

**DEVELOPMENT OF NURSING CASE MANAGEMENT MODEL
FOR PATIENTS WITH MYOCARDIAL INFARCTION**



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Thesis
Entitled

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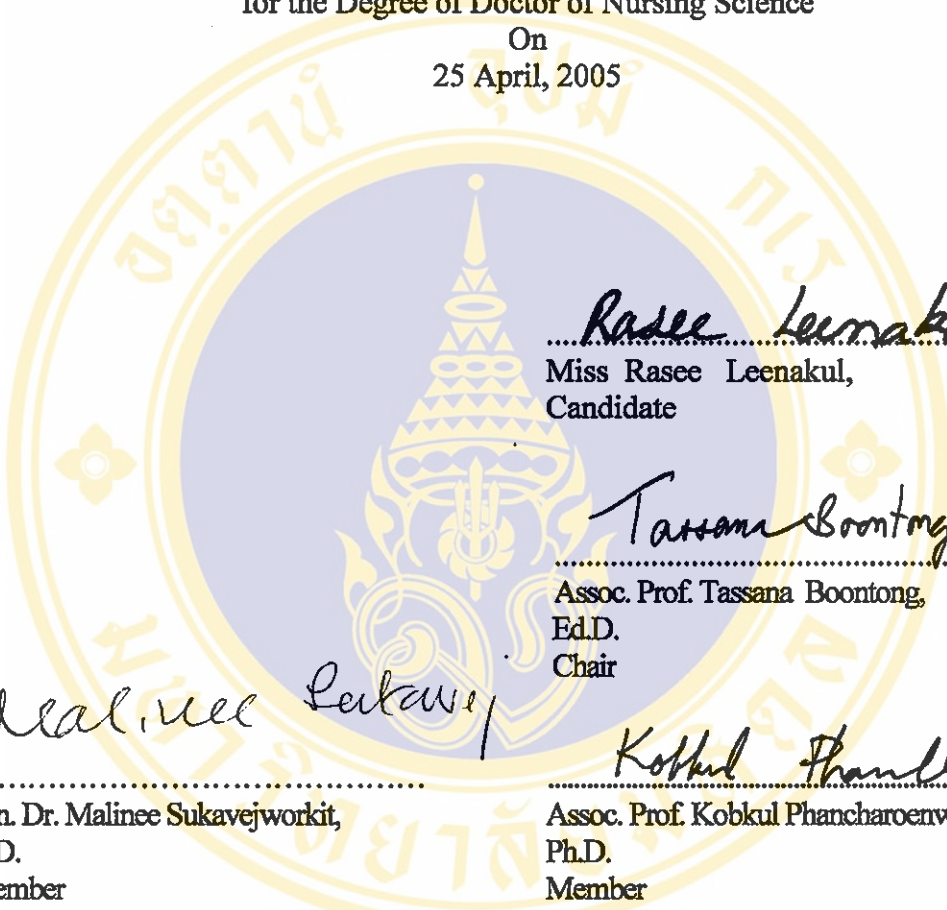
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DEVELOPMENT OF NURSING CASE MANAGEMENT MODEL FOR PATIENTS WITH MYOCARDIAL INFARCTION

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ABSTRACT

The health care system in Thailand has evolved towards management of quality of care and cost effectiveness in recent years. This research aimed to develop a nursing case management model in patients with myocardial infarction, using a nurse case manager as a key person to manage care for patients more effectively. Participatory action research was conducted with nine participants in the process of model development. Data collection strategies included interviews, observations, document examination, as well as records of outcomes of the model.

The findings revealed that the model of nursing case management comprised three important parties, including a nurse case manager, health care provider, and payor or budget providers. These parties interacted with one another while the patient was the center of service delivery and a clinical pathway was used as a tool to assess, plan, implement, and evaluate care provided for patients. In this process, the nurse case manager was a person who acted as a primary nurse responsible for providing direct care and collaborating with other health care providers. The manager was also responsible for ensuring both quality and effective cost outcomes, including patient and staff satisfaction, as well as a reduction in length of stay and readmission rate of patients. Strategies toward the achievement of the success of this model included support at a policy level and cooperation among the health care team. Barriers for the achievement of the model included staff resistance and inadequate resources for continuing care post discharge.

From the findings, it is clear that nurses are in a pivotal role to collaborate in care plan with other multidisciplinary teams. The researcher suggests that in this model a nurse case manager should have knowledge pertinent to the case type and effective communication skills so as to facilitate effective care management. It is envisaged that the process of model development in this study could be used as a guide to develop other similar models for different groups of patients. This would be beneficial for the further improvement of quality of care and cost containment in the future.

KEY WORDS: NURSING CASE MANAGEMENT / PARTICIPATORY ACTION RESEARCH / CASE MANAGER / MYOCARDIAL INFARCTION

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การพัฒนาแบบแผนการจัดการรายกรณีทางการพยาบาลในผู้ป่วยกล้ามเนื้อหัวใจตาย (DEVELOPMENT OF NURSING CASE MANAGEMENT MODEL FOR PATIENTS WITH MYOCARDIAL INFARCTION)

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บทคัดย่อ

ระบบบริการสุขภาพในปัจจุบัน มุ่งเน้นการพัฒนาคุณภาพบริการที่ดี และการควบคุมค่าใช้จ่ายที่มีประสิทธิภาพ การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อพัฒนาแบบแผนการจัดการรายกรณีทางการพยาบาลสำหรับผู้ป่วยกล้ามเนื้อหัวใจตาย โดยมีพยาบาลเป็นผู้จัดการการดูแล ทำหน้าที่ประสานงานกับสหสาขาวิชาชีพ ในการวางแผนการดูแลผู้ป่วย และการบริหารจัดการค่าใช้จ่ายบริการสุขภาพอย่างเหมาะสม ระเบียบวิธีวิจัยที่ใช้ คือ การวิจัยเชิงปฏิบัติการแบบมีส่วนร่วม ข้อมูลหลักได้จากการสัมภาษณ์ สังเกต และการศึกษาเอกสารที่เกี่ยวข้องในการพัฒนาแบบแผน รวมทั้งแบบบันทึกข้อมูลผลลัพธ์ที่เกิดขึ้น วิเคราะห์ข้อมูลโดยใช้การวิเคราะห์เชิงเนื้อหาสำหรับข้อมูลเชิงคุณภาพ และความถี่ ร้อยละ สำหรับข้อมูลเชิงปริมาณ

ผลการศึกษา พบว่า แบบแผนการจัดการรายกรณีในผู้ป่วยกล้ามเนื้อหัวใจตาย เป็นรูปแบบที่อาศัยความร่วมมือระหว่างผู้เกี่ยวข้อง 3 ฝ่ายคือ พยาบาลผู้จัดการการดูแล ทีมผู้ให้บริการ และผู้จ่ายเงินในระบบบริการสุขภาพ โดยมีผู้ป่วยเป็นศูนย์กลาง และใช้แบบแผนการดูแลที่สร้างร่วมกันระหว่างสหสาขาวิชาชีพ เป็นเครื่องมือในการวางแผน ปฏิบัติ และประเมินผลการดูแล กระบวนการในการพัฒนาแบบแผนดังกล่าว ประกอบด้วยการศึกษาปัญหาสถานการณ์ร่วมกับการวางแผนแก้ไขปัญห โดยมีการยอมรับข้อบ่งชี้ของปฏิบัติ พร้อมทั้งสะท้อนคิดปัญหาและแนวทางแก้ไขอย่างเป็นระบบต่อเนื่อง ในรูปแบบดังกล่าว พยาบาลผู้จัดการมีความสำคัญ ในการช่วยให้การประสานงานการดูแลเกิดขึ้นอย่างเป็นรูปธรรมและมีประสิทธิภาพ ก่อให้เกิดความพึงพอใจทั้งผู้ป่วยและทีมผู้ให้บริการ รวมทั้งผลลัพธ์ที่ดีของการบริการ ได้แก่ การลดจำนวนวันนอนในโรงพยาบาล อัตราการกลับมารักษาซ้ำ และค่าใช้จ่ายในโรงพยาบาล ทั้งนี้ปัจจัยสนับสนุนที่สำคัญในกระบวนการดังกล่าว คือ นโยบายและความร่วมมือของทีมผู้ให้บริการ ส่วนปัจจัยที่เป็นอุปสรรค ได้แก่ แรงต้านการเปลี่ยนแปลง และโครงสร้างในระบบบริการสุขภาพบางส่วนที่ยังไม่เอื้อต่อการดูแลที่มีประสิทธิภาพ

จากผลการวิจัย ผู้วิจัยเสนอแนะว่า พยาบาลมีบทบาทสำคัญในการเป็นผู้ประสานงานหลักเพื่อการวางแผนการดูแลผู้ป่วยร่วมกับสหสาขาวิชาชีพ โดยอาศัยความรู้เชิงประจักษ์ที่เกี่ยวข้องกับการดูแลผู้ป่วย เฉพาะทาง และทักษะการสื่อสารที่มีประสิทธิภาพระหว่างทีมผู้ให้บริการและผู้ป่วย กระบวนการในการพัฒนาแบบแผนการจัดการรายกรณีครั้งนี้ สามารถใช้เป็นแนวทางในการพัฒนาคุณภาพการดูแลผู้ป่วยกลุ่มอื่นๆ เพื่อให้เกิดคุณภาพการดูแลที่ดีและการควบคุมค่าใช้จ่ายบริการที่เหมาะสมต่อไป

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CONTENTS

	Page
ACKNOWLEDGEMENT	
ABSTRACT	iv
ABSTRACT(THAI)	v
LISTS OF TABLES	viii
LISTS OF FIGURES	ix
CHAPTER	
I INTRODUCTION	
Background and the Significance of the Study	1
Research Questions	8
Purposes of the Study	8
Conceptual Framework	9
Scope of the Study	15
Definition of Terms	15
II LITERATURE REVIEW	
Thailand: An Introduction	17
Health Care System in Thailand	18
Myocardial Infarction	22
Case Management	27
Relevant Research	35
III METHODOLOGY	
Action Research	39
Characteristics of Participatory Action Research	40
Participatory Action Research Process	43
Rationale for Selection of PAR	50
Research Sites	50
Participant Selection Criteria	52
Data Collection Strategies	53

CONTENTS (CONT.)

	Page
Role of Researcher	58
Leaving the Field	59
Translation Issues	60
Protection Measures of Confidentiality	61
Data Analysis	61
IV RESULTS	
Characteristic of the Hospital Setting	64
Demographics of the Key Informants	68
Demographics of the Patients with Myocardial Infarction	69
Patient Care Delivery	71
Development of a Nursing Case Management Model	73
Outcomes of Nursing Case Management	98
Strategies and Barriers in the Process of Model Development	104
V DISCUSSION	
The Model of Nursing Case Management	107
Process of the Development of Nursing Case Management Model in Patients with Myocardial Infarction	114
Changes in the Research Process	116
Outcomes of the Model	123
Issues Related to the Development of Nursing Case Management Model	127
Reflection	129
Limitation	130
VI CONCLUSION	
Summary and Conclusion of the Study	131
Implications for Nursing Practice	137
Suggestions for Future Research Studies	138
BIBLIOGRAPHY	140
APPENDIX	163
BIOGRAPHY	190

LIST OF TABLES

	Page
Table 1 Average Cost of Care for Patients with Different Medical Diseases In Thailand ,2000	5
Table 2 Annual Statistics of Patients with Cardiovascular Diseases, including Myocardial Infraction, at Sawanpracharak Hospital,2000-2002	6
Table 3 Readmission Rate for Patients with Different Medical Diseases at Sawanpracharak Hospital,2000-2002	7
Table 4 Mobidity, Mortarity, Length of Stay, and Readmission Rate of Myocardial Infraction Patients 2000-2002	24
Table 5 Characteristics of the Ward Setting	65
Table 6 Characteristics of Patients with MI	66
Table 7 Job Description of Nurses	67
Table 8 Demographic Data of the Key Informants	69
Table 9 Demographic Data of the Patients with MI	70
Table 10 Summary of Previous Caring Issues for Patients with MI	78

LIST OF FIGURES

	Page
Figure 1 Growth of Real-Term Expenditures on Health, Drugs, and GDP, 1993-2000 for Comparison, Health Expenditures of 1993	3
Figure 2 Conceptual Framework of Nursing Case Management	11
Figure 3 Participatory Action Research Process	49
Figure 4 Organizational Structure of the Hospital and Nursing Department	64
Figure 5 PAR Cycle in the Model Development	75
Figure 6 Preparation Phase of NCM Model Development	76
Figure 7 Plan and Implementation Phase on NCM Model Development	80
Figure 8 Practice of Care Delivery for Patients with MI in the Past	86
Figure 9 Practice of Care Delivery for Patients with MI in the NCM Model	88
Figure 10 Evaluation Phase in NCM Model Development	91
Figure 11 A Change in Organizational Structure toward Collaborative Care	93
Figure 12 A Change in the Process of Care and Outcome Identification in each Phase	95
Figure 13 A Model of Nursing Management for Patients with MI Using a Nurse Case Manager as a Key Care Coordinator	97
Figure 14 Average length of Stay of Patients with MI	103
Figure 15 Cost of Care for each Patient with MI between DRG and Actual Cost	104

CHAPTER I

INTRODUCTION

Background and Significance of the Study

In recent years, forms of care delivery systems have continuously been evolving internationally in order to produce care that is of high quality, suitable and relevant to socio-economic changes in each country. In western countries (Sparer, 2003), case management (CM) has been one of the major forms of care delivery systems that has attracted nurses' attention during the past two decades (Cohen & Cesta, 2001; Merrill, 1985). Case management is a system of health care delivery designed to facilitate achievement of expected patient outcomes within appropriate length of stay (Smith, 1998). The goals of case management are the provision of quality health care along a continuum, decreased fragmentation of care, while enhancing cost containment. Nurses who have demonstrated themselves to be a key coordinator in multidisciplinary or patient care team often play a critical role as 'nurse case managers' in case management. To date, case management has increasingly been adopted in clinical practice in Asia, including Thailand (Huber, 2002; Stanton, Walizer, Graham, & Keppel, 2000).

In Thailand, case management has been a subject of interest for nurses and other health professionals since 1997 (Sirinakorn, 1999). This has been due to the two recent important health care issues emerging in the country: those are quality and cost issues. It is important to note that at the time of this study Thailand was in a transition towards the so-called 'health care reforms' which have emphasized largely on the concept of 'quality at low cost'. It was therefore timely for health care professionals, including nurses, in Thailand to develop a care delivery system that was congruent with the Thai health care reforms to ensure effective and good services for Thai patients (Srirattanabal, 2000).

With regard to the quality issue, the Thai government realized that there had still been a gap in quality of health care services despite an effort of both health

administrators and providers to maintain standards of care for patients. As a consequence, the Ministry of Public Health (MOPH) has established a hospital accreditation system (HA) in 1997 to evaluate the quality of the hospital services, and also develop standards and outcome measurement of the services that are patient-centered. In addition, HA also promotes multidisciplinary/interdisciplinary practices. Attention has been given to patients with complex health problems along with the development of standards of care delivery and continuity of care for each group of patients (Institute for Hospital Quality and Accreditation, 2001). The new paradigm of care that emphasizes patient-centered approach and continuity of care provides an external force for hospitals to develop efficient service delivery system by reducing unnecessary steps, utilizing clinical pathways, improving quality of services, and promoting interdisciplinary practices (e.g. the so-called ‘patient care team’ – PCT). A number of hospitals, for examples, Songkhlanakarind and Had Yai Hospital, have adopted this paradigm of practices to enhance the quality of services and patient’s satisfaction (Sithiamorn et al., 2000).

In relation to the cost issue, the previous Asian economic crisis in 1997 has inevitably affected Thailand’s budget management on health care expenditures. In 1993, there were no significant differences in the real-term expenditures on health, drugs, and gross domestic product (GDP) (Ministry of Public Health, 2002). However, in 1997 the rise of health care and drug expenditures had been dramatic, while the GDP was going down as a result of the economic crisis (see Figure 1). Evidently, health expenditures in Thailand in 1993 were approximately 180,000 million bahts, and in 1997 were doubled to almost 300,000 million bahts. Moreover, Thailand’s health expenditures, when compared with the national GDP, were higher than those of other Asian counterparts such as Malaysia, Indonesia, and China in previous years. For example, in 1994-1995 Thailand’s health expenditures accounted for 8.1% of the GDP, while Malaysia, Indonesia, and China accounted for only 3.1, 3.7, and 3.8 % of the GDP respectively (Gross, Conavay, & Bridge, 1997; Yu Xin, 1999). The rise in health care expenditures coupled with a quality issue has necessitated the need for health care reforms in Thailand. These reforms focus on improving care delivery systems and practices that are accountable for national health policies that mandate quality of services and cost effectiveness (Suprachuttikul & Srirattanabal, 2000).

It is envisaged that the reforms would best benefit every party, including health care consumers, providers, and payors/budget providers, that is related to one another in the Thai health care system.

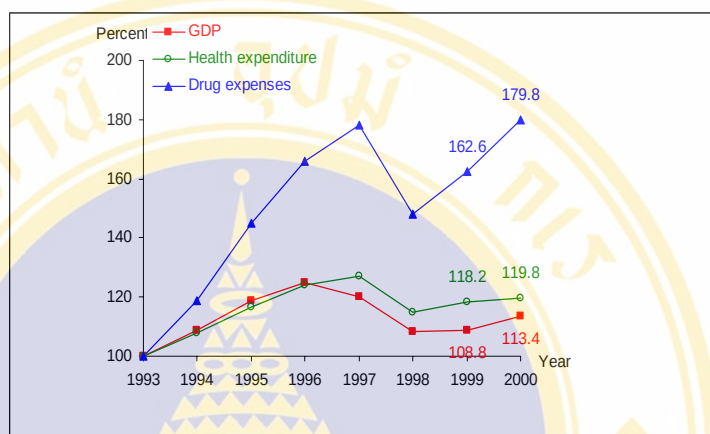


Figure 1 Growth of real-term expenditures on health, drugs, and GDP, 1993-2000
For comparison, health expenditures of 1993 were set at 100

In response to the national health care reforms, the Thai government has developed new management of health care expenditures through a dual health insurance or co-payment system. This new management has meant that in stead of the government who was solely responsible as a payor for the cost of care in any public health services in the past, nowadays, there is a third party, such as a Social Security or a 30 Baht Scheme, working along as a co- payor to manage costing issues in the Thai health care system. In this kind of management, it is interesting to note that these payors currently play a significant role in managing the health care budgets and also shaping the ways services are being delivered to Thai patients (Jindawattana, 2001).

In order to effectively manage cost of care within the 30-baht scheme, the Thai government also introduced the diagnosis-related group (DRG) classification system into the health care nation. This classification system has allocated health care monies according to the diagnosis and control hospital days, or length of stay, of patients. As a result, hospitals tend to discharge patients quicker to reduce costs of hospitalization. The issue of increasing readmission rate has become obvious when patients got back

to the hospitals with the same problems as they had previously been admitted or with complications related to their illnesses. For successful and effective discharge care, hospitals are therefore in need of new care delivery strategies that will serve both purposes, namely quality services and cost containment. Case management has emerged in Thailand during the past decade as it is considered as one of the strategies appropriate for use in the service delivery reforms in the country.

Case management however is not generally required for all kinds of patients. It is often used for managing care in patients with complex health problems demanding high volume of health care expenditures, such as those with cardiovascular diseases (Hodgen, Ferguson, Davis, & White, 2002 ; Armola & Topp, 2001). The complexity in managing care for these patients reflects a need for health care providers to provide comprehensive assessment, integrative plan, collaborative implementation, and careful evaluation among patient care team towards each individual patient (Cannon-Wagner, Soule, Walker, & Vance, 2002; Armola & Topp, 2001).

The process of case management thus is dynamic and requires cooperation of all parties involved. A patient-centered approach is seen as vital to case management along with collaborative practices among multidisciplinary team who are involved in caring for a particular group of patients. Integration of health care services through effective care coordination within a timeframe of DRG classification system is also central to the practice of case management to ensure both quality and continuity of care as well as cost containment for specific group of patients. In the light of these, nurses as a health care team who work with patients continuously for 24 hours a day, seven days a week, are seen as the most appropriate person to act as the manager coordinating and collaborating care provided for patients through their effective communication. They are also in the best position to act as advocates for patients should there be any patients' issues affecting quality of care arising in each individual patient. A substantial number of western and Thai literature have supported the notion that nurses play an important role in the success of case management, especially in the nursing case management model (Lee, Mackenzie, Dudley-Brown, & Chin, 1998; Khunpimay, 2000; Zander, 2002).

Overall, case management in Thailand therefore has evolved in response to the service delivery reforms in the DRG era to serve not only health care consumers, but

also health care providers and payers, or the third party, in health care system. To date, case management has been adopted and implemented in many Thai health care settings, however the model used has not well been developed and established.

In recent years, international literature suggested that case management has been implemented in a variety of patient groups (diagnoses), with both acute and chronic illnesses (Biaby, Ozanne, & Gordon, 2002; Bodenheimer, 2003; Goodwin, 2003; Chu, Edwards, Levin, & Thomson, 2000). It is however found that case management has often been trialled in patients with cardiovascular diseases (Kegal, 1996). This is due to a large number of patients (in their diagnosis group) and high mortality rate. Successful management of services that can assure quality and contain cost of services will therefore benefit all stakeholders involved (Cannon-Wagner, Soule, Walker, & Vance, 2002; Marzialli, 2002; Hodgen, Ferguson, Davis, & White, 2002; Armola & Topp, 2001).

