergency ☐ Urgent ☐ Non-urgent

Person Who Take Patients to Hospital ☐ By Themselves ☐ Relatives

☐ Person who see the patient

☐ Refer, Abulance, etc.

Chief Complaints…….…….

……..

Arrived Time at Hospital……..……

Arrived Time at Emergency Department…….

No.	Main Activities	Activity Services	Time of Service	Provider	Activities that patients did not receive	Complication occurred to patients
1.	The reception	1.1 Before the patient arrived				
		1.1.1 The preparation of nurses	……...	…….	……	……..……..
		1.1.2 The preparation of stretcher man	……...	…….	……	……..……..
		1.2 Immediately when patient arrived	……...	…….	……	……..……..
		1.2.1 The reception of nurese	……...	…….	……	……..……..
		1.2.2 The first history checking	…..……	…….	……	……..……..
		1.2.3 The recommendation to Medical Record Department	……..…	…….	……	……..……..
		1.2.4 Moving patients to Emergency Department	……..…	…….	……	……..……..
		……	……..…	…….	……	……..……..
		……	……..…	…….	……	……..……..

No.	Main Activities	Activity Services	Time of Service	Provider	Activities that patients did not receive	Complication occurred to patients
2.	Immediate emergency service when patients arrived	2.1 Emergency Assessment				
		2.1.1 Consciousness Assessment	…….	…….	……	……..……..
		2.1.2 Airway Assessment	…….	…….	……	……..……..
		2.1.3 Breathing Assessment	…….	…….	……	……..……..
		2.1.4 Blood Circulation Assessment	…….	…….	……	……..……..
		2.1.5 Vital Signs Assessment	…….	…….	……	……..……..
		2.1.6 Neuro Signs Assessment	…….	…….	……	……..……..
		……...	…….	…….	……	……..……..
		……...	…….	…….	……	……..……..
		2.2 Emergency services before the doctor arrived				
		2.2.1 Clear Airway	…….	…….	……	……..……..
		2.2.2 Head tilt –Chin lift/ Jaw Thrust Maneuver	…….	…….	……	……..……..
		2.2.3 Oropharyngeal Airway	…….	…….	……	……..……..
		2.2.4 Oxygen Therapy	…….	…….	……	……..……..

No.	Main Activities	Activity Services	Time of Service	Provider	Activities that patients did not receive	Complication occurred to patients
		2.2.4.1 Canula	…….	…….	……..…	……...…...…..
		2.2.4.2 Facemask with Reservior bag	…….	…….	……..…	……...…...…..
		2.2.4.3 Ambu bag with Reservior bag	…….	…….	……..…	……...…...…..
		2.2.4.4 Intra Veneous Fluid	…….	…….	……..…	……...…...…..
		2.3 Emergency services by the doctor				
		2.3.1 Endotracheal tube	…….	…….	……..…	……...…...…..
		2.3.2 Medicine	…….	…….	……..…	……...…...…..
		2.3.3 Defibrillation	…….	…….	……..…	……...…...…..
		2.3.4 Cut Down	…….	…….	……..…	……...…...…..
		2.3.5 ICD	…….	…….	……..…	……...…...…..
		2.3.6 Stop Bleeding	…….	…….	……..…	……...…...…..
		……..	…….	…….	……..…	……...…...…..
		……..	…….	…….	……..…	……...…...…..

No.	Main Activities	Activity Services	Time of Service	Provider	Activities that patients did not receive	Complication occurred to patients
3.	Registration of Medical Record	3.1 Registration of Medical Record by telephone if patients cannot register by themselves/relatives	…….	…….	……..…	……...…...…..
		3.2 Checking Medical Record	…….	…….	……..…	……...…...…..
		3.3 Recording in Medical Record	…….	…….	……..…	……...…...…..
		……	…….	…….	……..…	……...…...…..
4.	The Diagnosis	4.1 Physical Examination	…….	…….	……..…	……...…...…..
		4.2 Laboratory	…….	…….	……..…	……...…...…..
		4.3 X-ray	…….	…….	……..…	……...…...…..
		4.4 Electrocardiogram	…….	…….	……..…	……...…...…..
		……	…….	…….	……..…	……...…...…..
		……	…….	…….	……..…	……...…...…..