In Thailand, cardiovascular diseases, especially myocardial infarction (MI), have become the current major health problems of Thai people. These diseases affect quality of life for patients and consume a great deal of health care costs in recent years. As revealed in Table 1, the cost of care for patients with cardiovascular diseases, which include MI, has been much higher than that of other medical diseases, such as hypertension and diabetes mellitus (Chooprapawan, 2000). From these incidences, the need for Thai health care professionals to seriously consider the problems related to MI and to identify effective care delivery system for patients with this diagnosis in the nation is quite urgent.

Table 1 Average cost of care for patients with different medical diseases in Thailand, 2002

Types of diseases	Average cost of care (Bahts)
Hypertension	1,670.09
Diabetes mellitus	1,670.09
Cardiovascular diseases	3,195.58

In addition, in the year 2000 the incidence rate of the cardiovascular diseases has been on the rising trend and the mortality rate associated with these diseases was also ranked as the first (Chooprapawan, 2000). Evidently, cardiovascular diseases affect patients' quality of life a great deal. For instance, impaired cardiac output often results in impaired performance on activities of daily living (ADL) and/or role functions (Beach et al., 1996). Patients with severely impaired heart functions experience shortness of breath even at rest and therefore cannot perform any ADL or work. Consequently, it is prevailed that negative impacts of cardiovascular diseases on socio-economic status of the patients and their families are prominent in such cases.

More recently in the northern Thai region, health statistics indicated that the mortality rates of patients with cardiovascular diseases, especially those with MI were presented at the top list (Chooprapawan, 2000). Specifically at Sawanpracharak Hospital, a tertiary hospital located in Nakhonsawan Province, MI is on the rise among out-patient and in-patient visits during the year 2000-2002 (see Table 2). Evidently, MI has now become the major cause of deaths among medical patients, whereas lengths of hospital stay among this group of patients have also been increasing. Although readmission rates were not increased, the incidences were still considered high especially in comparison to other groups of patients (Sawanpracharak Hospital, 2002).

Table 2 Annual statistics of patients with cardiovascular diseases, including myocardial infarction, at Sawanpracharak Hospital, 2000-2002

Patients	2000	2001	2002
Cardiovascular diseases			
In-patients (cases)	1,879	2,254	3,054
Mortality rate (%)	11.20	13.35	19.94
Myocardial infarction			
In-patients (cases)	96	159	203
Mortality rate (%)	36.46	48.83	49
Readmission rate (%)	29.17	19.95	27.60
Length of stay (days)	5.97	6.07	6.17

As indicated, readmission rate is another issue for patients with cardiovascular diseases at Sawanpracharak Hospital. From Table 3, it is obvious that MI has got higher readmission rate than other diseases, including diabetes mellitus and hypertension.

Table 3 Readmission rate for patients with different medical diseases at Sawanpracharak Hospital, 2000-2002

Types of diseases	Readmission rate		
	2000	2001	2002
Myocardial Infarction	29.17	19.15	27.6
Diabetes Mellitus	4.6	6.27	4.27
Hypertension	2.86	0.00	1.67

Currently, the researcher is a Director of Nursing (DON) at Sawanpracharak Hospital. The major responsibility as a DON is to manage the nursing organization and nursing personnel, as well as to coordinate care with other health care disciplines for successful and effective service delivery. Other key responsibility includes developing nursing service systems that are of high quality and effectiveness, while responding to current budget situations. Previously, reports from both the hospital committee and also the nursing department at Sawanpracharak Hospital (2002) demonstrated that quality and cost had become the two major issues among many in-patients, especially those with cardiovascular diseases including MI. In relation to a quality issue, there had been problems with inadequate cardiac monitoring equipment, and ineffective collaboration at each point of health services including emergency department, intensive care unit, ward, and community services outside the hospital. In terms of a costing issue, the committee had raised the data associated with MI statistics that it had consumed high cost, high mortality rate, increased length of stay,

and a rising trend of readmission rate. From these problems, it was therefore very timely for the researcher and health care professionals at Sawanpracharak Hospital to address this problem and develop a service delivery model to improve quality of care and manage cost of care simultaneously.

In this research study, the researcher therefore would like to develop a nursing case management model that might fit well with the health care context of Sawanpracharak Hospital, which was the research setting of this study. To develop this kind of model, the research aimed to use participatory action research to seek out participation of health care providers involving in caring for patients with MI at the research setting. In addition, strategies and barriers that happened during the process of model development were also examined so as to better understand the issues surrounding the success or failure of this model. Outcomes related to implementation of this model were also measured in order to see the actual results of this model. In summary, it was envisaged that nursing case management could provide a means to effectively managing care for patients experiencing MI at Sawanpracharak Hospital.

Research Questions

1. What is a possible model of nursing case management for patients with myocardial infarction?
2. What are the outcomes of nursing case management for patients with myocardial infarction?
3. What are strategies used in the process of nursing case management development for patients with myocardial infarction?
4. What are barriers occurring during the process of nursing case management development for patients with myocardial infarction?

Purposes of the Study

1. To develop a model of nursing case management for managing care of patients with myocardial infarction.
2. To evaluate the outcomes of nursing case management for patients with myocardial infarction.

3. To seek out strategies being used in the process of nursing case management development for patients with myocardial infarction.

4. To examine barriers occurring in the process of nursing case management development for patients with myocardial infarction.

Conceptual Framework

Nursing is a discipline consisting of four pervasive concepts ; person, environment, health and nursing. The practice of nursing is a dynamic, deliberative and interpersonal process that is used to provide holistic care to clients. Nursing practice includes health promotion, risk reduction, disease prevention as well as illness and disease management. These caring practices involve critical thinking within a deliberative decision-making framework, to emphasize both clinical competencies and professionalization of nursing.

This framework is also relevant to that of nursing case management which encompasses the following functions for nurses to manage: assessment, planning, coordinating, monitoring and review (Cohen & Cesta, 2001; Powell & Ignatavicius, 2001). Within this framework, the nurse is prepared to perform functions in diverse settings and is responsive to the changing health care needs of society. This nurse is required to be pivotal to others, both patients and care providers, and assumed specific roles of a manager being accountable and responsible for actions taken within these roles (Mullahy, 1995).

The fundamental focus of case management is to integrate, coordinate, and advocate for individuals, families, and groups requiring extensive services, ensuring that patients receive appropriate, individualized and cost-effective care within a system of services (Rossi, 1999). It is a system of patient care that focuses on the achievement of outcomes within specified time frames and with the appropriate use of resources. The emphasis of care changes from a task orientation to the outcome management of medical and nursing interventions throughout an episode of illness and/or treatment. The ultimate outcomes are then measured through required outcome indicators specified for patients, providers, and payors in the health care settings.

Overall, nursing case management is a system for delivering care that a nurse case manager coordinates multidisciplinary care services, plans care, identifies expected outcomes, and helps facilitate the patient and family toward those outcomes (Cesta, Tahan, & Fink, 1998). In other words, it is a system of health care delivery designed to facilitate achievement of expected patient outcomes within an appropriate length of stay (Rossi, 1999).

From literature, the goals of nursing case management are therefore the provision of quality health care along a continuum, decrease in fragmentation of care across settings, enhancement of the client's quality of life, efficient utilization of patient care resources, and cost containment (Smith, 1998; Newell, 1996; Tahan, 1999). Generally, it focuses on a multidisciplinary clinical system that uses a registered nurse as a case manager to coordinate the care for selected patients across the continuum of a health care episode (Frink & Strassner, 1996). These registered nurses are nurses who have had expertise and experiences in dealing with specific case type as designated by either the high risk, high cost, or high volume cases. Case type means the aggregation of similar patients for the purpose of monitoring, and/or managing reimbursing issues in health care services. Diagnosis-related group (DRG) is one method of the case type classifications. Case type may be identified through reviewing distribution of cases by length of stay, specific resource utilization, and cost of health care expenditures.

In nursing case management, there are three important components attached to service delivery system in response to the determination of health and cost outcomes of patient care. These components include a nurse case manager, collaborative practice, and a clinical pathway, all of which are used to achieve best health care outcomes. Figure 2 demonstrated the conceptual framework of nursing case management, modified from Wise (1995), which is central to this research study.

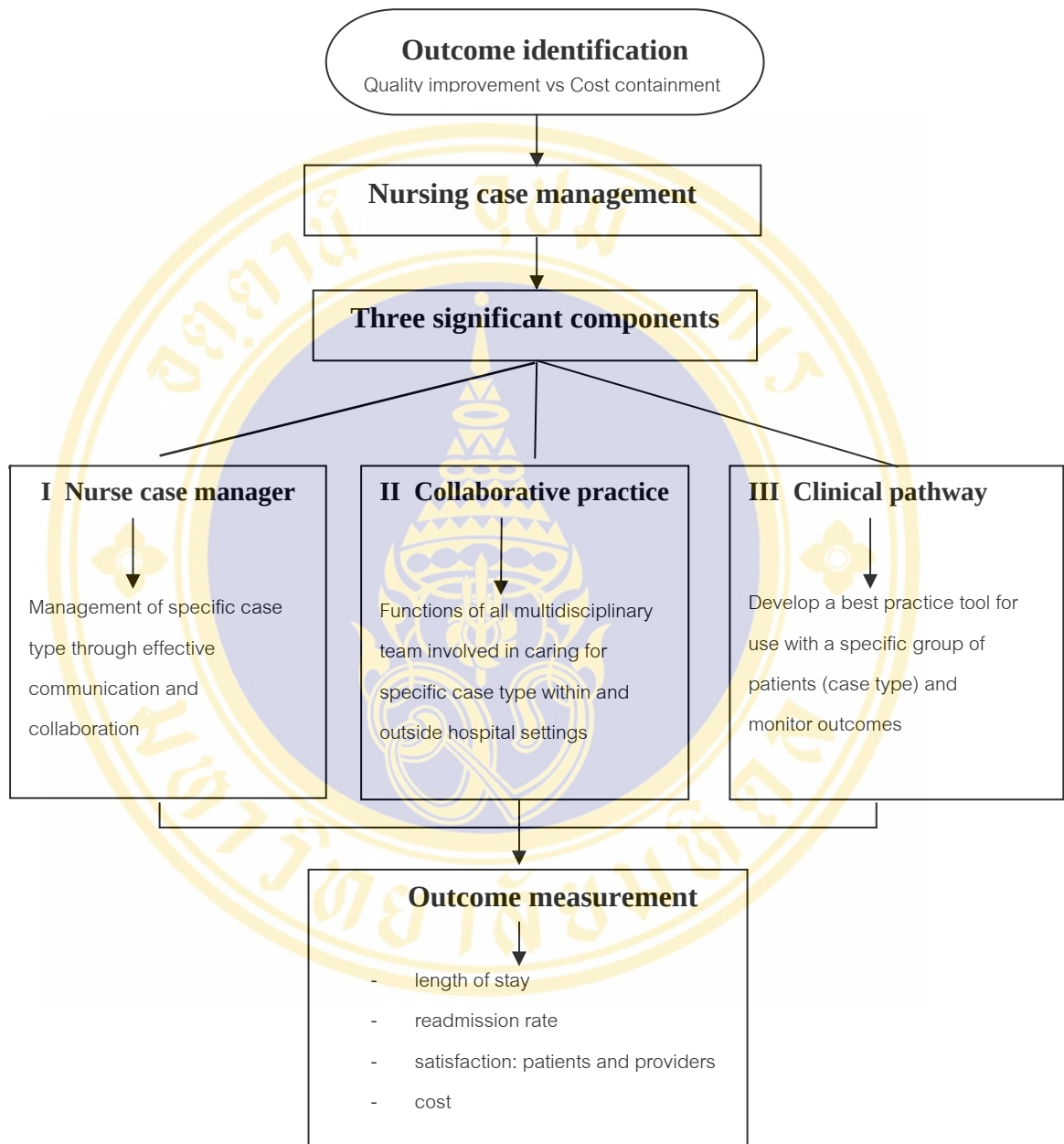


Figure 2 Conceptual framework of nursing case management

In this study, the researcher uses these three components as a basis for the development of nursing case management model at Sawanpracharak Hospital. The following elaborate on the details of each component so as to describe how a nurse case manager generally functions and combines collaborative practice as well as the use of clinical pathway in their care management for patients with myocardial infarction.

Nurse Case Manager

Generally, a nurse case manager is a registered nurse who is a member of a multidisciplinary team to help match a client's healthcare needs with available services and resources (Zander, 2002). This leads to improved continuity and quality of care and the cost-efficient use of resources. The nurse case manager monitors the quality of the service provided and adjusts the service levels / providers to provide the client with the opportunity to meet their goals (Hurlimann, Hofer, & Hirter, 2001; Jones, 2005). The nurse case manager is expected to:

- maintain rapport and communication with the client so that important information regarding the delivery of services, products and resources affect the achievement of goals can be disclosed (Zander, 2002).
- maintain professional rapport with service providers so that the case management plan can be discussed objectively, problems identified and adjustments made as needed (Jezewski, 2000)
- advocate for service system improvements by identifying and communicating gaps / poor services to program managers.
- adjust services, supports and resources to best meet to needs of the client (Raja-Jones, 2002)
- analyze and report the variations from the expected care plan (Grunder, 2003).
- recognize and respect the client's right to self-determination within legal parameters (Zander, 2002).

Collaborative Practice

A collaborative practice in nursing case management is consistent with the nursing process, although there are specific outcome measures and timeframe of service management that need to be determined before or on admission, and be evaluated after the closure of each case. The following provide steps of nursing case management that are consistent with its use in this research study (Zander, 2002).

1. Case selection. A nurse case manager will consider the right of entry of each case based on the selection criteria. These criteria may involve age, characteristics of patients, or other specific issues. Often, there are several criteria for each specific case type.

2. Assessment. When each case is selected, a nurse case manager and involved disciplines will collect patient's data from different sources, including own patient, family, medical records as well as the insurance or other financial resources. These data will be beneficial for further consideration regarding appropriate management of care for patients.

3. Coordination and development of care plan/ discharge plan. Following effective assessment, the health care team will use those data to establish appropriate care plan and treatment, based on patient's needs and problems. The care plan will focus on the plan for interventions, the person(s) responsible for the interventions, the priority of interventions and time required, the place of interventions, and effective discharge planning from the beginning of the admission. The most important thing in this planning process is cooperation and participation of patients and/or family in helping set up the care plan for themselves, along with the health care team.

4. Implementation of the plan. A nurse case manager will assist in coordinating care with other health care members according to the final care plan. This is often performed by using a tool, such as a clinical pathway or discharge planning strategy, to manage care for specific groups of patients.

5. Continuum of care and discharge plan. When implementing all interventions, it is important to continually review the care plan and treatment as patients often have their conditions changed, and thus the revision of care plan in collaboration with health care team may be crucial in some stages of the patients' hospitalization.

6. Final evaluation and post discharge follow up. When patients are discharged from the hospitals, a nurse case manager needs to evaluate the patients prior to the case closure. There are several ways of evaluation, including a home visit, telephone follow up, or collaborating with community resource persons for effective evaluation. This process is important as it helps prevent unnecessary readmission or rehospitalization of patients, especially in high risk and elderly people.

Clinical Pathway

Clinical pathway is a multidisciplinary management/ best practice tool that proactively depicts expected patient care activities carried out over an established time line for a particular patient population with a specific diagnosis. This plan of care serves as a template, allowing actual practice to be compared with the expected. Clinical pathway may be termed as critical pathway, care map, or multidisciplinary action plan (Huggins & Phillips, 1998; Powell, 2000; Rossi, 1999; Tahan, 1999). In this study, the researcher used the term ‘clinical pathway’ throughout the research process to reflect on clinical activities and decisions made across health care disciplines for MI patients.

Outcome Measurement

In nursing case management, there is a specific outcome desirable in managing care for patients, that is to achieve both quality of care and cost effectiveness. These outcomes are aimed to serve the health care consumers, providers, and also payers (Cohen & Cesta, 2001; Powell, 2000). Thus, to measure the level of accomplishment of its outcomes it is necessary to evaluate the following:

1. Health care consumers
 - 1.1 Improved health status
 - 1.2 Reduction of complications
 - 1.3 Improved quality of life
 - 1.4 Level of satisfaction
 - 1.5 Readiness of patient and family to care for themselves at home
2. Health care providers
 - 2.1 Level of Satisfaction

2.2 Effective communication and coordination

2.3 Reduction of work overlapping

3. Health care payers

3.1 Cost of care reduction or containment

3.2 Reduction of unnecessary readmission or prolonged each episode of care

In this research study, the researcher focused on these components so as to establish a possible model for managing appropriate and effective care for patients with myocardial infarction. In terms of outcome measurement, the researcher focused mainly on the level of satisfaction of health care consumers and providers, and also the cost of care and readmission rate of this case type due to limitations of timeframe of this research study.

Scope of the Study

This study aimed to develop a model of nursing case management for use with patients with myocardial infarction, and examine barriers and strategies for an application of such model in Sawanpracharak Hospital. The participants of the study were registered nurses, a technical nurse, physician, dietitian, and pharmacist who had been caring for patients with acute myocardial infarction. The study was conducted in a medical unit at Sawanpracharak Hospital, Nakhonsawan Province, Thailand.

Definition of Terms

Nursing case management model

Nursing case management (NCM) model is a model utilizing a nurse as a case manager to manage care in conjunction with multidisciplinary team for a specific group of patients, including assessing patients' health status, planning, coordinating, monitoring, and evaluating patient care as well as providing care to patient in response to problems and needs of patients. It utilizes effective communication and existing resources as a means to achieving desired outcomes in terms of quality services and cost effectiveness. The process of model development will be guided by participatory action research (PAR).

Myocardial infarction patient

Myocardial infarction patient is a patient who was diagnosed by a medical doctor as having acute myocardial infarction and was admitted in a Male Medical Ward at Sawanpracharak Hospital at the time of the research study.

Patient's satisfaction

Patient's satisfaction is a positive opinion of a patient with MI on health care services received as perceived by a patient.

Provider's satisfaction

Provider's satisfaction is a positive opinion of health care providers (team) on care provision for patients with MI as perceived by care providers.

Length of stay

Length of stay is a period from which a patient was admitted to the hospital to discharge.

Readmission (Rehospitalization)

Readmission is a number of admissions (hospitalizations) due to the same illness that caused previous admission or its complications while take place within 28 days after discharge from the hospital.

Expenditure

Expenditure is a cost of care associated with the hospitalization of patients with MI as billed by the hospital's finance department.

CHAPTER II

LITERATURE REVIEW

This research aims to develop a model of nursing case management in patients with myocardial infarction by using the following concepts and relevant research as a guide to support the basis of this study.

1. Thailand: An introduction
2. Health care system in Thailand
3. Myocardial infarction
4. Case management
5. Relevant research

1. Thailand: An Introduction

Thailand is centrally located on the mainland of Southeast Asia. It has been a very diversified country with a total population of over 60 million in 2003 (National Statistical Office, 2003). In terms of geographical characteristics, Thailand is divided into four district regions: northern, north-eastern, southern, and central (Limanonda, 1995). Each of these regions is quite different in terms of physical conditions, culture, and socio-economic structures. For instance, the northern region tends to have favorable land conditions with distinctive northern Thai culture (Limanonda, 1995). This region has become one of the most attractive geographic locations for many Thai and overseas visitors, especially during the past decade. This includes Nakhonsawan, which is one of the provinces in this region that has been prosperous with a mixed northern Thai population and advanced technology as well as modernization. Specifically in relation to health care services, there is a tertiary hospital namely Sawanprcharak Hospital, which was the research site of this study, that provides care for northern people, especially the lower part of this region.

Through the prosperity of the northern region, especially Nakhonsawan where this study was undertaken, it is recognized that this province is now leading well in both educational and health facilities. Nonetheless, through advanced technology and

modernization, there have also been changes in people's lifestyles and health status. In 2002, statistics showed that many people in the northern region had suffered from heart diseases, especially myocardial infarction. (Sawanpracharak Hospital, 2002). Myocardial infarction has become the leading cause of death in this region and thus requires effective strategies to reduce its mortality rate while enhancing quality of life for these patients in the region. To develop strategies to provide effective care for the patients, it is necessary to understand the development of health care system in Thailand and its trends in the present health care reform era.

2. Health Care System in Thailand

In Thailand, health care services in hospital institutions have been constructed by national policies primarily, and by the hospital structures secondarily (Ministry of Public Health, 1997). These two levels of health care bureaucracies play a major role in constructing how health professionals, including nurses, function and make decisions in patient care situations in the Thai health care institutions. The following sections provide detailed information about the Thai health care policies and hospital structures, and their impact on the work process of the Thai health care professionals especially nurses.

2.1 Health Care Policies in Thailand

Generally, the Ministry of Public Health is responsible for establishing health care policies in Thailand (Ministry of Public Health, 1997). In conjunction with the Thai government, this Ministry has developed National Health Plans to ensure that all Thai citizens receive and have equal access to standardized health care services (Ministry of Public Health, 1997; World Health Organization, 1993). Each National Health Plan covers a five-year program. The first National Health Plan was established in 1967 and, so far, there have been eight subsequent National Health Plans developed for the advancement of the Thai health care services. Each plan is specifically developed in response to the government plan, the socioeconomic situations of the country, and any gaps identified in previous health plans.

For instance, in previous plans the focus on specialization and medicalisation has brought an increase in health care costs. This rising cost was compounded by an increasing population demanding health care services and a lack of appropriate health

insurance (Health Development Plan Committee, 1996; Nitayarumphong, 1998). As a percentage of the Gross Domestic Product (GDP), that is the overall expenses in household livings, revealed, the national health care expenditure has increased from 3.4 percent in 1978 to 5.9 percent in 1992, and to 8.1 percent in 1998 (Ministry of Public Health, 1997; Nittayarumphong, 1998). Obviously, cost has become an issue for the Thai health authorities, especially when the economic crisis affected Thailand and other Asian countries since the late 1997 (MacDonald, 1998).

In response, the Thai government developed an urgent strategy to deal with this economic situation. This strategy included the reduction of expenditure in many areas, including health services, so as to alleviate the financial turmoil in the country (Barraclough, 1998; Sawanpanyalert, 1998). At present, health care policies have focused largely on quality of care, efficiency of system, equity and accessibility and cost effectiveness (Supchutikul & Srirattanabun, 2000). Specific strategies such as the establishment of hospital accreditation, a 30-baht policy, diagnosis-related group (DRGs), have been utilized to improve quality of services as well as the effectiveness of health care management (Glibb, 1998). It has been a turning point in the Thai health care system since 1997 when these strategies have been adopted as the so-called 'health care reforms' in the country. These include both structural and service delivery reforms, in an attempt to improve health care services and also to respond to the budget stricture in Thailand (Nittayarumphong, 1998).

2.2 Health Care Reforms

2.2.1 Structural Reforms

Most hospitals in Thailand have copied the structure of the American health care system and organizations (Sukhothaithammatirat University, 1986). Through the 7th Health Plan, many hospitals particularly in the big cities have focused on having specialized divisions, such as a medical or surgical specialty, while the establishment of linkages between hospitals and communities has received less priority.

The move to specialty divisions in the hospital structures was received favorably by both staff and clients as they perceived that these divisions would ensure quality in health care delivery. However, with budget strictures, this approach has proved to be very costly as many specialists often used high technological equipment

or special procedures which were unnecessary in some cases. In the 8th Health Plan, the Ministry of Public Health (1997) has suggested that hospitals should focus more on creating linkages with community services and sharing resource facilities to reduce the health care costs and help clients receive appropriate care at their nearest hospitals.

In terms of health care cost issues, medical care in Thailand has traditionally been under the patronage system, with the government providing free health services in the public sector for those people with a low income and government employees (Health Systems Research Institute, 1995). As a result, private health insurance has not gained much attention from the health authorities and the general public (Ministry of Public Health, 1997). A retrospective payment was a key method for the Thai government to manage with health care budget allocation. Until recent years, following the Asian economic crisis in 1997, the Thai government has realized that financially it was crucial to find more effective way to manage health care expenditures. Subsequently, the government has initiated a dual health insurance system in Thailand to act as a third party or co-payer, in addition to the government, to manage with a more pre-paid prospective payment for health care services.

The co-payer, which will be called only the 'payor' in the following chapters, is a third party who takes part in cost control and management. The payor is seen as a budget provider who allocate monies for health services consumed by patients and manage with the cost control. Payors in Thailand include both public and private sectors. For public sectors, the examples of the payors include a 30-Baht Scheme and Civil Servant Medical Benefit/Welfare Scheme. For private sectors, the examples of the payors include Social Security Scheme (SSS) and private health insurances (Jindawattana, 2001). Arguably, the payors could be powerful and rule the amount of money allocated for patients. For instance, payors may set a level of budget for specific groups for patients like in the diagnostic-related groups or DRGs. Likewise, the payors could control the ways health professionals provide care for patients, as experienced in many health care settings in overseas (Zander, 2000).

In addition, public hospitals that have privately insured patients using their services are unable to draw on these funds for services rendered. Until recent years, the lack of public monies has pushed the health administrators to look at health insurance as a solution to deal with this problem (Nitayarumphong, 1997).

Consequently, since 1990, the Thai government has put more emphasis on initiating policies and legislation in relation to health insurance in the Thai community (Ministry of Public Health, 1999). These policies aim to ensure equal access and quality of health care for all health care clients. Structural reforms now, thus, take more of the financial issue into consideration to maintain cost effectiveness in further health care development in the country.

2.2.2 Service Delivery Reforms

Along with the structural reforms, service delivery reform is another important strategy to minimize the hospital burden due to limited bed numbers for patients. According to the Ministry of Public Health (1997) reduction in hospital costs can be achieved by strengthening effective care delivery model in the Thai health care institutions. Many public and private hospitals have included these services for their clients to either provide choices of care or respond to the hospital budget management. Integrated health services which involve the health care team, families, and community support systems have become a focus of the service delivery reform to manage both patient care and budget concerns effectively. Patients are also seen to benefit from the service delivery reform by gaining integrity and power in caring matters as they can receive more integrative care and become less dependent on hospital resources and technology.

In the meantime, the government must improve quality of care in hospitals and ensure that patients will receive good care and services (Health Development Plan Committee, 1996). The development of quality management and hospital accreditation has now gradually been implemented in some health care organizations (Ministry of Public Health, 1997). Undoubtedly, the process of health care reforms will require collaboration as well as cooperation among all health disciplines, organizations, the government, clients and families, and also communities to make this revolution become effective and successful in the future.

In conclusion, health care in Thailand is now in a transitional process of restructuring in an effort to further improve health care services, and also to survive economic crisis in the country. For nurses, the constraints imposed by the economic situation and an increasing nursing shortage create the question of how to maintain quality and continuity of care with ongoing change in the health care arena. It is

therefore important for Thai nurses to consider the reform of service delivery so as to improve patient outcomes and continuum of care while controlling the health care costs. Coupled with the cooperation of multidisciplinary team and health care consumers, both patients and family caregivers, nurses will be in a pivotal position to manage quality service and effective care for patients. Specifically in this study, the main focus would be on patients with myocardial infarction, who pose important issues due to both severity of illness and greater incidences in Thailand in recent years.

3. Myocardial Infarction

Myocardial Infarction (MI) is one of the cardiovascular diseases that becomes a major health problem worldwide because of an increasing number of patients. Myocardium is the layer of cardiac muscle that forms the walls of the heart. Infarction is dead tissue resulting from ischemia due to lack of circulation. Myocardial infarction therefore is a condition when profound and sustained ischemia occurs to a portion of myocardium leading to the cells' deprivation of oxygen and then development of local death of tissue or necrosis in the involved area (Black, & Matassarini-Jacobs, 1993). Myocardial infarction is often called as a 'heart attack' because most patients with MI usually seek medical assistance due to severe chest pain. Some patients develop serious or fatal complications immediately after the attack, thus the severity of this illness is very high and requires effective health care management to assist patients and reduce its mortality (Reeves, Roux, & Lockhart, 1999).

3.1 Global and Thailand Situation

Cardiovascular diseases become a major problem in the world because of the increasing number of patients. In 1998, the statistics and situations all over the world showed that patients died from cardiovascular disease more than 15 million cases per year or 30 % in estimate for total death, while the first mortality rate of cases in the world was heart disease (Chooprapawan, 2000).

In Thailand, cardiovascular diseases have been a significant health issue for the past decade, with the death rates rank from first to fifth all over the country, and these trends are likely to increase (Technology Development Office, 1999). From a system of international classification disease: the first mortality rate was heart disease;

second was cancer, hypertension and liver disease; while the number of these patients in 1998 were 119, 93, 22 and 17 cases per day, respectively (Chuprapawan, 2000).

Also, a report of the Ministry of Public Health showed that non-communicable diseases, especially cardiovascular diseases, have trends to increase mortality rate. Since 1994 to 1997 mortality rate of myocardial infarction has increased from 62.5 to 72.1 cases per 100,000 men. In 1998 myocardial infarction was the first cause of death in people aged over 60 years (Ministry of Public Health, 2000).

In recent years, the predictable trend of major problems in cardiovascular diseases has also increased. From 1992 to 2000, it was found that the mortality incidences of heart diseases and heart failure increased from 57.6 to 82.6 cases per 100,000 men. The prevalence rate has increased from 56.5 cases per 100,000 men in 1985 to 168.0 cases per 100,000 men in 1997 and was still continuously increasing (Chuprapawan, 2000).

The statistics of healthcare center in rural Thailand showed that the north had highest morbidity of cardiovascular diseases (96.5 %), compared to the south 94.3 %, and the east 45.6 %; respectively (Hospital Manual and Public Health Statistics, 2001).

In the north, especially at Nakhonsawan province, it was found that among the numbers of death classified by international classification disease and gender in 1999, heart diseases were the first cause of death with 697 cases (Nakhonsawan province statistic, 2000). and the highest mortality rate with 60.37 cases per 100,000 men (Nakhonsawan Provincial Public Health Office, 2000), which was the highest mortality rate in the north.

3.2 Sawanpracharak Hospital Situation

Sawanpracharak hospital, where this study had undertaken, is a tertiary care hospital in Nakhonsawan province. From statistics of the patients who had attended at Sawanpracharak Hospital, the number of patients with cardiovascular diseases was ranked fourth, while the number of patients who attended at outpatient department and inpatient department increased every year. The mortality rate of this case type was the fifth in the hospital and first in the medical department. Table 4 showed the mortality rate, morbidity rate, length of stay and readmission rate in one month of myocardial infarction patients at Sawanpracharak hospital from 2000 to 2002 as follows:

Table 4 Morbidity , Mortality, Length of stay, and Readmission Rate of Myocardial Infarction Patients, 2000-2002

Year	Morbidity rate (%)	Mortality rate (per 100,000 cases)	Length of stay (days)	Readmission rate in 1 month (%)
2000	36.46	101	5.97	29.17
2001	48.43	192	6.07	19.15
2002	49	216	6.17	27.6

Source: Sawanpracharak Hospital Annual Report, 2000- 2002

Besides, data from accident- emergency unit from April 2001 to March 2002 showed that the greater severity symptoms of myocardial infarction increase fatal rate and thus these patients often died before arrival to hospital. In Muang district, there were 57 patients who died before arrival to hospital or at accident- emergency unit after experiencing chest pain, myocardial ischemia, and myocardial infarction. Overall, myocardial infarction represented the serious cause of deaths among medical patients at the accident- emergency unit here (Sawanpracharak Hospital , 2002).

From these data of MI patients in Thailand and at Sawanpracharak Hospital, it was clear that MI is a disease with high severity and high mortality rate that has effects onto patients, families and the nation in both quality of life and economic as follows:

3.3 The Effects of Myocardial Infarction on Patients

3.3.1 The Effects of Myocardial Infarction to Physical Functions:

3.3.1.1 Chest Pain: Chest pain always occurs while carrying out activities which produce a by-product from anaerobic metabolism, including lactic acid and potassium. It may present as a refer pain from anterior precardium to neck, mandible, shoulder, or arm. The duration varies from 2 to 3 minutes or more than 20 minutes. Chest pain can be classified by activities into 4 stages as follows: (Canadian Cardiovascular Society, 1996; Reeves, Roux, & Lockhart, 1999)

Stage I: Chest pain when having high-level activities

StageII: Chest pain when having middle-level activities such as

speed walking, stress

Stage III: Chest pain when having low-level activities such as cleaning

Stage IV: Chest pain when having no activities

3.3.1.2 Dyspnea and fatigue: can be occurred at rest, doing activities or post activities as a result of a left ventricle dysfunction. The hearth cannot pump enough blood to the body while doing any activities. Dyspnea can be classified into 4 stages as follows: (American College of Sport Medicine, 1991)

Stage I: Mild-level with a patient's feeling of slight dyspnea

Stage II: Moderate-level when others can see patient's dyspnea

Stage III: Middle-level dyspnea when having little activities

Stage IV: High-level dyspnea when one cannot have activities

3.3.1.3 Faintness and weakness: The sensation of fainting or weakness is likely to occur because of low cardiac output, coupled by levels of lactic acid and a by-product produced from anaerobic metabolism, which accumulates in skeletal muscles.

3.3.1.4 Symptoms from side effect of some medications/ limitation of activities: For example, vasodilatation drugs, beta-blocking drugs, calcium channel- blocking agents, and angiotensin converting enzyme inhibitors, may provoke headache, palpitation, dizziness, flushing, or postural hypotension. The sensation of these symptoms will usually improve with time and patients can tolerate the drug's effects. However, some patients may need changes in dosage of their drug therapy.

3.3.2 The Effects of Myocardial Infarction on the Role Functions

The symptoms of myocardial infarction made some patients have chest pain, dyspnea when doing activities which disturb their lifestyle and work (Beach, et al., 1996). Some patients were afraid of doing activities because they were fearful to symptoms occurrence or serious risk to their health.

Myocardial infarction could also have a great effect on role functions of the patient as a father, husband, family leader, or others. As family is a basic institute of social environment, a long- term severe illness or physical dysfunction of

the patient might effect on their family roles and impact on their interactions with other family members during and after each episode of illness (Wongvivat,1993)

In relation to sexual relations, many patients do not dare to have sex because fear to die, recurrent chest pain, dyspnea and fatigue. A study in overseas found that after having myocardial infarction, many patient decreased their sexual activities, with 51 % of MI patients were afraid of having sex. A lot of patients perceive that having sex was a risk of health so they were fearful to die during having sex, which cause stress and anxiety with this family role lead to misunderstanding between a couple (Junvisate, et al., 2001).

3.3.3 The Effect of Myocardial Infarction on Mental and Emotion

Post being diagnosed with myocardial infarction, some patients might have depression and insomnia and often used sedatives. Each patient has different in own perception, definition and response to the disease. Some patients denied that they was not having myocardial infarction and still held risk behaviors. Some patients have fear to die and do not dare to do anything. Some patients accept and are ready to improve their behaviors. The effect of myocardial infarction was decreased self-esteem which has an impact on their goal of life and work productivity. In overseas, a study found that five major problems of MI patient include fear to die, physical impairment, emotional and personal problems, and anxiety (Bjerkeset et al., 2005).

3.3.4 The effect of myocardial infarction on economics

As mentioned earlier, MI often leads to dyspnea and fatigue, thus a number of MI patients have to stop work leading to a high absenteeism rate. In some cases, MI patients needed to be treated by streptokinase or cardiac catheterization which consume high cost of payment. Obviously, myocardial infarction has a direct effect on patients with decreased own incomes, on health care institutions with increased cost of care, and has effects on the national economics as a result of loss of work productivity (Junvisate et al., 2001).

Myocardial infarction consumes greater cost than other chronic illness because heart is a vital organ. Thus, when patients have severe MI symptoms it is necessary to be treated in a tertiary care hospital and specialized unit (i.e., ICU,CCU), consuming high fixed cost per unit. Fixed cost per unit of a tertiary care hospital was 6,949 bahts, while the secondary care hospital was 4,909 bahts; respectively

(Khungsawad, 1999). From a report of a provincial hospital department in 1997 it was found that cost of care per case in hypertension, diabetic, myocardial infarction with chest pain and myocardial infarction with coronary artery bypass graft was 1670.09, 1670.09, 3195.38 and 34,008.60 bahts respectively (Chuprapawan, 2000).

In 2001, Sawanpracharak Hospital spent 1,494,600 bahts in treating MI patients including medication, food, room, and other health resource expenses, while collecting only 586,176 bahts from the DRGs (Sawanpracharak hospital, 2001). These disparities demonstrated that myocardial infarction patients consume high cost of hospital care. Therefore, it was necessary for Sawanpracharak Hospital to seek a strategy to control cost and enhance quality of care for this group of patients. Case management, which has recently been introduced to the Thai health care system, was seen as a method of care delivery that might work more effectively in response to the health care needs for both quality and cost issues.

4. Case Management

4.1 Definitions of Case Management

There are various definitions given by several authors in regard to the meaning of 'case management'. These definitions may be referred to as a patient care delivery system, practice, or process as follows:

4.1.1 Patient Care Delivery System: Case management is system whereby the cooperation of a multidisciplinary care team is the focus of the care delivery. It is concerned with more than simply monitoring or limiting the volume of service (Cohen & Cesta, 2001) but aims by case-type to achieve a purposeful and controlled connection between quality of care and the cost of care by standardizing appropriate use of resources (Ovllivas, Tongo-Armanasco, Erickson & Harterd, 1989).

Case management was a collaborative process which screening or case finding, comprehensive multidimensional assessment, care planing, service coordination, implementation of the plan, monitoring and reassessment (Trella, 1993; Kane, 1988).

4.1.2 System: Case management is a system of health care delivery designed to facilitate the achievement of expected patient outcomes within an appropriate length of stay. It's goals are the provision of quality health care along a

care continuum, decreased fragmentation of care across setting, enhancement of the clients quality of life, efficient utilization of health resources, and cost containment, while a nurse is responsible for patients care across an episode of illness

4.1.3 Process: Case management was a dynamic strategy for organizing services across provider lines, between people and systems (Donovan & Matson, 1994) or a method of managing the provision of health care to members with catastrophic or high cost medical conditions. The goal is to achieve continuity and quality of care as well as lower cost (Cohen & Cesta, 2001).

4.1.4 Practice: Case management focuses on the nursing activities of coordination, advocacy, and referral. These activities involve facilitating services delivery on behalf of the client, communication with health and human service providers, promoting assertive client communication, and guiding clients toward use of appropriated community resources (Martin & Scheets, 1992)

Although there are various definitions of case management but in this study, case management is defined as a method of a clinical system process that emphasizes quality of care in a cost-effective manner. The ultimate goal is to achieve tangible outcomes and enhance patient outcomes (i.e., enhancing the functional status, self-care abilities, patient/ family/client satisfaction and system stabilization) by collaborative practice and cost containment (Cohen & Cesta, 2001; Zander, 2002; Tahan, 1999; Olivas, et al., 1989).

4.2 Development of Case Management

Since 1860, case management (CM) has been applied to immigrants in USA (Kersbergen, 1996) to promote effective coordination between healthcare centers. After the second world war (1920), it was found that a lot of soldiers had had psychological problems. Case management was applied to these soldiers at home by a social worker. In 1930, public health nurses cooperated with the social worker to apply CM with chronically ill and psychiatric patients at home. The goal at that time was maintaining quality and continuum of care for these patients (Sirinakhon et al., 2000).

Since 1980, case management has been widespread in the western health care system. At that time a health care reform policy was launched to enhance effective care and cost outcomes for all acute and chronically ill patients, as well as the elderly.

The diagnosis related group (DRG) system and case management were adopted to help improve efficiency and control length of stay by standard of cost in each disease.

As indicated previously, nursing case management was applied to chronically ill and psychiatric patients in the early development of this care delivery model. In those days, a nurse was a case manager because nurses have clinical and management skills, aims to develop quality of care, serve patient needs and satisfaction in cost effectiveness. Nursing is potentially the strongest candidate for the role of case manager in almost any setting. Nursing's intrinsic strength comes from several sources, including (1) its vigilant attention to delivering the detailed processes that convert patients problems to outcomes, and (2) the presence around the clock for coordinating the interventions, whether planned or newly – determined, that patients and/or their families need from multiple departments in the institution.

Nowadays, case management was applied to the elderly, obstetric, pediatric, surgical patients because healthcare personnel found that case management improves quality of care and decreases cost. From previous western studies, it was found that following the utilization of case management length of stay, cost, readmission rate often were decreased with a better customer's and care provider's satisfaction. Now and then, case management has been widespread for its application in western communities and extended to the eastern countries and Thailand.

4.3 Characteristics of Case Management

According to Wise (1995), case management consists of three main components including client, process, and outcomes. These components are presented as follows:

Client: case management focuses on patient's needs, continuity and comprehensive care, while including family as part of the team to establish appropriate care plan and assist in post discharge issues.

Process: case management process is based on an outcome-based focus on collaborative activities of multidisciplinary team using clinical pathway and a case manager, whose role is coordinating care from admission to discharge, decreasing work overlapping, and enhancing cost- effective care in appropriate use of resources, availability, accessibility of healthcare services.

Outcomes: the aim of case management is to keep patient and their family adjust successfully to illness within a cost effective manner, and to pre-determine what should be done for patients to achieve best results of the care delivery.

4.4 Case Management Process

The steps of the case management process are described below. (Bower, 2002; Powell, 2000 ; Cohen & Cesta, 2001)

1. Assessment and needs identification
2. Planning the care activities and establishing the expected outcomes
3. Implementation of the plan of care
4. Advocacy
5. Facilitation, coordination, and integration of patient care
6. Outcomes evaluation and monitoring process

For the case management process to be effective, the case manager, patient and family must function as a team and have effectiveness of communication.

4.5 Case Management: Classification by Setting

Case management can be classified by settings into four models as follows:

- 1. Hospital- Based:** The components of a hospital- based model are discharge planning, utilization review, and quality improvement.
- 2. Unit- Based:** This model focuses on a care management process for a specific group of patients within a special unit (i.e., medical ward, intensive care unit).
- 3. Community- Based:** This model focused on effective resource utilization and continuity of care after discharge.
- 4. Disease Management:** The goal of this model is to decrease re-admission rate and severity of disease, and to enhance self management of patients. The most important component of this model is health education for disease prevention.

From the characteristics of the MI as mentioned and the time limitations, the researcher decided to develop a case management model in MI patients within a unit-based setting at Sawanpracharak Hospital. The study then took place in a ward where myocardium infarction patients stayed and consented to participate in the study.

4.6 Models of Case Management

Since 1860, there have been studies of several models of case management such as Social Science models, Medical models and Nursing used in the global health

care service systems. The sample included chronically ill patients (i.e., cancer, AIDS), children and the elderly (Lamb, 1995; Sowell, 1994). The study focused on a systemic process to achieve quality and continuity of care, and reduce cost (Huggins & Phillips, 1998; Lee, Mackenzie, Dudley-Brown & Chin, 1998; Powell & Meadows, 2000; Rossi, 1999; Tahan, 1999). The differences of each model are as follows:

1. Social science model: This model focuses on long-term care of specific patients to avoid unnecessary admission into hospital. Context of social science includes psychological problems of elderly and ambulatory patients in community. Physician, nurse, social worker, and psychologist can be a case manager.

2. Medical model: This model focuses on patients who have high risk of readmission to hospital. Medical model is often used in a managed care system either in public or private sector, where a patient can have nurses or physicians as a case manager.

3. Nursing model: Nursing model was initiated in 1980 (Zander, 1988; Zander, 2000) by applying a characteristics of hospital-based case management which focuses on patient who have complex problems and needs, and require specific and high technology of care. Nurse is generally a case manager (Newell, 1996).