No.	Main Activities	Activity Services	Time of Service	Provider	Activities that patients did not receive	Complication occurred to patients
5.	Comprehensive services	5.1 Dressing 5.2 Suture 5.3 Repaired Tendon 5.4 Splint 5.5 Prepareness for Operation 5.6 Gastric Lavage 5.7 Injection 5.8 PV 5.9 Catheterization …… ……	…… …… …… …… …… …… …… ……	…… …… …… …… …… …… …… ……	…… …… …… …… …… …… …… ……	…… …… …… …… …… …… …… ……
6.	Services before recipients leave	6.1 Coordination with the other department 6.1.1 Ward 6.1.2 Operation	……	……	……	……

No.	Main Activities	Activity Services	Time of Service	Provider	Activities that patients did not receive	Complication occurred to patients
		61.3 Admit Center	…….	…….	……..…	……..…..…..
		6.1.4 The other hospital	…….	…….	……..…	……..…..…..
		6.2 Vital Signs Assessment	…….	…….	……..…	……..…..…..
		6.3 Neuro Signs Asssessment	…….	…….	……..…	……..…..…..
		6.4 Wound Checking	…….	…….	……..…	……..…..…..
		6.5 IV. Fluid Checking	…….	…….	……..…	……..…..…..
		6.6 Doctor's Orders Checking	…….	…….	……..…	……..…..…..
		6.7 Information giving service for patients	…….	…….	……..…	……..…..…..
		6.8 Making an appoinment	…….	…….	……..…	……..…..…..
		……	…….	…….	……..…	……..…..…..
		……	…….	…….	……..…	……..…..…..

Patients Moved out ☐ Discharge ☐ Admitted, Please specify……
☐ Dead ☐ Refer, Please specify……..…….

Time at patients moved out……

Form for Characteristics of Emergency Department

1. Characteristic of Hospital

1.1 Location of Hospital

……

……

1.2 Present Hospital Size

……

……

1.3 Hospital Area

……

……

2. Personnel Structure

2.1 Emergency Department Manpower

……

……

2.2 The Number of Providers in Each Shift

2.2.1 Night Shift

……

……

2.2.2 Afternoon Shift

……

……

2.2.3 Morning Shift

……

……

2.3 The Development of Personnel in Emergency Department

……

……

3. Medical Supplies in Emergency Department

……..……

……..……

4. Characteristics of Service Recipients

4.1 The Number of Service Recipients

…….……...

…….……...

4.2 Characteristics of Service Recipients

…….……...

…….……...

5. Work Flow of The Emergency Service

……..……...

……..……...

6. Activity Services in Emergency Department

……..……...

……...……...

7. The Department of Quality in Emergency Department

……..

……..

8. Project in Emergency Department

……..

……..

9. Other Characteristics

……..

……..

M.Sc.(Public Health) Course
Faculty of Public Health,
Mahidol University

Date……..….Month…….,……

Subject: Request for questionnaires answering
To: …….

I am Ms. Khounjit Mansak,a M.Sc. (Public Health) student, Major in Hospital Administration, Faculty of Public Health, Mahidol University,who got the permission to conduct the thesis subject: The Development of Emergency Nursing Service in Bangkok Christian Hospital. I would like to have your opinion about the development of Emergency Service in Bangkok Christian Hospital for future improvement and complete of my research project.

So, I would like you to answer questionnaires as following the instructive details. This study will not be possible with out your participation. I would greatly appreciate if you could ansewr the enclosed questionnaires for me. Thank you for your kindness.

Yours faithfully
Ms. Khounjit Mansak
The researcher

The questionnaire on the satisfaction of the emergency service for administrators

Date…… No……..…….

Part 1 Satisfaction with the emergency service

Explanation Please assess your satisfaction with performance of the emergency service within the pass month and mark ✓ in only 1 score box cooesponding most with your satisfaction. Scores are from the least score = 0 to the highest = 10

Satisfaction score is

Least satisfied =	0	1	2	3	4	5	6	7	8	9	10	= Most satisfied

Part 2 Opinions for development and improvement of the emergency service

Explanation Please give suggestions for development and improvement of tdhe emergency service concerning the following

1. Preparation for the emergency service before working

   Suggestion……..……..

   ……..……...

2. Reception when patients/relatives arrived

   Suggestion…..……..

   ……..……...

3. Assessment when patients arrived

   Suggestion……..……..

   ……...……...

4. Emergency service for emergency patients

   Suggestion……..……..

   ……..

5. Service follow doctor,s order /medical record sheet

Suggestion……..……..

……..

6. Information giving service before patients moved out

Suggestion……..……..

……..……...

7. Completeness checking service before patients moved out

Suggestion…..……..

……...……...

8. Administration in Emergency Department

Suggestion……..……..

……...……..

9. Work coordination between Emergency Department and Other Department

Suggestion……..……..

……...……...

10. Team work in Emergency Department

Suggestion……..……..

……...……...

11. Recorded Nursing

Suggestion……..……..

……...……...

12. Other Suggestion

Suggestion……..……..

……...……...

Thank you very much,

Ms. Khounjit Mansak

The researcher

M.Sc. (Public Health) Course
Faculty of Public Health,
Mahidol University

Date…..….Month…….,……

Subject: Request for questionnaires answering
To: …….

I am Ms. Khounjit Mansak,a M.Sc. (Public Health) student, Major in Hospital Administration, Faculty of Public Health, Mahidol University,who got the permission to conduct the thesis subject: The Development of Emergency Nursing Service in Bangkok Christian Hospital. I would like to have your opinion about the development of Emergency Service in Bangkok Christian Hospital for future improvement and complete of my research project.