4.7 Case management: Nursing Models

At present, nursing models have several sub-models as follows: (Cohen & Cesta, 2001)

1. Primary Nurse Case Management Model: It was first used in the New England Medical Center, Boston, USA. The model focuses on achievement of clinical and financial outcomes within designated interval, length of stay designated by DRG, accomplished by the care giver as case, management processes per case-type, continuum of care from admit to discharge.

2. Leveled Practice Model: The model focuses on the role of a case manager (nurse) in coordinating, supervising, and maintaining quality of care, but does not provide direct care for patients.

3. Saint Vincents Hospital and Medical Center Model: The model focuses on analysis of variance from pre-admission to post-discharge.

4. Tucson Medical Center Model: This model has been developed since 1989s. Key components were adapted from the New England Medical Center and

Hospital (NEMCH) model which aims at managing case type to achieve quality of care and controlling resource utilization among the case management team.

Considering specific context of the organization in this study, the researcher applied a nurse case management model to manage with myocardial infarction patients. The study focused on the development of a nursing case management in a ward setting in Thailand with the emphasis on the three components including collaborative practice, clinical pathways, and case manager.

4.8 Case Management: Components

The important components of case management are collaborative practice, clinical pathway, and case manager. The following provides details of these three components.

4.8.1 Collaborative Practice: Collaborative practice is necessary for case management to connect and lead the multidisciplinary team to achieve patients to expected outcomes. The effective mechanism of communication and coordination among the care team is clinical pathway and roles of case manager.

4.8.2 Clinical Pathway: It is necessary for effective work among the multidisciplinary team. As case management is collaborative process that requires effective communication to prevent work overlapping. Clinical pathway or critical pathway is a plan or instrument for case manager for use to ensure quality and appropriate cost of care. Generally, clinical pathway is developed by multidisciplinary team so that implementation of the plan of care can be achieved (Zender, 2002). Nurse case manager will coordinate, facilitate and solve the problems that may have caused a delay of health care services. Patients will be pre-determined bed days and hospitalized care services so as to decrease length of stay and cost (Huggins & Phillips, 1998; Powell, 2000; Rossi, 1999; Tahan, 1999).

The utilization of clinical pathway consists of many aspects as follows:

1. Guideline for multidisciplinary team to take care of patient, perceive their responsibility, and decrease the overlap of work and documents
2. Plan of care through hospitalization, which includes systemic discharge planning and patient health education
3. Guideline of care which focuses on patient's needs.
4. Use of continuous quality improvement to ensure quality of care

5. Use of guidelines to control cost of care
6. Data for patient information and clinical changes, to decrease staff confusion and increase patient satisfaction
7. Data for monitoring, evaluating and developing quality of care

Usually, clinical pathway has four important components as follows:

Part I: Symptoms or diagnosis by International Classification Disease (ICD) or Diagnosis Related Group (DRG)

Part II: Patient's problems (physical, mental, emotional and social) in short and long term.

Part III: Expected outcomes at discharge or each period

Part IV: Aspects of care which are specialized for disease or symptom management in each period (i.e., day, minute or week).

Clinical pathway is developed by cooperation of multidisciplinary team to serve specific purposes of the healthcare institutions. It is used within a specific context of each setting, thus each institution has to develop or modify appropriate clinical pathway for its own health care context and environment.

4.8.3 Case Manager: In the case management process, everybody can be a case manager but a consensus from international literature stated that a registered nurse was the most appropriate person because the nurse approached patient all 24 hours, has clinical knowledge, can professionally assess patient's needs in four dimensions: health promotion, prevention, therapy and rehabilitation. Besides, the nurse could be an effective care coordinator with physicians, other nursing staff, and health care team (Cohen, 1991; Bower & Jacobson, 2002; Powell, 2001).

With respect to qualifications of nurse case manager, the American Nurse Association criteria (1988) suggested that a nurse case manager should have a bachelor degree or more, hold special qualifications related to case type, and work for 2,000 hours or more per year. In the past decade, there was a credentialling system of nurse specialists or case managers for those working for 4,000 hours or more. Also, they must pass the nursing examination and renew the license every five years (Lee, Mackenzie, Dudley-Brown, & Chin, 1998). In Thailand, there was yet a stipulation in qualifications and experiences of nurse case manager. Thus, the information of this

study might be one of the suggestive data to stipulate a formation of this position and its qualifications of nurse case managers in Thailand in the future.

4.8.3.1 Roles of Case Manager

Case managers usually function as conflict managers, assume a great responsibility within the service delivery system to act professionally when dealing with critical issues. A master's degree should be the minimum qualification necessary for the role of case manager. This condition should not preclude the use of para-professional case managers, such as social workers, who carry out the less sophisticated tasks of case management under the direction of the professional nurse case manager.

From the literature, there are essential activities in defining the roles of the case manager as listed below (Hurlimann, Hofer, & Hirter, 2001; Jones, 2005; Raja-Jones, 2002; Gibson & Bamford, 2001).

1. Manager with authority/autonomy: Case manager should derive their authority from legal mandates that create a framework of formal agreements among the service providers.
2. Educator: Case managers require an educational background in health care policy, health care reforms, health care services, community resources, those primarily concerning with the understanding of human and group dynamics. Ongoing inservice training is essential for maintaining their skills and high level of motivation.
3. Therapist case manager: The case manager may act as an administrative, clinician, and conflict manager.
4. Client advocate: Case managers should be committed to helping clients to their best interest, while being aware of the constraints inherent in the service delivery system.

In conclusion, the roles of case manager are to serve both patient and system by facilitating quality of care in a cost-effective manner through coordination and communication.

4.9 Case Management: Strengths and Weaknesses

4.9.1 Strengths of Case Management: The strengths of case management result in patients receiving high quality in health care services with low

cost from appropriate use of resources, continuity of care, decreased length of stay and health education to encourage patient for self-care and decreased admission rate. Health care personnel are satisfied in work and opportunity of case manager to extend the role.

4.9.2 Weaknesses of Case Management: Case management could create conflict if there are gaps of communication of the care team. Some activities in the process of case management tend to overlap among others professional jobs (i.e., social worker). If case managers do not have effective conflict management or have too many patients to look after, the result of case management may affect health care quality and efficiency.

5. Relevant Research

5.1 Case Management in Overseas

Bower (1992) studied case management in Hennepin Country Medical Center (HCMC), Menisotar, USA. The result showed that case management could save more than US\$ 1,000,000 and increased quality of care. In this study, patients after post surgery with total hip replacement and cardiovascular disease (except transient ischemic attack) received case management with significant reduction in length of stay, cost and complications.

Collier and Early (1995) explored caring by multidisciplinary team to the alzheimer's patient who had high risk to admission with degenerated perception. The multidisciplinary team compounded with physician, nurse, social worker, with nurse as a coordinator. The multidisciplinary team assessed physical, psychological, nutrition and family data, planning, service coordination/referral and persuades family members to take care of patients.

Holtzman, Bjerke and Kane (1997) studied the application of clinical pathway to kidney transplantation patients focusing on length of stay and patient care. Data were collected before, during and after the experiment. The sample was 548 kidney transplantation patients from a university hospital that were divided into two groups: a) 178 kidney transplantation patients who received kidney from dead donor; and b) 178 kidney transplantation patients who received kidney from alive donor. They

found that after implementation the length of stay, cost, complications/ infections decreased.

Ireson (1996) studied the impact of clinical pathway to patient at St. Joseph, Kentucky, USA. The sample included 128 post-operation of total knee or hip replacement patients who were divided into two groups (experimental, comparison group), The results showed that the experimental group had length of stay and cost less than the controlled group.

Kite-Powell et al. (1996) studied case management in patients with chronic lung diseases who used of long-term respirators. It was found that multidisciplinary team in case management could increase quality of care and decreased cost.

Leininger (1996) studied the application of clinical pathway in post operative total hip replacement patients in a public hospital in Pennsylvania, USA. The result showed that the application of clinical pathway could decrease cost US\$ 6,000 per case, a length of stay from 11 to 6 days, and increase patient satisfaction to 90 %.

Mery and Kelly (1997) studied case management in 107 post-operative coronary artery bypass surgery patients. This research was a quasi-experimental study. Data were collected from registered nurses in four wards. After the experiment, it was noted that the experimental group (used case management) had satisfaction, perceived quality of care and autonomy more than the controlled group (used team nursing) .

McClaran, Lam, Snell and Franco (1998) explored perceptions of multidisciplinary team on case management in four aspects (assessing patient's need, providing caregiver education, coordinating with related organizations, monitoring cost of care). Data were gathered from 141 staff (manager, physician, nurse, physical therapist) from eleven hospitals by questionnaires. It was found that multidisciplinary team had positive perceptions with case management. They perceived of assessing and serving patient's need first and controlling cost of care after.

Michal, Barbara, Alice and Catherine (1996) studied case management in chronic illness elderly. They found that the experiment group (27 chronic illness elderly) was readmit 12 cases, 18 cases come to see doctor at emergency room, length of stay 8 days, cost 222,688.07 \$, home visit by health care team 147 cases.

Micheels, Wheeler and Hays (1995) indicated that case management could decrease cost and length of stay. By retrospective studies in ten months of 78 post-operative gastrointestinal tract patients.

Silverstein (1998) studied case management system at St Peter Medical Center which aimed to achieve quality of care in a cost-effective manner, serve providers (health care providers), and customers (patients/family). After the application of multidisciplinary team and clinical pathway, the length of stay, cost, and readmission rate decreased. The cooperation from physician and others contributed to the success in this process.

Topp, Tucker and Weber (1998) studied case management in 88 congestive heart failure patients. The result showed that in the experiment group the length of stay decreased.

Wanda (1999) confirmed that the impact of case management to case manager was increased satisfaction and quality of care, and decreased cost. This study was conducted by a survey with 302 case managers from 139 hospitals in the US by the American Hospital Association.

Yaksic, Dewoody and Campbell (1996) assessed the outcomes of case management in patients with long-term use of respirator at trauma center. The result showed that coordination of multidisciplinary team led to increased quality of health care services with length of stay decreased from 74.5 to 41.9 days, and cost was decreased from US\$ 189,089 to US\$ 107,019.

5.2 Case Management in Thailand

Yeensuk (2001) studied the result of case management at the obstetrics department, King Prajadhipok hospital, Chanthaburi performed by nurses and noted an increase in patient's satisfaction. The sample included five registered nurses and 40 post-operative cesarean section patients. However, the result showed that there was no statistically significant difference between pre and post implementation outcomes.

Norranarapun (2001) explored case management in relation to autonomy and satisfaction of nurses and patient's satisfaction at a health science center, Burapha University. The sample were four registered nurses and 40 patients. It was found that there were statistically significant difference between before and after experiment in

nurse's autonomy and patient's satisfaction but no statistically significant difference in nurse's satisfaction.

Souchai (2000) explored case management focusing on teamwork of the health care team, cost and length of stay in 40 post operative herniorrhaphy patients at Priest hospital. The study showed that after the experiment, the experimental group had higher scores in working as a team, and lower in cost and length of stay than the compared group.

Tapanoumwong et al. (2000) indicated that there was no statistically significant difference between the experiment and comparison group in patient's satisfaction, health care team's satisfaction, length of stay and complications from the results of clinical pathway utilization in twelve closed fracture femur patients at Chiangray Prachanukrau Hospital.

Khupimay (2000) stated that case management could decrease cost and complications from patients on respirator and increase health care team's satisfaction. The sample were 30 patients who had been on respirators and 37 staff from health care team at Bhumibol Adulyadaj Hospital.

According to the review of literature in Thailand, there had been a number of studies of case management in quantitative methods which evaluated outcomes more than the studies that were designed for development of a case management model. Meanwhile, there have been little if any of the Thai studies that were conducted with a focus on case management in patients with myocardial infarction in the past. As a consequence, the researcher was interested to conduct this research with an attempt to develop a nursing case management model with a specific case type of patients with myocardial infarction in Thailand, that was congruent with current needs of the health care reforms and also the specific context of the hospital under study.

CHAPTER III

METHODOLOGY

This study aimed to develop a nursing case management model by using participatory action research as a research methodology. This chapter describes the concepts of participatory action research, the data collection process, data analysis, ethical considerations, and issues of validity and reliability

Action Research

The term ‘action research’ was used in 1946 by Kurt Lewin, a social psychologist, and has been adopted as an umbrella term to represent a variety of similar research strategies that evolved from such different professional disciplines, specifically social psychology, the natural sciences, organizational science, social planning and education. Research processes that cluster under the action research umbrella include action inquiry, action learning, and participatory research (Reason & Bradbury, 2001).

Thus action research is a label that can be applied to a range of research endeavors that share some common interests in the relationship between theory and practice, the value of participation and the capacity of research to address practical problems in specific situations. These different styles of action research include technical, practical, and participatory action research. The technical action research focuses on top down action, while the practical one gets more involvement of some expert in the area of research working with the researcher (Kemmis & McTaggart 1990). Participatory action research is more targeted at the participation of all stakeholders in the research concerns and thus require a great deal of collaborative practice.

Participatory action research addresses three concerns raised by clinical nurses. Participatory action research studies are:

- situational; that is, they address the specific needs in context.
- participatory and so involve all those who are interested in, or will be affected by, the outcome.
- self-evaluative enabling individuals and groups to assess their own contribution to, and the functioning of, the research activity.

Street (1995) noted that there have been two different styles of participatory action research have emerged in Thailand. The first style as typified by the work of Chuaprapaisilp (1998) has strong links with the participatory and critical styles adopted by Kemmis & McTaggart (1990) and Winter (1997). This style has strong links with qualitative approaches to data collection and management and is conducted as an independent study. The second style as evidenced by Jirapaet (2000) uses a much more quantitative or mixed method approach to action research, using it as one aspect of a controlled trial or in relation to a time series study or pre-test post-test design.

Characteristics of Participatory Action Research

Health care professionals have developed styles of participatory action research that are somewhat different to those adopted by management, education or psychology. These forms include the following characteristics.

Issue and Outcome Based

Action research specifically addresses practical health issues of concern to a number of people. The intention is to provide practical knowledge and strategies to improve health care and the environments in which care is conducted. Such issues may be based in a variety of contexts: clinical practice, community action, health promotion, health education, primary health care, management or service delivery and address diverse topics including sexuality, healthy ageing, cultural diversity, homelessness, and mental health. (Tadtong, 1999)

The outcomes of action research are context specific and may be as clinically focused as management of urinary incontinence with women who have multiple sclerosis or as broad as the creation of a learning culture in a hospital. (Koch, & Kelly, 1999)

Cyclical

Action research generally proceeds through cycles of planning, action, data collection, analysis and critical reflection; followed by re-planning with the process repeating until the situation improves. In this way there is an evaluation and reflection process after every action has been taken (Kemmis & McTaggart, 1990)

Action research is a form of inquiry which facilitates ‘learning by doing’; theory and action are in a continuing interactive partnership . The interactive process is sometimes depicted as a circle but more often a spiral shape is adopted. A spiral research process that enabled action to be carefully monitored, analyzed and evaluated as the basis for reflection on the success of the plan and the possibility for modifying it and starting another cycle of planning, action, data collection, analysis, evaluation and reflection. This cyclical process would continue until the situation had improved. Open-ended spirals illustrate how research, education and action are combined in a process which allows for the researcher to understand the effects of small changes before they initiate larger ones. The spiral design used in this study is not dissimilar to Lewin’s original design and was adapted from such spiral of cycles (Street ,1995)

Hart and Bond (1996) suggest that although there is an integral connectedness between research, action and evaluation as action research projects develop one or other of these dimensions dominate. Thus at times the inquiry aspect governs the process whilst later the focus is on implementing and monitoring action; likewise the evaluative aspect becomes the focus at other points of the spiral.

Knowledge-in-Action

Action researchers begin with everyday experience and consider how to act in intelligent and informed ways in a socially constructed world. The needs articulated through action research by adolescents and their parents were in contradiction to those discussed by health providers and teachers. This revelation of previously silenced knowledge not only facilitated service revision but also challenged the notion that the professional elite holds the ‘knowing power’. Thus action researchers acknowledge the interrelationship of knowledge and power and seek to empower themselves and others through access to practical and theoretical knowledge(Holter&Schwarz-Barcott,1993)

Participatory and Democratic

Rather, than being conducted by professional researchers with the expectation that practitioners will then adopt their recommendations, action research involves all those who will be affected by the new knowledge or the changes. In this way action researchers take account of the distinction made by Freire (1982) between viewing people as a research sample or population or subjects where they become the objects being studied and the notion of participants or co-researchers; capable of decision making, inquiring, knowing, taking action and owning the outcomes.

In fact Reason and Bradbury(2001) contend that all participative research is action research based on the premise that humans engage in mutual knowledge generation and collective action. It is generally regarded as democratic because of the involvement of all stakeholders at various levels in this process of theorizing and implementing action.

Educative, Developmental and Responsive

Action research is about 'learning by doing'. Effective action research develops over time as individuals develop their research skills and as small research communities develop in health care settings. It is a developmental, enquiry based form of learning for those involved in the process but it is also educative in the sense that if change is to be sustainable then others need to be educated in the new knowledge and strategies.

The cyclic shape of action research means that all stakeholders can respond to any unintended consequences as the action is implemented. As action research draws upon both quantitative and qualitative research strategies to monitor action then the best-fit strategies become available for data collection and analysis at different points in the spiral. This can lead to further theorizing about the context and the way that health relationships are constructed and constrained. It also means that the initial findings can be taken to wider audience for comment and modification.

Credible, Sustainable and Transferable

Unlike quantitative research, action research is unable to generalize and predict the answers to health problems. Its value lies in its capacity to respond systematically to health concerns and involve all stakeholders in the process so that an effective

solution can be implemented that is owned by all (Mills,2000). Action research is considered credible and valid if problems are solved and participants increase the control over their own lives (Chuaprapaisilp,1998)

Sustainability is a key concern of any innovator. Many traditional researchers find that recommendations are not adopted and management find that their new strategies do not last. Action researchers endeavor to ensure that their improvements can be maintained over time. The series of cycles assists in this process as they provide the opportunity for stakeholders to fine-tune the interventions to better fit the emerging needs of the situation (Mills, 2000).

Although it is context-specific the ‘research’ part of action research enables participants to develop and test conceptual models and theories that can be transferable to other contexts with similar issues. This capacity for the transfer of knowledge and techniques is part of the strength of action research (Mills, 2000).

Participatory Action Research Process

Participatory action research process consists of the set up of research concern or problem, preliminary investigation, planning action, implementing action, data collection and analysis, revised plan, reflection and dissemination (see Figure 3). The following provide details of each step of the research process (Street,1997).

Research Concern

All health research is driven by concerns about an existing situation. Sometimes the intention is to predict patterns and suggest solutions; sometimes the aim is to understand and illuminate the meanings of health care conditions; and sometimes the intention is to change or improve a situation in a way that is effective and sustainable. Action research begins with a general concern. This often translates as a gut feeling that things could be better. However the participatory nature of action research demands that this concern is not the interest of one individual but a shared concern to improve a given situation. For example gerontologists, nurses, doctors and pharmacists may share a concern about the high incidence of polypharmacy in the elderly and decide to work with residents and their relatives to address this. Or a gynecologist may be concerned about the health of women at menopause in Thailand

and work with the health team and groups of women to develop some strategies to promote healthy ageing in these women using action research.

Preliminary Investigation

A thorough preliminary investigation enables the research team to capture some information in order to understand the current situation. This process generally involves:

- a literature review of the literature on the topic including government or hospital reports
- an analysis of the history to the problem that might include the health care context, the organizational procedures and practices, the rationale for the previous solutions to the problem, and issues relevant to personnel in the situation.
- an analysis of solutions tried by others
- an identification of all those who are interested in this situation
- the collection of baseline statistics about the situation that might be used to measure any improvement

The preliminary investigation demonstrates the extent of the problems in the situation under consideration and assists the research team to develop a specific research question.

The Research Question

The research concern might be quite broad as it relates to the whole situation so it will be necessary to develop one or more guiding questions to assist the research team to clarify extent of the problem. These questions need to be asked in such a way that it is possible to know if they have been answered. Action research questions will not only be focused on the outcome but also on the process as the development of a participating community that reflects different views is a feature of action research. Therefore a project desirous of improving access for indigenous people to palliative care services would also need to pay attention to the processes of working alongside indigenous people and a research question would reflect this: 'How can we assist indigenous people to develop palliative care services that best meet their needs?'

Planning Action

Action research is not just action it is action that is systematically researched and theorized. The first action plan needs to be carefully designed with clear strategies to monitor and evaluate the effects of the action along with any unintended consequences. The first temptation to overcome is the desire to implement a number of strategies at the same time. However if more than one action is planned at the same time it is not possible to discern whether the ensuing effect was caused by the combination of actions or just the result of one action.

Implementing Action

Implementing action requires that the action plan be continued for the pre-determined period. Sometimes stakeholders want to change or add further action plans before sufficient evidence has been gathered to fully understand the anticipated and unintended effects. The constant changes in health care contexts means that unforeseeable circumstances may affect the implementation of action.

Data Collection and Analysis

There are a number of different ways that action researchers collect data about the effects of an action plan. Common methods are surveys, interviews, observation, audits and focus groups. These methods have been described in detail in other chapters in this book and so will not be repeated here.

An additional method that is very common to action research and has been adopted more widely in other methods is the use of a personal/professional diary or journal where researchers document their ideas and local theories about the research and their role in it as it evolves. The use of a journal provides the individual with access to a rich resource of raw data about their professional lives for analysis and action.

Before the action and data collection strategies are implemented a decision needs to be made about the analysis. Inexperienced action researchers sometimes forget to plan exactly how they intend to analyze the data they collect as each cycle progresses. Data analysis is a skill that needs expertise. If there are a number of different stakeholders involved in the research then decisions need to be made about the extent to which different team members will be involved in the analysis.

Reflection

As the research data is collected and analyzed the values, theories, attitudes and assumptions in use in professional practice are exposed through a process of reflection.

The reflection stage is a retrospective group assessment of the progress that has been made in the light of the wider research concern. It has an evaluative component as the researchers judge the progress in preparation for the next planning stage. It also has responsive component. During reflection, researchers not only evaluate the analyzed data but also examine the research processes and their roles of stakeholders. Use is made of the insights from personal/professional journals as well as further investigation from the research literature and any emerging conceptual models.

Attention is directed not only to what was discovered but how it was discovered and under what conditions. This reflection stage provides the rational to underpin the next action plan. At this stage the group decides if the previous action plan needs to proceed with modifications or whether a new but related plan can be introduced.

Revised Plan

The revised plan needs to be clearly documented. Sometimes the previous plan will continue with a different form of data collection; other times a related plan will be developed using all the steps taken with the first plan.

Dissemination

The need for many stakeholders to be involved at different levels can also provide organizational difficulties and may affect the capacity of some people to be involved. It may also affect the roles that people adopt in the dissemination stage. A common feature of the final stages of action research is the process of feedback to all the stakeholders in appropriate formats. These might take the form of forums, conference or reports. Interactive feedback methods such as focus groups and seminars can provide valuable information to fine tune the intervention.

Ethical Considerations

Ethical considerations are essential in all research. However action researchers need to be particularly mindful of a few specific ethical considerations. Often at the outset of a project it is not always possible to predict the data collection strategies that

may be adopted in later action stages. It can be helpful to gain provisional ethics support for the overall project with an agreement that if there are changes in data collection that might necessitate changes to the ethics approval then permission for these changes will be sought.

Likewise, the number of participating researchers and stakeholders means that access to and storage of research material must be carefully addressed. Decisions made about the conditions of access to notes need to be made at the outset of the project and re-visited as the project takes shape. Confidential raw data needs to be stored in a secure place with identifying information removed. The analyzed data may be much more widely distributed, as the intention is to keep everyone as involved as possible. Thus non-confidential materials in the form of project notes may be kept in a place such as a nurse's station or reception area in a community house where other staff or volunteers are likely to read them.

Maintaining Validity and Reliability

The dynamic and fluid aspect of action research and the involvement of stakeholders as novice researchers may mean that there are difficulties maintaining research rigor. The emphasis on finding concrete and practical solutions may become the focus of the research to the detriment of systematic recording: that is, the researchers may be more focused on action than on research.

Time pressure can also affect rigor. Novice researchers and the organizations supporting them often desire to solve problems swiftly. This may affect the quality of the analysis and in many cases time pressure abbreviates or eliminates the reflection process central to thoughtful research along with the capacity to test theories and build theoretical models. Rigorous action research is a time-consuming process as sustainable change takes time to accomplish.

The diversity of data collection and analytical strategies has meant that action researchers have adopted a wide variety of criteria for validity that is used in other forms of qualitative and sometimes quantitative research (Williamson & Prosser, 2002). However a common thread is the use of conceptual triangulation of data. Each research approach that is incorporated into the design, whether it be surveys, interviews or document analysis, is evaluated separately in accordance with its own

methodological criteria. In this way each part can stand alone, whilst also being linked conceptually to other parts (Waterman, 1998).

Along with other forms of validity Lather (cited in Street,1995) has argued that action researchers can also use catalytic validity to determine if their research was systematic and valid. Because action research is change oriented with a focus on changing knowledge, language, practices and the situation, the outcomes need to be evaluated against these criteria. Catalytic validity is evident when the research provides the catalyst that produces a desired systematic change in most or all these areas.

Summary

Despite the challenges in designing and conducting action research, this style of research has many beneficial attributes for health professionals interested in understanding and collaboratively improving a situation. Action research is participatory so it involves and educates individuals as members of health communities. This style of investigation is context-specific with a practical intent, yet is capable of generating transferable knowledge. It is issue focused and fosters sustainable change. A cyclical process links action and analysis in a reflexive and reflective manner throughout the research process. Action research produces research that is relevant to health care, is inclusive of stakeholders and provides outcomes that have been tested in practice and are sustainable.

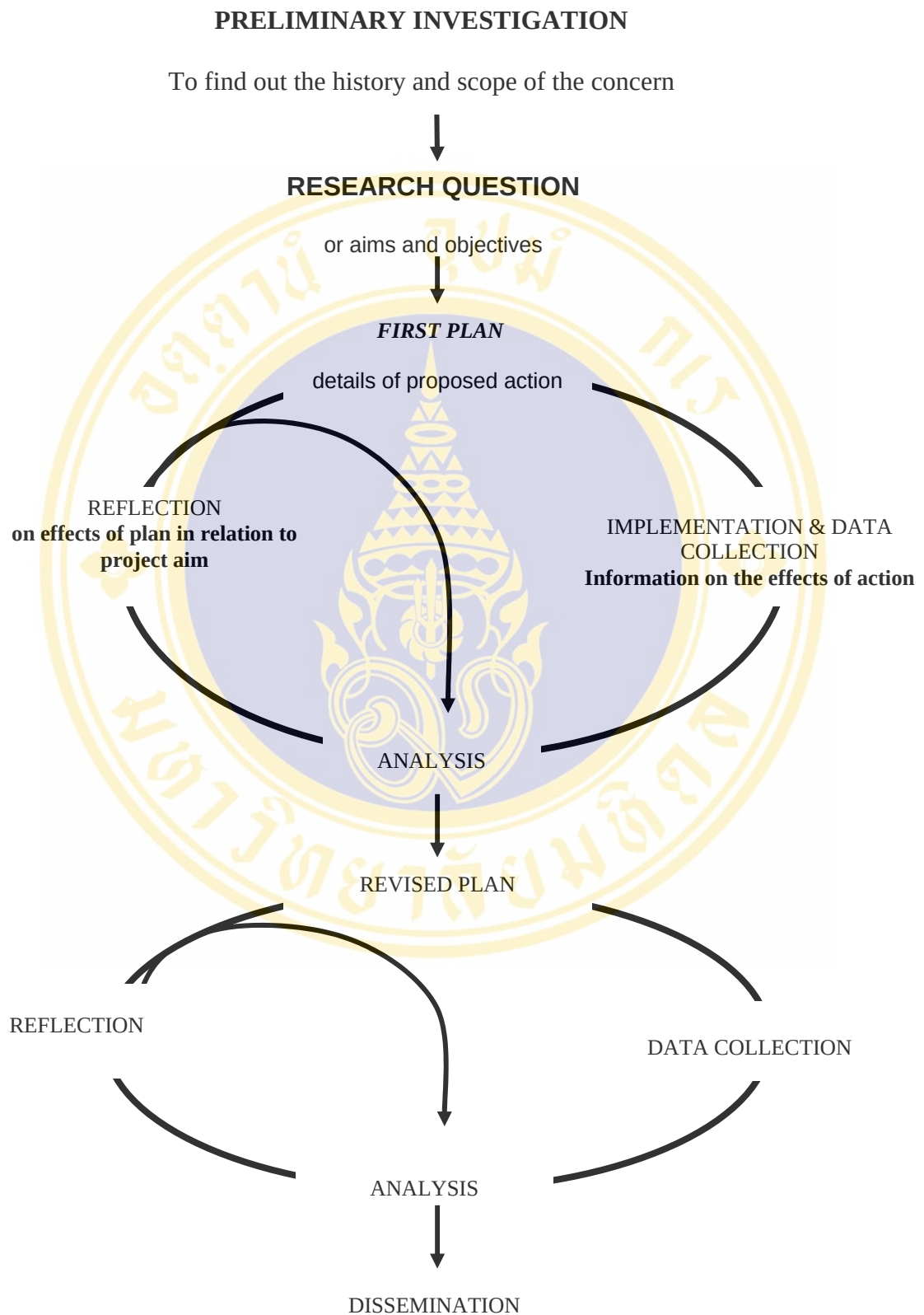


Figure 3 Participatory action research process (Street, 1995)

Rationale for Selection of PAR

In this study, there are a few reasons that the researcher selects participatory action research as a method to develop a nursing case management model at Sawanpracharak Hospital. First, there are usually many health care disciplines involving in caring for patients with myocardial infarction. To develop such a model will require an effort from the whole team including the hospital administrators who are the stakeholders to work collaboratively. This will be relevant to the characteristics of PAR as described previously.

Second, case management is a system developed originally in western context. In order to develop a nursing case management model in Thailand, it is necessary to establish it with careful consideration of the Thai context, especially that of Sawanpracharak Hospital. In this respect, PAR will get all stakeholders to share their viewpoints, values, institutional and cultural concerns that may bring about changes and development of the mode that fit well with the context under study.

Last, the researcher considers that in PAR sustainability is a significant issue that requires a great collaborative effort. To make this model sustainable and further development, it is quite appropriate to adopt PAR as a tool to strengthen the sustainability of this practice.

In summary, the researcher values that PAR would contribute to the research process that use collaborative power to bring about a model of collaborative care and changes in health services through nursing case management.

Research Site

A characteristic of participatory action research is the research location, or the field, where the so-called 'fieldwork' takes place. In this type of research a single social location or multiple social locations may be selected depending on the research scope and focus (Streubert & Carpenter, 1999). The major goal of fieldwork is to allow the researcher to get close to the people involved to capture their activities or social situations in their own environment (Germain, 1993) stated that doing fieldwork is a complex task that challenges the researcher every step of the way, starting from selecting the research location, gaining entry into the field location, becoming culturally immersed, and acquiring informants. In this research, the researcher

selected the research site specifically based on the rationale as indicated earlier in Chapter 1, including the selection of the hospital, ward, and participants.

Hospital Selection

Due to the complexity and specific aims of this research, the fieldwork was conducted at Sawanpracharak Hospital, which is an acute care hospital in northern Thailand where the researcher has been working. This hospital has had several issues related to MI as revealed by the data of high cost, high mortality rate, and increased length of stay of patients that require a change in service delivery in order to improve quality of care and cost containment for the benefits of both patients and the hospital.

Ward Selection

The rationale for selecting a medical unit at Sawanpracharak Hospital was centered around the significance of the problems of patients with myocardial infarction who had usually been admitted as medical patients. From previous incidences, MI often occurs with male patients. Consequently, a male medical ward or unit had been selected as a research site for this study. In conducting any research within the hospital settings especially with human subjects, it is important to gain consent and access well prior to study.

Gaining Access

The process of getting into the field or gaining access was a crucial step in the study. Following approval from the hospital ethics committee, the researcher contacted the designated research site to ask for permission to conduct this research. Within each hospital there was a hierarchical organizational structure that needed to be negotiated through before access to the medical ward was granted. The levels of negotiation are outlined below:

1. **Board of Management** In order to gain access to the research sites, the researcher sent a supporting letter from the university along with the project details to the Medical Director, and directors of each discipline who were part of the Board of Management and provided management of all clinical services in the hospital.

2. **Nursing Supervisor of the Medical Nursing Department** In the Medical Nursing Department of each hospital the researcher met with the nursing

supervisor to explain the research project and ask for nurses' voluntary participation. Each research site had four medical units whom the nursing supervisor was responsible for. Details about the project were provided for the supervisor's initial information and, following approval, were distributed to the nursing staff in the selected medical ward in the hospital.

3. Head Nurse of Medical Ward Following the supervisor's approval the researcher approached the head nurse of the medical unit to gain permission to approach the registered nurses in their ward. At the end, the head nurse also volunteered to participate in the study.

Participant Selection Criteria

In PAR, the researcher usually seeks out members of the group that are most willing to work with the research group and create changes to be their informants. It was important that the key informants were carefully and specifically chosen or selected to enhance qualities of the data (Hammersley, 1995; Morse, 1989) suggested that a good informant must be knowledgeable about the topic, willing to share the experience, and should have sufficient uninterrupted time and patience to explain and answer research questions to the interviewer. Good informants not only answer the research questions posed by the researcher, but they may also help formulate the questions as they understand the culture better than the researchers themselves (Burns, 1987). In this research study, the sample selection was based on a mixed group of multidisciplinary team who have been working in the designated unit and had experiences in caring or treating patients with myocardial infarction for more than one year. This is appropriate length of time for each staff to get familiar with the ward culture and the usual practice in the ward.

As Thai culture and nursing are framed within the hierarchical structural system, this structure had the potential to have a profound effect on the work of Thai nurses. Coming from this cultural background, the researcher realized that those nurses in senior positions might influence the recruitment. The research tried to minimize this constraint by emphasizing that the participation was voluntary and had no effect on their work. Finally, the head nurse who expressed interest in the study contacted the

researcher individually to discuss the project details. At this time consent to participate was obtained as well as permission to contact other nursing staff in the ward. The researcher then welcomed the participants to discuss the project and their anticipated research roles should they felt unclear about them. The term ‘collaborative process’, which was one of the characteristics of PAR, became evident when the head nurse and the researcher negotiated the recruitment process to gain cooperation with other health disciplines.

Initially in this study, a sample of eleven health care staff in the selected medical ward volunteered to participate in the development of a nursing case management model. At a later time, there were two staff, including a doctor and a physiotherapist that opted out of the study. Thus in an actual research phase, there were nine staff including a medical staff who are experts in cardiovascular diseases, a head nurse, a clinical nurse instructor, a registered nurse with specialization in cardiovascular diseases, two general registered nurses, a technical nurse, a pharmacist, and a dietitian participating in the study. Collaboration continued as the researcher worked with these key informants and planned the research activities. This was only a starting point of the collaborative relationships. As time went by, the researcher worked together with the informants to exchange ideas and understandings of caring situations of patients with MI in the research setting.

Data Collection Strategies

Following the establishment of consent and agreement, the researcher started collecting the data in the designated institution. The data collection strategies used in this study included participant observations, interviews, and collection of other records and documents that were pertinent to the studied topic. It was planned that these research activities be conducted in the medical unit two to three days a week, for two to three hours a day. This time period was subject to the key informant’s roster and convenience. The actual date and time of the participant observations and interviews were negotiated over the phone to make it convenient for their availability.

Participant Observations

It is worth noting that the conduct of participant observations is not a common research practice among Thai people. As a Thai researcher, the researcher took this issue into serious consideration and contemplated on how to make the informants appreciate the essence of this kind of data collection technique and to ensure their cooperation throughout the fieldwork study. the researcher was concerned about the ‘Hawthorne effect’, should the participants not understand the nature of this research practice and be apprehensive about being watched or observed. According to Polit and Hungler (1991) the Hawthorne effect occurs when a subject in an investigation behaves in a particular manner because they are aware of their participation in a study. In this study, for instance, the informants might have performed certain things like discharge interactions with patients and staff simply because they knew that they were being observed on these certain functions. This effect is inevitable in participant observations and, likewise, had the potential to interfere with the research findings.

To minimize this particular effect, Abbott and Sapsford (1998) suggested using a collaborative approach. This approach means getting the participants and the researcher to work together in the research to decrease the potential of the researcher being seen as a spy in the research scene. In order to adopt this kind of approach, the researcher realized that the willingness of the nurses to participate and disclose the information on this research subject was very crucial. To gain their collaboration, and likewise minimize the Hawthorne effect, the researcher made every effort to establish both trust and rapport with them. During this stage, the researcher spent considerable time explaining to and discussing with them how we would work together with the participant observations in the course of this research. While building up both mutuality and a relationship with the informants, the researcher also discussed all relevant research issues, such as their rights and ethics, and maintained that at all times their confidentiality would be preserved and respected. This discussion helped the researcher gain both confidence and cooperation from all informants.

Interviews

Interviewing is considered one of the most important data gathering techniques for qualitative data (Fetterman, 1989; Germain, 1993). It is a technique that helps explain and put into a larger context what the researcher observes and experiences, as

such observations may have different meanings or values between the researcher and the cultural group (Fetterman, 1989). Interviews may range from spontaneous, informal conversations with individuals in various places, to formally arranged meetings with a group in bounded settings, depending on the purposes of the researcher (Hammersley, 1995). In practice, these types of interviews will overlap and blend and often take place concurrently with participant observations, especially with the informal ones (Fetterman, 1989 ; Hammersley, 1995 ; Spradley, 1980). As each interviewing approach has a role to play in soliciting information, it was important that the researcher was clear about the pros and cons of each interview type prior to employing these approaches in the field (Fetterman, 1989).

In this study two interview techniques, mini and group interviews, were used. These techniques enabled the researcher to obtain data both formally and informally during the course of participant observations. Generally, all interview questions were unstructured to enable the researcher to obtain in-depth data which was useful and meaningful in the analysis process.

Mini-Interviews

At the beginning of the fieldwork in each ward, the demographic data of each informant was collected. This included their academic backgrounds to identify whether there was any difference in previous caring experiences for patients with MI, also to identify any different concerns among the informants. Once the researcher's role became clear for people in the fieldwork, the researcher began to gather information through mini-interviews, or casual conversations. Fetterman(1989) stated that informal interviews, or casual conversations, are most common and have proved to be useful throughout an inquiry.

In this study, the researcher found mini-interviews useful for many occasions, especially during the process of care management for patients with MI. Through this process the researcher discovered the categories of caring perceptions and barriers to effective care implementation amongst the nurses. For instance, the researcher asked the nurses what they usually do for patients with MI and what could affect them in caring situations. Their answers were then compared with the other informants responses. This comparison assisted the researcher to identify shared values that informed their discharge behaviors or practices in those specific situations. If any

answers remained unclear, the researcher then asked the informants to clarify them. Gradually the researcher obtained detailed descriptions of the caring experiences for patients with MI of the nurses and health care team in this study. Generally the interviews were recorded in field notes. When some important issues arose, the researcher would ask for permission to have the conversation taped.

Group Interview

Formal interviews may be conducted with individuals or a group of people. The latter referred to as 'group' interview. Formal interviews usually take place at an appointed time and results from a specific purpose or request to conduct the interviews (Germain, 1993; Spradley, 1980; Spradley, 1980) indicated that once the researcher has developed their relationships and rapport with the informants, the researcher may ask for a formal interview. Although these techniques can be used at anytime in the data gathering process, some authors (Fetterman, 1989; Germain, 1993; Hammersley, 1995) recommend that they will be most useful at the middle and end stage of the research when the researcher is likely to generate specific questions in order to grasp the informant's point of view on some specific issues.

At the middle and final stage of the fieldwork, group interviews were conducted with all key informants. The advantage of a group interview is that it allows a greater number of people to participate, and it is assumed that the group approach would make the interview situation less strange for the interviewees and thus encourage them to be more forthcoming (Hammersley, 1995). In addition, greater detailed information is often received as group interviews allow informants to react, clarify, and build upon the responses of other group members. In this study the head nurse and the staff member of the unit were interviewed together. In most instances, the group interview took approximately forty minutes to an hour to complete. The intention of the interview was to discuss with the key informants any possible strategies or suggestions for changing or improving caring practices.

During the group interview, the nurses and health care team shared and discussed their roles and caring experiences. It provided opportunity to discuss their caring issues and concerns in the units. Many of their strategies were similar, although some were not. When their ideas appeared to be contradictory, the researcher generally asked why they perceived their roles differently and discussed with them

how to bring about further effective care or interventions for patients with MI. Group interviews therefore were thought provoking and yielded a variety of ideas and knowledge about the development of nursing case management model.

With all interviews, the interview process was conducted by the researcher. Techniques like probing, using prompting questions that encourage the participants to elaborate the topic discussed, were also used during each interview. Additionally, the nonverbal manner of the participants was observed and noted to help illustrate the findings in the process of data analysis. At conclusion of the interviews, the participants were asked whether they had any further questions in relation to the research study and responded accordingly. Permission was also sought from each participant in case the researcher was to contact them following the transcribing process to validate the obtained data. Information obtained from interviews or participant observations were usually recorded in the fieldnotes as soon as the researcher got an opportunity to do so in the field, and reflective observations were also noted in the diary or journal records.

Journal Records

It has been suggested that a fieldwork journal or diary may benefit the researcher's experiences. It may contain various aspects of situations in the field, for examples, ideas, reactions, feelings, confusions, conflicts, mistakes, or even biases and other problems that arise during fieldwork (Germain, 1993 ; Spradley, 1980). These additional details will provide a wider view of the research situation and hence enable the researcher to explore what is actually occurring in the field more explicitly. Clearly, attention to all part and details of the social situations will provide valuable insights into the cultural scene and, likewise, contribute to a richer description of the situation being studied (Streubert, 1995).

In this study, a journal record of the researcher's personal impressions and reflections on important issues was used to help triangulate the findings. These issues included any concerns arising in the research environment. Leininger (1985) suggested that a fieldwork journal or diary could benefit the researcher's experiences, especially in the data analysis and interpretation. It generally contains the so-called 'reflective observation', which includes various aspects of situations in the field, for example, ideas, reactions, feelings, confusions, conflicts, mistakes, or even biases and

other problems that arise during fieldwork (Germain, 1993; Spradley, 1980). The use of reflective observation helped the researcher to look back thoughtfully on what happened to recapture the research situation and to analyze the research encounter carefully in order to obtain and report the data accurately.

Other Documents

Other data sources used in this study included the hospital policy manuals, reports, minutes of staff meetings, care plans, and other documents pertinent to care management for patients with MI. In order to review these documents, the researcher sought permission from the Chief Medical Officer in the Medical Department and also from the Head Nurse of the Medical Nursing Department when the researcher negotiated access to the research site. These health care personnel were considered the authority people in the medical wards who provided access to those relevant documents. Permission was granted on condition that no identification of patients was included in the study. The review of such data allowed the researcher to triangulate all data and thus more validly interpret the findings through examination of the study.