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Yours faithfully
Ms. Khounjit Mansak
The researcher

The Questionnaire on the satisfaction of the emergency service for providers

Date…… No…….

Shift ☐ Night ☐ Morning ☐ Afternoon

Part 1 Satisfaction with the emergency service

Explanation Please assess your satisfaction with performance of the emergency service within the pass month and mark ✓ in only 1 score box cooesponding most with your satisfaction. Scores are from the least score = 0 to the highest = 10

Satisfaction score is

Least satisfied =	0	1	2	3	4	5	6	7	8	9	10	= Most satisfied

Part 2 Opinions for development and improvement of the emergency service

Explanation Please give suggestions for development and improvement of the emergency service concerning the following

1. Preparation for the emergency service before working

   Suggestion……..……..

   ……

2. Shift report in Emergency Department

   Suggestion……..……..

   …….

3. Assessment when patdients arrived

   Suggestion……..……..

   ……..……

4. Emergency service for emergency patients

   Suggestion……..……..

   ……...……...

5. Service follow doctor's order / medical record sheet

Suggestion……..……..

……..……...

6. Administration in Emergency Department

Suggestion……..……..

……..……...

7. Completeness checking service before patients moved out

Suggestion……..……..

……..……...

8. Information giving service before patients moved out

Suggestion……..……..

……..……...

9. Work coordination between Emergency Department and Other Department

Suggestion…..……..

……..……...

10. Information Recorded in the medical

Suggestion……..……..

……..……...

11. Preparation for next tine in the emergency service

Suggestion……..……..

……..……...

12. Environment and infrastructure of Emergency Department

Suggestion……..……..

……..……...

13. Other Suggestion

Suggestion…..……..

……..……...

Thank you very much,

Ms. Khounjit Mansak

The researcher

Sc. (Public Health) Course
Faculty of Public Health,
Mahidol University

Date…….Month……..,……

Subject: Request for questionnaires answering
To: …….

I am Ms. Khounjit Mansak,a M.Sc. (Public Health) student, Major in Hospital Administration, Faculty of Public Health, Mahidol University,who got the permission to conduct the thesis subject: The Development of Emergency Nursing Service in Bangkok Christian Hospital. I would like to have your opinion about the development of Emergency Service in Bangkok Christian Hospital for future improvement and complete of my research project.

So, I would like you to answer questionnaires as following the instructive details. This study will not be possible with out your participation. I would greatly appreciate if you could ansewr the enclosed questionnaires for me. Thank you for your kindness.

Yours faithfully
Ms. Khounjit Mansak
The researcher

The Questionnaire on the satisfaction of the emergency service for recipients

Date…….. No…….…….……..

Shift ☐ Night ☐ Morning ☐ Afternoon

Part 1 Satisfaction with the emergency service

Explanation Please assess your satisfaction with performance of the emergency service within the pass month and mark ✓in only 1 score box cooesponding most with your satisfaction. Scores are from the least score = 0 to the highest = 10

Satisfaction score is

Least satisfied =	0	1	2	3	4	5	6	7	8	9	10	= Most satisfied

Part 2 Opinions for development and improvement of the emergency service

Explanation Please give suggestions for development and improvement of the emergency service concerning the following

1. Comfortable about travel from house/ accident point to the hospital

   Suggestion……..……..

   ……..……

2. Parking in front of the Emergency Department

   Suggestion……..……..

   ……...……...

3. Transferring wheel chairs / stretchers when patients arrived

   Suggestion……..……..

   ……...……...

4. Registration when patdients arrived

Suggestion……..……..

……..……

5. Wecomming or greeting when patients arrived warmly

Suggestion……..……..

……...……...

6. Inspection for diagnosis / X-ray or blood examination

Suggestion……..……..

……...……...

7. Explaining the examination results

Suggestion……..……..

……..…….……...

8. Information giving service before patients moved out

Suggestion……..……..

……..…….……...

9. Servicing sent off patients at the pharmacy / cashier

Suggestion……..……..

……...……...

10. Recieption giving in Hospital / admission in Hospital

Suggestion……..……..

……...……...

11. Environment and infrastructure of Emergency Department

Suggestion……..……..

……..……...

12. Other Suggestion

Suggestion……..……..

……..

Thank you very much,

Ms. Khounjit Mansak

The researcher

BIOGRAPHY

NAME	Miss Khounjit Mansak
NATIONALITY	Thai
DATE OF BIRTH	March 28,1972
PLACE OF BIRTH	Nakornsawan Province, Thailand
INSTITUTIONS ATTENDED	Christian University, Bangkok 1991-1994 Bachelor of Science in Nursing Mahidol University, 2002-2004: Master of Science (Public Health) Major in Hospital Administration
POSITION & OFFICE	1994-Present,Bangkok Christian Hospital *Position*: Professional Nurse Intensive care unit Out Patient Surgery Department and Emergency Room 02-2351000-7 ext. 2100