While elaborating on the data collection strategies used in this study, it is important to recognize that in order to acquire the quality data, role of the researcher needs to be well established. The significance of role of researcher and the way in which they acquire and analyze the data has been highlighted in many research studies (Fine, 1994; Rudge, 1995; Manias, 1998). This issue was also relevant in this study and was discussed in length in the following sections, as well as in the reflection of the research process in the conclusion chapter.

Role of Researcher

Traditionally, in participatory action research the researcher is expected to be a facilitator of the research process (Kemmis & Matagard, 1990). However, through dual roles of the researcher as a nurse and a researcher, the researcher was inevitably involved in the culture being studied. Burns (1987) argued that in modern forms of research researchers may have multiple roles and sometimes are required to avoid 'going native', that is, becoming immersed in the practices of the community such that they adopted local values and interpreted their material accordingly (Burns, 1987). The risk of 'going native' was highest during the participant observation process when

the researcher became part of the culture and could lose all objectivity or the ability to observe clearly in the field. Fetterman (1989) recommended that in order to avoid such a situation, the researcher had to maintain a professional distance during the participation process to allow accurate and adequate observation and recording of data. However according to Germain (1993) engaging in social activities of another culture demands considerable introspection on the part of the researcher themselves to find meanings and interpret behaviors of others in the culture. As a result, reports of participative study often contain methodological remarks about the impact of the researcher on the research, including details of procedures for observing and recording data (Demsey, 1996).

In response to this remark, the researcher took into account the reflexive enterprise which is one of the distinctive features of this participatory approach. In this way, the researcher used multiple voices from all involved in the study in forming a more thorough picture and understanding of what was going on in the research settings. This would help minimize the biases they may occur as a result of cultural immersion in the field study.

Leaving the Field

Generally, the decision to leave the field is based on several criteria. Fetterman(1989) stated that often funding indicates the time schedule of the research design. However, the best reason to leave the field is the belief that enough data has been gathered to describe the culture or problems convincingly and say something significant about it. In this research, the researcher decided to leave the field as scheduled as the researcher had gained adequate valuable information of the study topic. What was different though in the study was that the researcher did not see this departure as the final stage of the research journey, but the beginning of it. Throughout the fieldwork, the researcher developed not only knowledge on the topic being investigated but also established a relationship with all key informants who are very keen to improve the standards of caring practices for patients with MI. The key informants were eager to participate in further projects like this and indicated a willingness to work with as part of a research team should the opportunity arrive. The final stage for some therefore could mean the starting point for the researcher to build

up this kind of nursing research to enhance nursing practices and health care services in Thai community in the future.

Translation Issues

Translation of the data obtained is one of the most important research procedures in many cultural studies. Because Thai was the language used by all participants in the interviews in this research study, it was appropriate for the researcher to transcribe in Thai initially in order to understand the findings in the participants' own terms and meanings. Simultaneously, the investigator's fieldnotes and other data sources were integrated into a single document for each interview transcript. The interview transcripts then were analyzed and compared across all participants in the study and, finally, the analyzed data was translated from Thai into English by the researcher.

In translating all accounts, the researcher used the back or backward translation techniques (Brislin, 1976; Hayashi, 1992). The back translation process included an examination of the original transcript and a systematic analysis of the written translation (Brislin, 1976). The translator then may communicate what happened in translation to a great number of people and compare the original and the translated descriptions. Furthermore, with difficult terms, he suggested an inclusion of a careful addition of clarifying such terms to provide more context and understanding.

Although the researcher have some experiences in speaking both languages, the process of the translation and interpretation of the findings was not simple. To ensure that the translation of critical words or phrases were more or less accurate, and all potential biases during the course of the translation were minimized, several researchers (Brislin, 1976; Gan, 1992) suggested the use of cross check techniques with friends and members of the same ethnic community. These techniques were also applied to the present study. Some difficult terms were discussed with both the Thai as well as the bilingual colleagues to compare the translated meanings. In addition, the translated data of some critical terms was checked with the participants to maintain the most accurate meanings of the interpreted data.

Protective Measures of Confidentiality

In order to maintain confidentiality of the informants, all identifying information, such as names and identities, were recorded only on a cover sheet of the interviews and observation notes. The tapes and notes recorded during interviews and participant observation sessions bore only a numeric identification code, whilst only pseudonyms were used in the transcripts and reported data. The raw data were kept in a locked filing cabinet. The identified sheets were removed from completed interviews and notes and kept in a separate locked filing cabinet. The transcribed data was stored in a microcomputer and the researcher was responsible for maintaining the confidentiality of subject data throughout the course of the project. Access to all files was restricted to the key project personnel only. All the identified and unidentified records will be kept for 5 years and destroyed thereafter.

In this study, the informants were able to access their own data for subject validation purposes and had the right to refuse use of that particular data in any research process. Ultimately, the data remained the property of the researcher and not the informants or any health care agency.

Data Analysis

During the conduct of PAR, the researcher will be required to analyze data simultaneously with the data collecting process. The researcher generally uses both quantitative and qualitative/content analysis to analyze the data gathered. This includes the descriptive analysis by using frequency and percentage in quantitative data. In qualitative data, coding of the data, grouping similar codes into categories will be performed, and then categories will be compared and clustered till cultural concepts or themes emerge (Patton, 1987). These techniques were applied to this research to form a model of nursing case management from the data.

Content Analysis

Hammersley and Atkinson (1995) described three main procedures to analyze qualitative data. First, the researcher begins with a careful reading or several readings of transcriptions and records to be thoroughly familiar with the data. Second, the researcher then tries to generate various kinds of concepts emerging from the data

collected to make sense of what is going on in the scenes. Third, the researcher combines the systematic process of reflective thinking and linking those concepts will help develop more systematic typologies or concepts, or even develop a basis for theory development.

These three procedures were used in the study. the researcher began my analysis by readings the transcripts many times and then generated categories from the findings.. Taking the theoretical underpinning this study into account, those categories associated with gender in nursing were also conceptualized and grouped into issues emerging from caring practices for patients with MI by multidisciplinary care team and nurses. Notably, it was not the intention of this study to generate any theory, rather to explain the phenomena under the study, this scope of data analysis therefore limited further generalizability of this research study.

Furthermore, within a conceptual framework of this study, the researcher tried to analyze and interpret the findings in relation to the context under the study, including a collaborative practice, development and utilization of clinical pathways, and the roles of nurse case manager. These aspects will be included in the analysis so as to see how a nursing case management model could be developed, along with other issues and the barriers that effect on the use of nursing case management model in the research setting. Additionally, the potential of model sustainability will also be analyze so as to see how the health care team could improve their care management for patients with MI in the future.

In summary, this chapter demonstrates all essential elements of the fieldwork process, including the entry process, the recruitment process, the data collection strategies, data analysis techniques, data management, translation issues, ethical considerations, and the rigor of the study. It also demonstrates the roles of researcher in the fieldwork, including the way that the researcher dealt with each research steps. From these elements, the course of this research study was quite dynamic and could not be predetermined. As Kemmis & Mctaggart (1995) has argued, the PAR design should be a reflexive process which operates throughout each step of the research process. Such process highlighted a complexity of this research design that required attention to details in every step of the fieldwork. As demonstrated in this chapter, the

reflexive process was maintained throughout this research in order to enhance the validity of the data and the rigor of the study.



CHAPTER IV

RESULTS

In this chapter, the researcher describes details of the findings into four parts. First, the characteristic of the setting and demographic data of the informants will be described. Second, the development of a nursing case management model by using participatory action research will be illustrated. Third, the issues surrounding the development of this model including barriers and strategies for further application of the model will be explicated. Forth, the outcomes of the use of this nursing case management model will be reported. These findings will be described in details as follows.

Characteristic of the Hospital Setting

In this study, the characteristic of Sawanpracharak Hospital, which was the hospital setting in this study, needed to be described for use in the further discussion chapter. First, in this research setting, the hospital structure and line of management in the research setting were hierarchical. Figure 4 revealed the organizational structure of the hospital and nursing department in the setting.

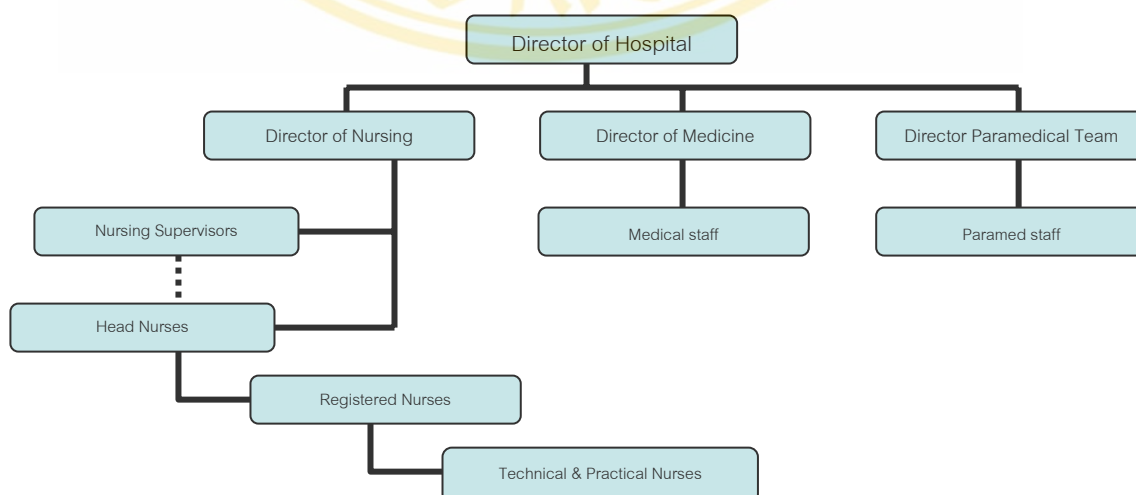


Figure 4 Organizational structure of the hospital and nursing department

Characteristics of Ward Setting

According to the hospital criteria, the medical units were the units that provide health care services for patients aged over fifteen who suffered from medical diseases. However, in the research setting such criteria were not always applicable. The unit needed to mix medical patients with other types of patients, such as surgical patients, to fill the hospital beds. Nonetheless, the majority of the patients who remained had medical conditions. The following table (Table 5) provided the characteristics of ward setting as indicated by the bed numbers, length of stay, staffing levels, shift workers, and mode of care delivery.

Table 5 Characteristics of the ward setting

Ward type	Bed number	Length of stay	Staffing level RN:TN ratio	Shift workers m = morning a = afternoon	Mode of Care delivery
Medical ward	42	varied	15: 6	m: 5RN+3TN a: 2RN+2TN	Team + Functional

In each medical ward at Sawanpracharak Hospital, the bed numbers were 42 beds. However, in actual fact there was much greater use of the beds at medical wards due to different circumstances. These included some extra admissions to the medical wards as a result of inadequate bed numbers at emergency room, intensive care unit, or in epidemic periods of some illnesses. Quite often the beds of medical wards here had been expanded to 60 beds so as to support the demands for hospital care of patients. Consequently, the nursing staff ratio would become problematic should there be an extended number of patients in the ward. This would inevitably affect the quality management of patients and likewise cost containment of the hospital at a large scale. In relation to the length of stay (LOS), it was found that this had been varied depending on the case type being admitted to the ward. For example, patients with acute MI will have approximately 5-6 days of bed stay. However, the overall statistics as revealed in Table 6 showed that the readmission rate in this case type was rather high, containing almost 30 percent of the total cases. These statistics indicated a

need for the ward to look at some effective strategies to overcome this readmission rate and other quality issues.

Table 6 Characteristics of patients with MI

Year	Morbidity rate (%)	Mortality rate (per 100,000 cases)	Length of stay (days)	Readmission rate in one month (%)
2000	36.46	101	5.97	29.17
2001	48.43	192	6.07	19.15
2002	49	216	6.17	27.6

Source: Sawanpracharak Hospital Annual Report, 2000- 2002.

As noted, the models of care delivery in this medical unit are team and functional nursing mainly. These models have been applied for a long time so as to allocate job responsibility through a team and functional approach in order to manage care and complete routine tasks effectively. According to Forbes (1999), team nursing is a care model which focuses on a team approach. Typically, a team approach consisted of the team leaders (senior RNs) and the team members (Junior RNs and all PNs) caring for patients allocated to their team. The team leader supervised the patient care of a large group, whereas other nurses provide care for small group of patients within that large group. Functional nursing, on the other hand, was task oriented in which the nurses were assigned work according to specific duties (Forbes, 1999). A functional method does not support a holistic approach to nursing care, whereas in team nursing, nurses generally have greater responsibility for the total care of their patients.

Generally, in team nursing patients in this ward were allocated into two teams with one RN assigned to take charge of each team. The number of TNs were then allocated according to the number of tasks required in each team, such as patients who required naso-gastric feeding. The informants in the ward reported that the small number of RNs employed made it difficult for them to spend adequate time with patients as they needed to complete medical orders, treatment, documentation, coordination and communication. Time was an issue identified by the informants and will be discussed later in the following chapter.

In relation to the Nursing Service Department at Sawanpracharak Hospital, it was noted that nurses always worked within line of their job descriptions. The following was the job descriptions endorsed in the department for reference of all nursing staff in the hospital (see Table 7).

Table 7 Job descriptions of nurses

Positions	Job descriptions
Director of Nursing (DON)	Collaborate with hospital administrators and other departments in developing hospital policies
Nursing Supervisor (NS)	Take orders from the Divisional Director of own clinical nursing division and be responsible for managing head nurses in designated floors or units
Head Nurse (HN)	Take orders from the Divisional Director and nursing supervisor of own clinical division and be responsible for nurses in own unit. Other roles include collaboration with all staff and deal with administrative, educational, service delivery, and other organizational activities
Registered Nurse (RN)	Assist head nurse in delegating nursing duties, develop nursing care plan, document nursing interventions, provide direct and complex patient care, patient education and consultation to subordinates in the nursing team
Technical/ Practical Nurse (TN/PN)	Provide direct nursing care and follow instructions of the head nurse or the RN team leader

From the nursing job descriptions, the hierarchical structure in these nursing organizations was evident. Nurses who were at the top levels were the ones most involved in policy-making, managing divisions, and controlling those subordinate to them. Likewise, at the ward level, the head nurses were seen as the ‘managers’ who were responsible to ensure that all subordinates worked according to their assignments and rules and regulations of the hospitals. On the other hand, these head nurses were also being ‘ruled’ by their superordinates, the nursing supervisors and the upper management.

Similarly, in the ward atmosphere, registered nurses were subordinate to the head nurses and superordinate to technical and practical nurses. The registered nurses were basically responsible for total patient care as allocated by the head nurses and, at the same time, controlled the practical nurses in caring activities. In addition to this hierarchical order, there were also class divisions among the registered nurses themselves. The staff nurses who had worked longer than five years in the field were often considered the 'senior' nurses. Likewise, those who worked for a lesser period were spoken of as the 'junior' nurses. This distinguishing feature was a result of the position classification system in these institutions, where nurses with work experience over five years started to work as a nurse-in-charge in each shift. In the light of this, junior nurses were subordinate to those seniors in their workplaces. In many events, the senior would act as the team leader and the junior the team member in everyday care delivery.

However, in this study the researcher and the informants attempted to challenge the notion of these authorities by enhancing a collaborative approach rather than a hierarchical one constantly. This challenge will require the cooperation and understanding of all nurses and health care disciplines involved in order to create a model for care of patients with MI more collaboratively and successfully.

Demographics of the key informants

In addition to the detailed structure of hospital and ward unit, the demographic details of all informants, both personal attributes and their work status are outlined in Table 8, which revealed all informants who had been working together in the ward setting. In this study RN1 was the head nurse of the ward. RN 2 was the clinical instructor working in the ward. RN5 represented the ward nurses who had been working with MI patients in this ward for more than one year. In addition, RN3 had had experiences working in an intensive care unit prior to shifting to work in this ward. RN4 was a home health care nurse who jointed this research study as a person that linked hospital to home care services. TN was the technical nurse who volunteered to participate in this study. DR was a doctor that had been specialized in cardiovascular diseases, whereas PC represented a pharmacist, and DT a dietitian participating in this study respectively. Notably, most of the informants were female,

except for the doctor which was consistent with the hospital statistics that the majority of its employee in this hospital were female.

Table 8 Demographic data of the key informants

Demography / Informants	Position	Qualification	Experience	Shift work
RN1	Head Nurses	Bachelor	27	Day only
RN2	Clinical nurse instructor	Masters	19	Day only
RN3	Staff nurse (ICU)	Masters	11	Roster basis
RN4	HHC	Bachelor	19	Day only
RN5	Staff Nurse	Bachelor	17	Roster basis
TN	Technical Nurse	Diploma	15	Roster basis
DR	Doctor	Bachelor + Cert	10	Day only
PC	Pharmacist	Bachelor	18	Day only
DT	Dietitian	Bachelor	12	Day only

In this ward, all nurses, except the head nurses and clinical instructors, were required to work on a roster basis. The rosters were divided into three eight-hour shifts: morning (8 AM to 4 PM), afternoon (4 PM to 12 PM), and night (12 PM to 8 AM). Other disciplines work during day time most, although the doctor could be consulted after office hours depending on the job allocation within the medical department. In this study, the focus was on the work during morning and afternoon shifts only as these shifts were the time when most of caring activities happened with many families coming to visit the patients during these shifts. Collaborative activities also predominantly occurred during these times.

Demographics of Patients with Myocardial Infarction

As this study focused mainly on patients with MI, the demographic data of these patients were described as follows (see Table 9).

Table 9 Demographic data of the patients with MI (N= 15)

Characteristics	Number
Gender	
: Male	15
Age (Years)	
: < 40	1
: 40-45	1
: 46-50	2
: 51-55	3
: 56-60	4
: 61-65	1
: 66-70	2
: > 70	1
Education	
: < High School	2
: High School	1
: Diploma	6
: Bachelor	5
: > Bachelor	1
Monthly income (bahts)	
: 5,000-10,000	4
: 10,001-15,000	6
: 15,001-20,000	2
: 20,001-25,000	1
: 25,001-30,000	1
: > 30,001	1
Payment	
: Own payment	1
: Civil Servant Scheme	2
: 30 Baht Scheme	12

As the researcher selected to conduct a study in a male medical unit, it was therefore obvious that the total patients were male. These patients aged 50-60 years old on average. Their income were mostly less than 15,000 bahts per month, and

almost all of them were on a 30-baht scheme for health care reimbursement. In this study, the patients with MI and their family gave their consents to participate and were informed of the care plan initiated by the health care team. They were encouraged to take part in the care plan and management, by voicing their needs and concerns. During the data collection process, there were no negative responses received from either patients or family care givers. On the whole, these patients were in favor of the use of case management as they had interacted more with a nurse (nurse case manager) who coordinated care for them.

Patient Care Delivery

Usual Care Delivery of Nurses in a Medical Ward

Previously, routine nursing activities in the medical wards at this hospital were somewhat similar. All nurses, RNs and TNs, typically began each shift with either a bed side hand over, or hand over at the nursing station. The head nurse, or the RN-in-charge in the absence of the former, was responsible for the nurse-patient allocation. Initially, the in-charge allocated the patients into two to three groups, depending on the number of nursing staff and patients, and then assigned the nursing staff as the team leaders and members of each team accordingly.

Usually, the same nursing staff were re-assigned to the same patients each day to maintain continuity of care. In each team, the in-charge usually assigned specific tasks to each person, such as some RNs giving medications, or checking the emergency resuscitation trolley. In this way, all of these tasks were expected to be accomplished by the designated nurses.

For the team members, both TNs and some junior RNs each shift usually started with bedside care for their patients. They provided assistance with all hygiene and activities of daily living (ADL) for patients. They were also responsible for observing any changes in patients' conditions and reporting the changes to the team leader. Any specific treatment, such as tracheostomy tube care, was usually performed during bed-bathing. After personal care was provided to all patients, the PNs then moved to take vital signs of the patients, record their intake-output, and then check the amount of available general medical supplies such as dressing sets.

When the ward became less hectic, usually between 10 AM to 11 AM or 1 PM to 2 PM, nurses often started writing the nursing notes or completing patient information in the computer. Nevertheless, all work was not always linear like this. If there were any urgent tasks, for example, a critical incident such as a patient had a cardiac arrest or a new patient was admitted, the nurses needed to re-allocate their time to meet urgent needs. They often helped each other within a team in these procedures and then got back to their routine activities. By lunch, AM nursing staff both RNs and TNs or PNs helped the patients with feeding and continued other nursing activities till the end of the shift.

At the end of the morning shift, the team leaders were responsible for completing all patients charts and providing a hand over to the afternoon staff. The afternoon staff then began their duties in a similar routine as those of the morning staff. Although less treatment appeared to happen in this particular shift, the staff often dealt more with the relatives and visitors who came in the afternoon to visit the patients. Likewise, more frequently, patient education took place in this shift.

Patient Care Team in a Medical Ward

In relation to the so-called patient care team, nurses in this medical ward always worked closely with other health care professionals. However, each health care discipline often did their 'own thing', at their 'own time', rather than working together as a team leading to problems with task overlapping or fragmentation of care. Although there was a medical round in the morning in this ward, the nurse-in-charge of the ward was usually the only person that joined the round for clinical discussions. There were no other nurses or health care members attending the round, and thus the voices for decision making for patient care relied largely on medical opinions. On participant observations, even though there was a nurse in-charge attending the round, quite often she was unable to follow this completely due to uneventful interruptions. As a result, the discussions between nurses and doctors or other health care team were rather limited. Patients or families also had little opportunities to discussing their own health issues, or planning caring activities with the health care team. Overall, the key informants in this study acknowledged that time, teamwork, and patient-centered issues were service delivery in this medical unit. Continuity of care could also be

problematic especially for patients who may be discharged quickly, leaving little time for staff to prepare them for appropriate patient and family education, coordination between health care members, and effective discharge preparation.

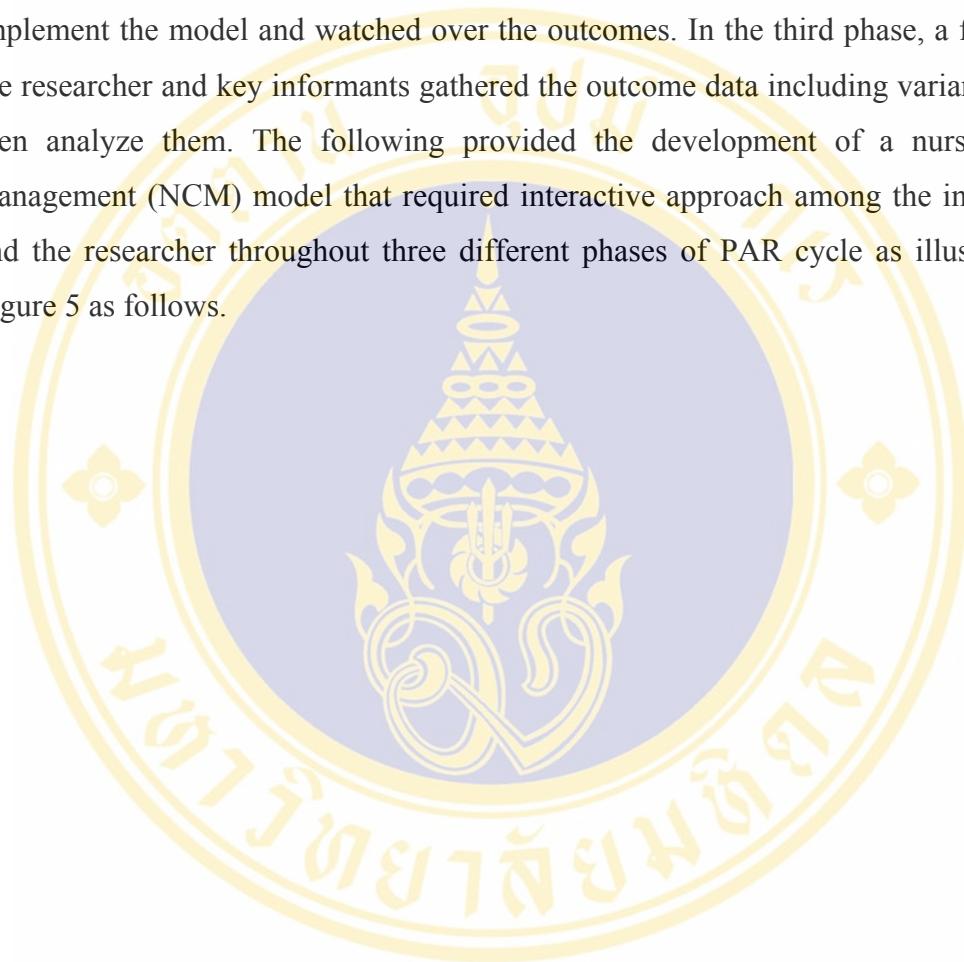
These examples of observed activities coupled with prolonged length of stays and readmission rates of patients with MI demonstrated the need for the health care team at the hospital to develop a new model of care delivery for this group of patients. It is important to note that the intention for this change come initially not only from the researcher, but also the participants. The participatory endeavor has been demonstrated in a latter process of the development of a nursing case management model for patients with MI in this chapter.

Development of a Nursing Case Management Model

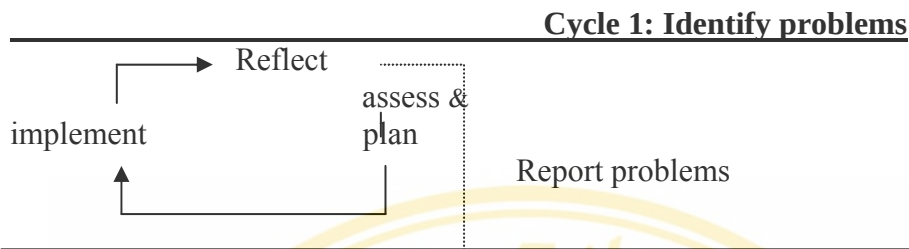
In this study, the traditional models of care delivery underpin issues of potential discontinuity of care in the way that the various forms of task and team-oriented were largely implemented. As a consequence, the concept of patient-centered care was not well immersed in practice especially when crisis and emergency situations arose. Moreover, the rhetoric collaborative process was not effectively put into practice despite the fact that there had been an establishment of a structure called patient-care team (PCT) for a few years. The informants had discussed and identified the problems in caring for patients with MI and raised their concerns associated with their current care practices. This was seen an essential step of the beginning of the research process which targeted mainly at the development of a care delivery model that fitted well with current changes and situations.

Overall, the participatory action research (PAR) process took about fifteen months to complete from July 2003 to September 2004. Following the first phase of the PAR cycles, which attempted to identify problems of caring practices in patients with MI. In the second phase, the researcher noted that there was an establishment of a case management committee who had later worked on plan and development of the case management model. There was also a training program provided for this committee along with a field visit to other setting that implemented case management before Sawanpracharak Hospital. After all preparation had been made, the key informants started on planning and developing a tentative model for practice of case

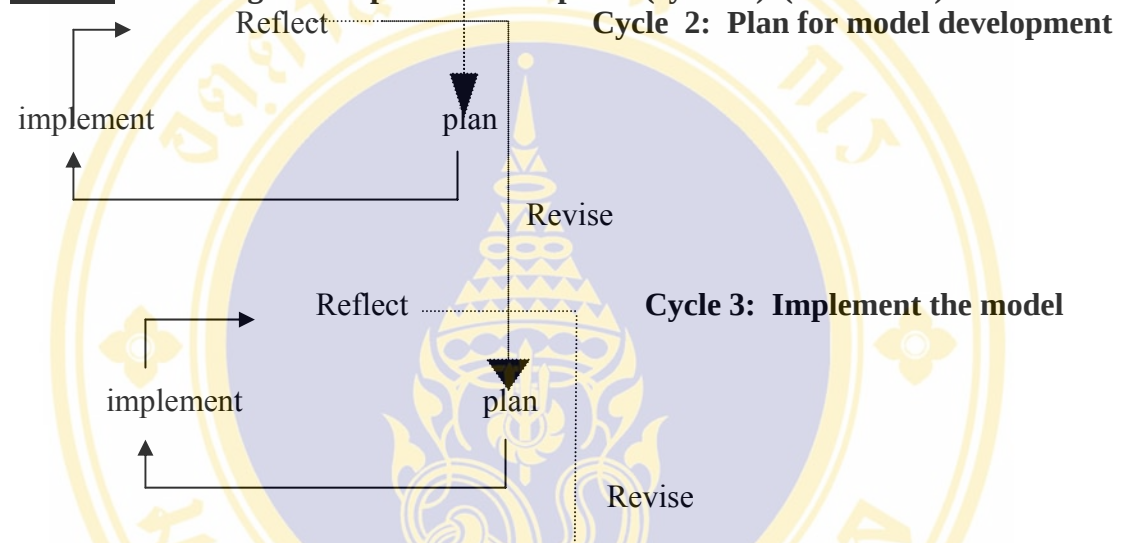
management for patients with MI in the research setting. A collaborative care plan or clinical pathway was initiated, followed by a development of a number of guidelines, manuals, and tools for use in improving service delivery for this group of patients. When a tentative model was set up, it was then piloted with five MI patients. Following a modification of the model, the researcher and key informants started to implement the model and watched over the outcomes. In the third phase, a final one, the researcher and key informants gathered the outcome data including variances, and then analyze them. The following provided the development of a nursing case management (NCM) model that required interactive approach among the informants and the researcher throughout three different phases of PAR cycle as illustrated in Figure 5 as follows.



Phase 1 : Preliminary phase (3 months)



Phase 2 : Planning and Implementation phase (cyclical) (10 months)



Phase 3 : Evaluation phase (3 months)

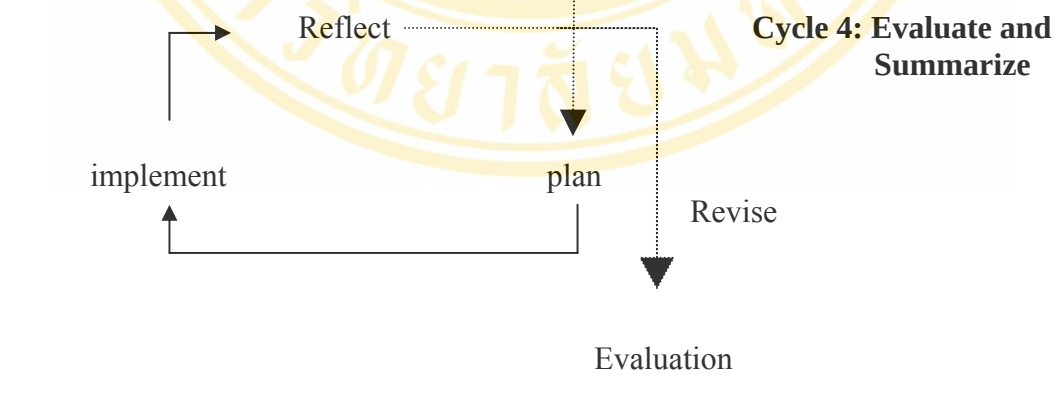


Figure 5 PAR cycle in the model development

In an attempt to apply PAR for the present research study, the researcher divided the development into three phases. These included a preparation phase, plan and implementation phase, and evaluation phase. Each phase had its own purposes and also required a number of cyclical activities to achieve the development of a nursing case management model. Figure 5 described the development of such model along with the outcome in each phase as follows.

Phase 1: Preparation phase

This phase took about three months to complete. Activities included in this phase were identifying the usual practices of the ward and problems with care management, especially in relation to that for patients with MI. This phase resulted in an identification of the problem along with an initial set up of fundamental assets of the nursing case management, including the nurse case manager, and so forth (see Figure 6).

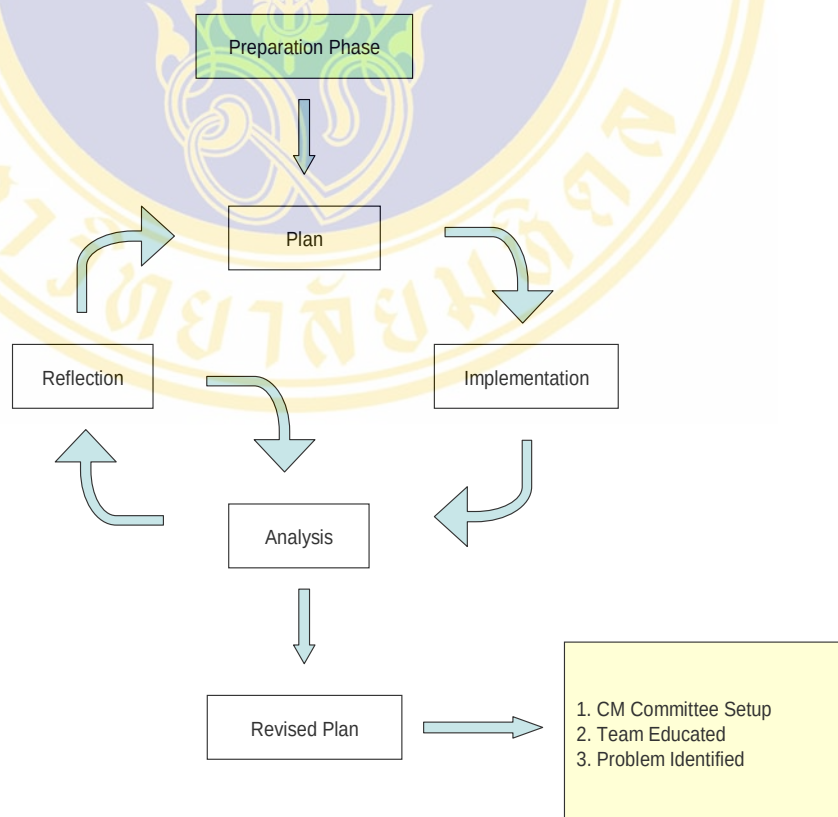


Figure 6 Preparation phase of NCM model development

In phase one, the researcher acted as a person who facilitate the conduct of meeting among all key informants. This phase aimed to put the informants together to gain a basis of issues being under this study. It also aimed to enhance knowledge of issues under study for both key informants and health care team in the hospital. Following a few meetings, the informants had established a case management committee for MI, comprising all key informants. The informants and researcher then proposed to the Hospital Committee for approval. Once a structure of this committee had been set up, all key informants agreed that they needed necessary information for further development of case management. A lecture and workshop on nursing case management had been provided for the team prior to the model development. All informants also acquired additional information about case management through literature on their own and got back to share information among the health professionals in the team. This was interesting in the initial PAR process when staff started to bring about changes in their ways of practices and ideas to improve their caring practices.

After these key informants were educated about the concept of nursing case management, they reflected upon the knowledge received. Although the knowledge was essentially provide to a certain extent, the informants further proposed that they had better gone on a hospital visit to see how case management had been used in other settings. They further made a request to the Hospital Director to visit a hospital in the northern region and gathered information about case management there. Once these informants got all important information related to case management, they began to look at the existing services at Sawanpracharak Hospital. They further identify the gaps in the current caring situations for patients with Myocardial Infarction (MI). The informants identified caring issues in patients with MI as follows (see Table 10).

Table 10 Summary of previous caring issues for patients with MI

Caring issues	Gaps
Hospital management	• No adequate and appropriate service structure, such as CCU • Inadequate number of necessary equipment, e.g. EKG monitor
Health care team	• Inadequate staffing numbers, especially nurses • Ineffective collaboration and communication among health care professionals • Fragmentation of care from hospital to home, particularly in patients with self care limitations • Lack of advanced knowledge and expertise in caring for patients with MI, especially nurses, dietitian, and pharmacist
Patients and Family	• Little involvement in care plan and management • Inadequate health education for self management

These caring issues had affected both quality and continuity of care for patients with MI in this setting. Some key informants expressed their concerns related to time and staff issues further. For example, an RN in this study stated that:

“During this time, the work is very heavy. Sometimes, both head and sub-head nurses had to attend a hospital meeting, leaving a few nursing staff to handle the cases. Some days we finished at 6 PM for morning shift”.

The time and staffing issues were not only concerned by the nurse, but also the doctor. A doctor in this study mentioned that:

“While we are working on a hospital accreditation for quality improvement, we must think of the real concept of ‘quality’. I noticed that senior nurses have been working hard on the ‘meetings’ almost every day for the HA purposes. The fact is that many patients are not well cared for when there were only

junior nurses working on the ward with a large number of patients waiting for care services”.

In terms of care delivery system, there was an issue of care delivery model being used in the setting. An RN who was a general participant in the study pointed out that:

“We nurses don’t actually work according to the concept of ‘teamwork’ or use a ‘team method’. We just work together and use functional methods most. One does the injection, the others do self care education. Sometimes we have too many patients and it is difficult to use a team method for this situation”.

From these accounts, it was noted that nurses had an important role in providing close care for patients. The method of care delivery by nurses could play a significant part in improving quality of care delivery and creating linkages among other health care professionals further. The informants gather these issues and brought them to further PAR cycle to set up a plan for development of nursing case management model and for further implementation.

Phase 2: Plan and Implementation phase

This phase aimed to set up a concrete plan and implement the tentative model that had been developed. This phase consumed a period of ten months to complete. During the beginning of this phase, there was an epidemic of ‘Norwegian Scabies’, a tropical skin infectious disease, in November 2003 that has been widespread in the hospital. This was an inevitable event that delayed the PAR process for the model development to some extent, however the informants all agreed that such epidemic was a significant issue and required urgent management from all health care team involved. Once this epidemic had subsided and well intervened, the informants started to continue on their action plan and implementation of the NCM model. Figure 7 illustrated the process of this plan and implementation phase of the PAR cycle in this study.

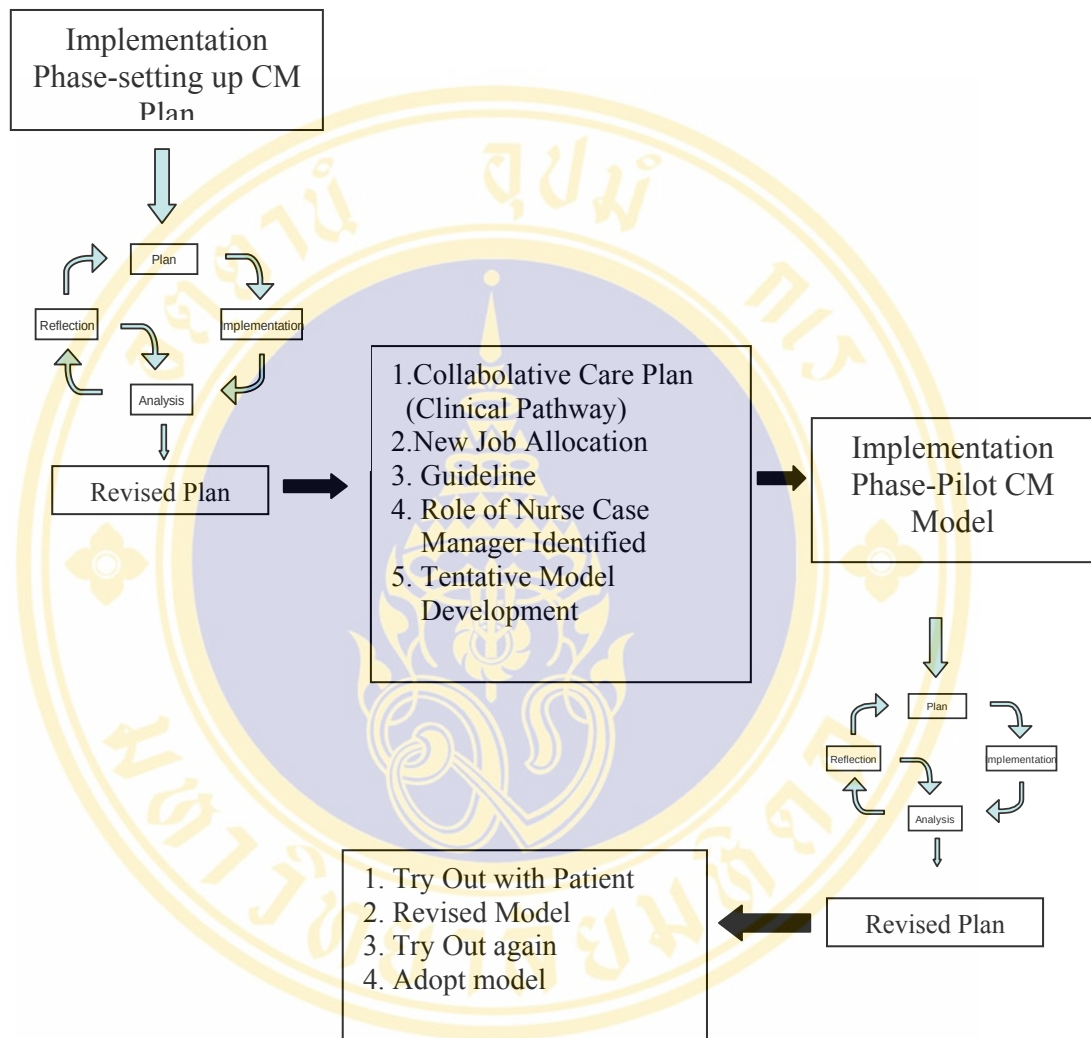


Figure 7 Plan and Implementation phase in NCM model

According to Figure 7 there were two steps of the PAR cycle in this phase. First, the researcher focused on setting up a case management plan, and second on implementing the tentative case management model. These steps were presented in details as follows.

Setting Up a Case Management Plan

In order to set up a plan for use of nursing case management, the researcher let the key informants played an active role in the PAR process. The key informants conducted several meetings using a structure of the hospital patient care team for further formal meetings. As a consequence, all key informants had been part of the patient care team of MI patients. This was seen as a strategy to enable the PAR cycle to actively run along with the routinization of the hospital environment.

Initially, the informants brought all caring issues identified in the first phase to discuss for improvement. The first attempt was to create criteria for case selection. The patients with MI who were eligible for case management in this study included male patients at or above 15 years old who had been diagnosed with ‘acute MI’ by the physician. They had to be alert and cooperative, and most importantly were willing to participate in this study.

In addition, in the guideline for case selection also specifically indicated that the case type had to have uncomplicated type of MI. This would be classified by signs and symptoms these patients had experienced including:

- acute chest pain with no signs or symptoms of heart failure.
- EKG shows ST elevation at least two waves in one lead.
- increase in levels of cardiac enzymes

For those with complicated MI, they would be excluded from this study. After these case selection criteria had been set up, the key informants decided to develop a collaborative care plan, namely clinical pathway, which would be used as a tool to design a care plan for patients with MI by involving all designated multidisciplinary team (see Appendix L).

1.Creating a Collaborative Care Plan

Collaborative care plan or clinical pathway consisted of a pre-

determined or expected outcomes of each period of care for patients. It also consisted of essential elements of the care process including assessment, laboratory investigation, medication, diet, exercise, patient education, discharge planning, and variance record. Variance was a record of some events that occurred differently from the care plan and could be classified in different ways according to the sources of variations. These elements were put within a timeline determined by the hospital administrators who had controlled the length of stays through DRGs system in the hospital. The clinical pathway therefore became an effective tool for cost containment in several organizations and also in this study. The key informants made a decision together to set the length of stay for six days, after considering the previous average length of stay (which was 6.17 days). They also considered the care continuing process for patients with MI following discharge from the hospital by integrating home care and social services for these patients. This was seen as a way to incorporate existing health care resources for appropriate use to maximize the quality of care for patients.

When clinical pathways had been established, the key informants started to talk about job delegation. They started to identify who should actually assume a role of case manager. In an initial meeting, most of them agreed that this role should fall into a registered nurse who had experiences in caring for patients with MI for more than 5 years. At that time, a registered nurse who had been working in an intensive care unit with extensive experiences in working for patients with MI, being a clinical instructor, and got qualifications in special training for patients with cardiovascular diseases, was selected as a nurse case manager in this study.

However, as time went by, a lack of nursing staff in ICU became an issue in this hospital and thus this nurse case manager needed to opt out this role and became a consultant for the following nurse case manager. The key informants discussed about this change and agreed that a registered nurse who were in charge of the ward should act upon this role during this transition. As a result, the job allocation for a nurse case manager and also other health care professionals had been developed so that every member of the MI patient care team would clearly understand their roles responsibilities in using the clinical pathway as a tool for care collaboration.

2.Creating a Job Allocation

In the planning and implementation phase, a new job allocation had been established and proposed to the health care team. While the previous job allocation focused largely on doctor's assessment and investigation, this new allocation posed roles and responsibilities for all health care team involved in assessing and communicating what they had assessed and planned for patients to one another. In this way, collaborative process could be initiated and communication among health care team could better exist. Nonetheless, this communication still required an effort of a nurse case manager to coordinate care from one to another should there be any gaps in line of this way of communication.

3.Creating a Guideline

Along with the new job allocation, the researcher noted that the key informants started to develop a patient guidelines and manuals for use specifically for patients with MI. Some examples of the guidelines and manuals were developed by each discipline as follows (see Appendix G, I, J, K).

- Nurses: A manual of nursing care plan for patients with MI.
- Pharmacist: A manual of drug administration in patients with MI.
- Dietitian: A manual of nutritional guidelines for patients with MI.
- Doctor: A manual of cardiac rehabilitation and sexual activities in patients with MI

In addition, there were other new tools or documents related to effective management with patients with MI, for instances, an assessment form for self management of patients with MI, a record of length of stay and re-admission of these patients, and ;also a pain assessment tool (see Appendix N, O). These guidelines, manual, and tools were seen as evidence of changes occurring as a result of this PAR cycle. Other changes included a development of positive professional relationships among the health care team and also a drive for continuous quality improvement in caring for patients with MI in the following phase.

4.Creating Roles of Nurse Case Manager

While developing several guidelines and tools for use in patients with

MI, the key informants also discussed about the roles of nurse case manager for this case type. This was important for the health care team as many staff, both nurses and allied health, were unsure of the position of a nurse case manager. They would want to know of the distinguished roles and responsibilities of the case manager, in comparison to the registered nurses who performed regular work in the medical ward. The following was a transcript of one general participant who had been concerned of the role confusion.

“I am quite happy to cooperate with this change. However, I still don’t understand how and whether it is possible to have a nurse case manager. At present, we have a lot of patients. An RN has to look after 6-8 patients. If we are going to have one nurse managing care for patients with MI, what shall we do for the rest of the patients, especially during the afternoon and night duties. And if the case manager is on day off, who will care for these patients with MI. Will these responsibilities get back to the ward RN or else?”.

Form this concern, the key informants reflected on the need for an establishment of a clear role of nurse case manager. The following was a job description and roles of nurse case manager in this study.

- Assess patients according to the case type and gather information about them and their families for further problem analysis.
- Collaborate with nurses, doctors and other health care professionals to set up a care plan and discharge planning according to the patient’s problems and needs.
- Monitor care continuity activities and record variances occurring during the care process.
- Participate in the team meeting so as to discuss plans and issues related to the case type.
- Act as a nurse consultant for nursing team in regard to nursing care and case type issues.

- Document and make a report to head nurses and hospital management team about the outcomes of case management: both quality and cost outcomes.

From the above role identification, it was obvious that a nurse case manager in this study needed to provide both direct care and manager's role in the ward setting. The direct care roles mainly involved the assessment and evaluation processes. In this way, the staffing ratio remained unchanged or affected. Also, a nurse case manager would use her knowledge and expertise to craft the competencies of other nurses in a ward unit to become knowledgeable about caring for patients with MI. For example, previously many nurses in the ward were unable to assist with EKG performance or preparation. The nurse case manager started to provide a training course and workshop for nurses in the ward about EKG monitoring and assessment. As a result, when the manager was not on the ward, other registered nurses were able to assist patients and health care members better with these training skills and also used a clinical pathway as a guide to plan and monitor care management of the patients.

In light of this, nurses who worked in this ward started to learn about patients in this case type more, and become exposed to the ways health care professionals managed with health problems of these patients. Changes in nursing appeared in this PAR cycle when knowledge had been transferred from the nurses who had expertise to others who were junior or had fewer competencies. This would be one way to empower the nursing staff and help them to think more of gaining further knowledge and experiences in caring for patients either in this case type or others of their own interest.

In a manager's role, the nurse case manager in this ward was required to put an extra effort to coordinate care and manage all care processes to meet the outcomes required. The roles of case manager thus required not only clinical expertise within each case type, but also effective management and communication skills so as to enhance team building and outcome management. The nurse case manager herself also learned a great deal in this management role, especially when dealing with health care professionals in both vertical and horizontal lines of management. The following was the statement that the nurse case manager made toward the changes within her roles of management in this study.

“I think the roles of case manager are very challenging. In addition to providing nursing care for patients, I still have to keep running the clinical pathway which requires a lot of collaborating skills to work with pharmacists, dietitians, and other health care members. It is not just to work with them as we used to in the past, but to work ‘well’ with them in order to achieve the target goals of good and effective care for the patients”.

As revealed in this statement, there were changes in this nurse’s perception about her new roles for being a case manager. The perceptions of other nurses as well as key informants had also been changed and would be discussed later in the further sessions.

5. Developing a tentative care delivery model

In the phase of setting up a plan, the researcher also facilitated the development of a tentative model for nursing case management for patients with MI. After several meetings and discussions, a tentative model were developed and piloted with five cases with MI in this medical ward at Sawanpracharak Hospital. There were changes in the practice of care delivery for this case type as follows (see Figure 8).

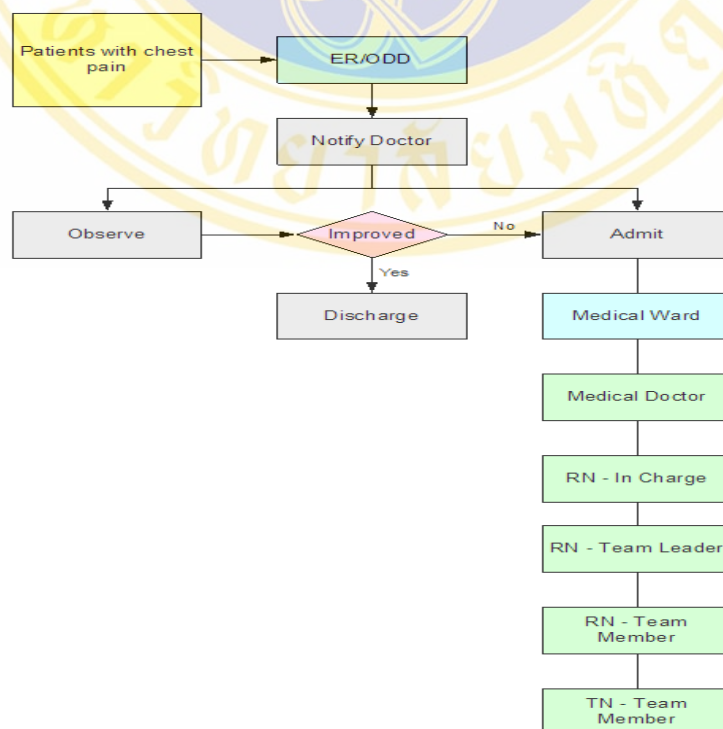


Figure 8 Practice of care delivery for patients with MI in the past

In the past, patients with MI would come to the hospital with a typical line of patient management. A decision making would be done basically by the physician primarily, and hence excluded expertise of other health care members as a 'team' care provider. Not surprisingly in previous years, nurses as well as other health care professionals appeared less active in the care management process. Patients and families became recipients of care rather than a center of caring approach as indicated in the philosophy of hospital care in many health care settings. The key informants took the concepts of case management into account and designed a tentative care delivery model that came under their group's agreement. This tentative model focused more on patients' needs and problems, while using a nurse case manager as a key person to coordinate and manage care in the ward setting. While nurses always were in a pivotal role of taking care for patients, it was noted that this role was limited to care activities rather than quality and cost management. In the managed care era, when issues of quality and cost were both important, it was necessary for nurses to advance their roles to improve care management for patients. Figure 9 demonstrated the new design of care delivery model that was consistent with the case management approach and proactive roles of nurses.

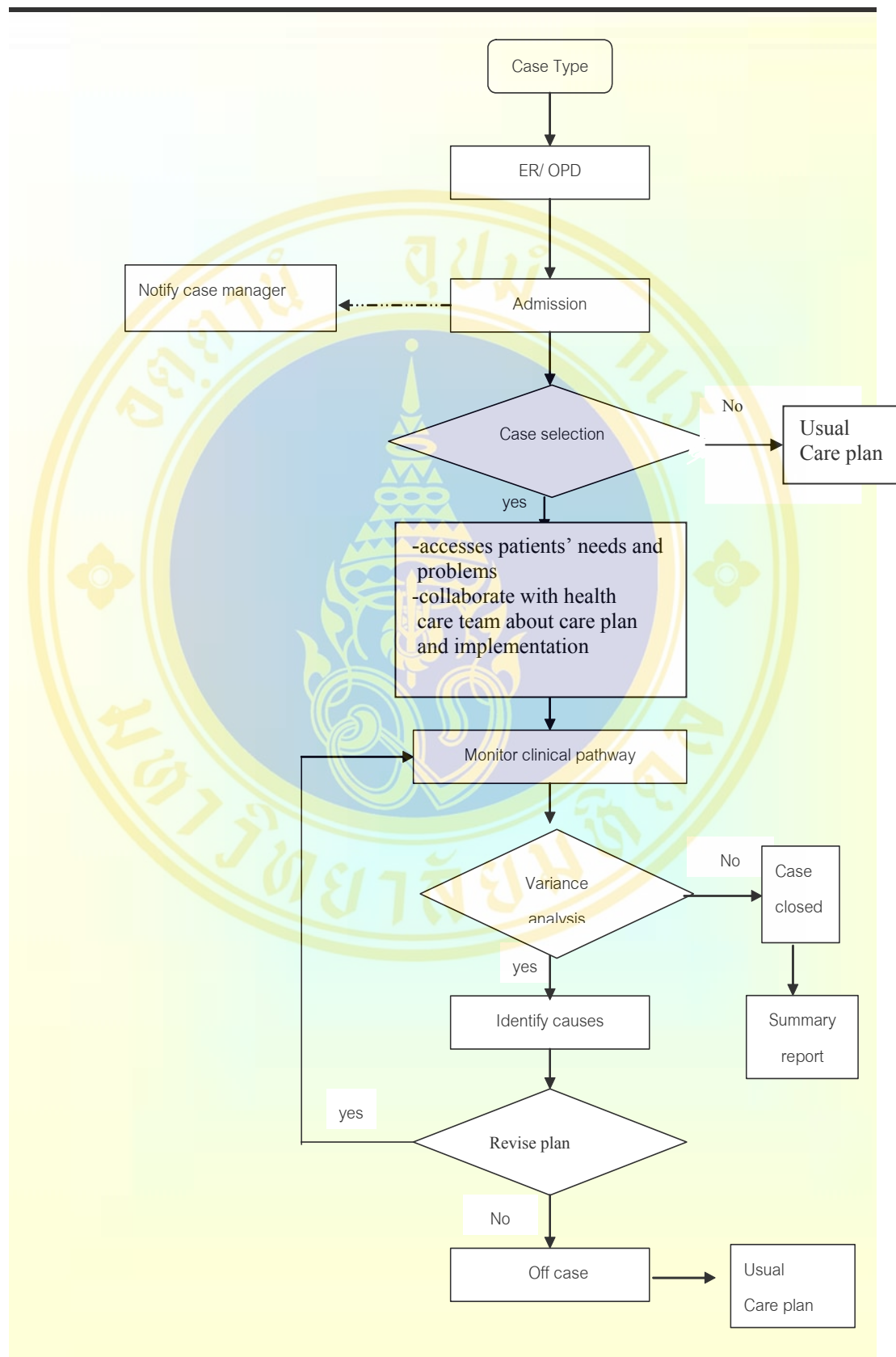


Figure 9 Practice of care delivery for patients with MI in the NCM model

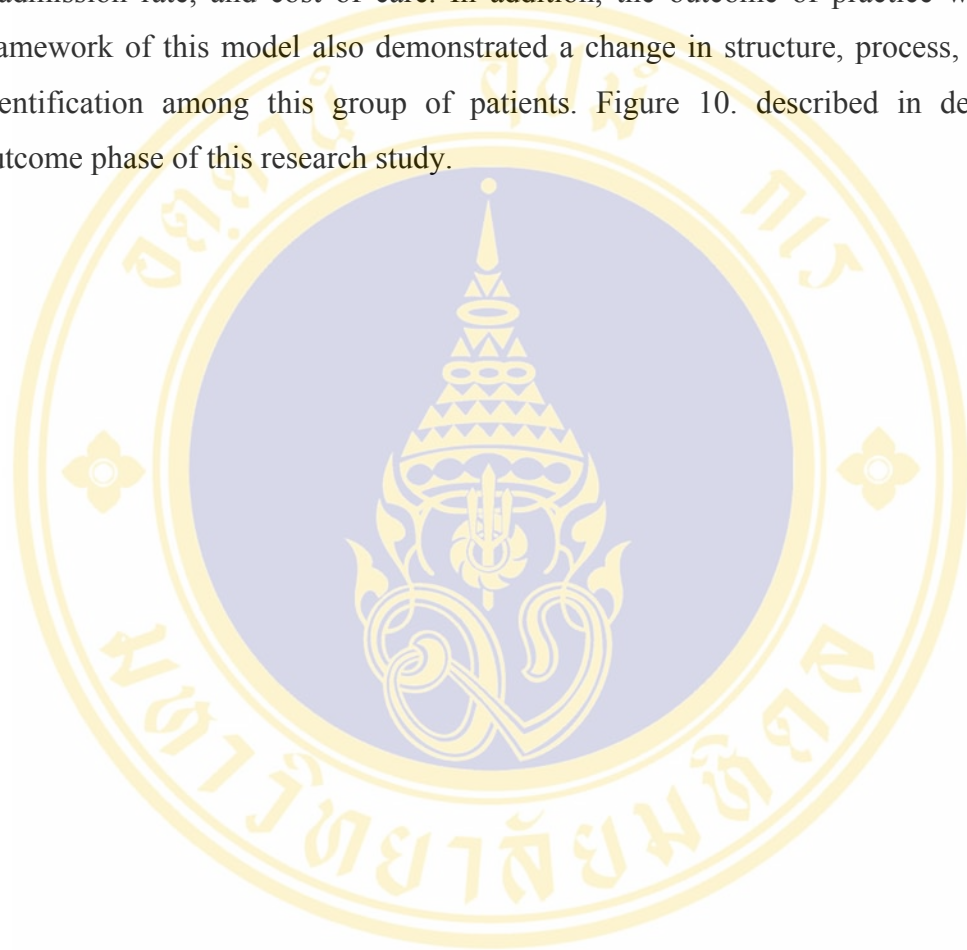
Once this tentative care delivery model was developed, the key informants and researcher piloted this model with five patients with MI under the case selection criteria. There were some amendments of clinical pathway made by the key informants so as to make it congruent with the ward culture and understanding. In addition, the key informants had invited some health care members in the hospital to be a peer review team in order to critique this model. On the whole, there were changes in the use of clinical pathway in the following aspects. First, the informants developed a guideline for use of clinical pathways for ward staff information. Second, there was a mini-case manager assigned for nursing staff working in the afternoon and night duty so that continuity of care plan and management would be maintained.

Lastly, there was some translation of clinical activities indicated in the pathways from English into Thai so as to make all users clearly understand and use them appropriately. After all modifications had been made, the key informants started to step further to an implementation phase. The model was implemented with fifteen cases of myocardial infarction. Every key informant took part in the clinical pathways activities and reflected on one another with regard to the outcomes of each care activity. The researcher remained a facilitator for the group process and reflected on issues that had emerged during this phase of the PAR cycle.

Phase 3: Evaluation Phase

This phase looked at the evaluation process and outcomes of the new care delivery model and its implementation. In this phase, the researcher examined how research participants or key informants developed indicators for measuring the outcomes of the case management model. It was noted that evaluation process in fact happened simultaneously with the implementation phase. When the key informants performed or implemented any clinical activities with patients with MI, there would be evaluation occurring thereafter. During this phase the nurse case manager also gather any variances that occurred during the use of clinical pathways. When any variances were noticed, the key informants would discuss and found out their courses and tried to resolve the problems. They then re-planned the caring activities with patients and care team and implemented them again. Should there be any excessive variances happening, the cases could be exclude from the clinical pathways used.

Also in this phase, there were some cases being excluded as a result of their great variations from the case type. One the whole, there were fifteen cases of MI that went on the use of this nursing case management model. The informants identified the outcomes of model which were measured through staff and patient satisfaction, readmission rate, and cost of care. In addition, the outcome of practice within the framework of this model also demonstrated a change in structure, process, outcome identification among this group of patients. Figure 10. described in details the outcome phase of this research study.



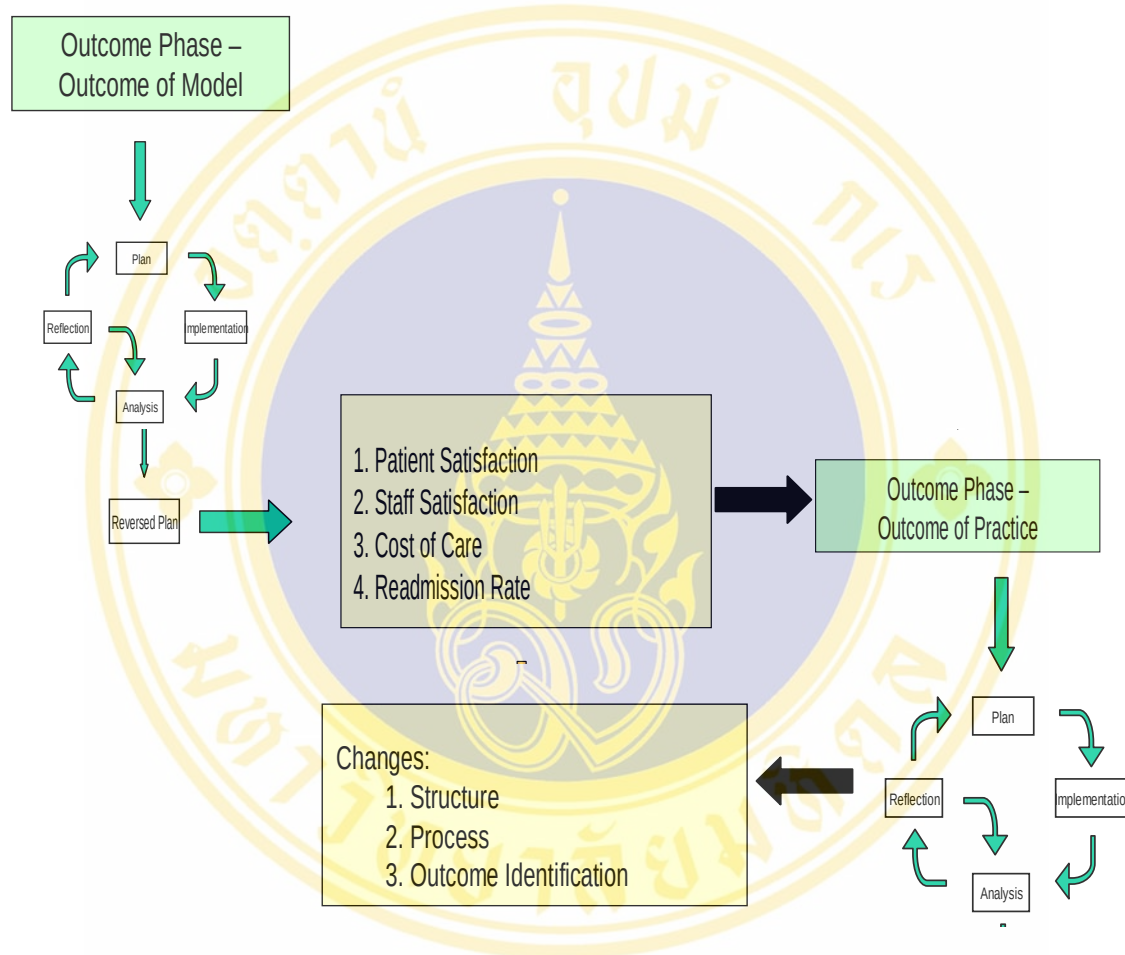


Figure 10 Evaluation phase in NCM model development

Finally, the outcomes of practice demonstrated a need for changes in the structure, process and outcome identification associated with this model in the future. A change in structure of care delivery included a provision of adequate and appropriate unit, equipment, and staffing level and numbers. In addition, line of hospital organization had become more decentralized reflecting different ways of hospital management in regard to patient care system. From previously, each health care discipline worked solely on their own plan toward each patient. In the new model, there was a path to patient care team to allow every health care discipline to work on a collaborative plan for the patients. Care would therefore be less fragmented and hence enhanced a professional relationship among the patient care team. Evidently, there was a change in the organizational structure of the line of patient care management in the hospital as revealed in Figure 11 as follows..

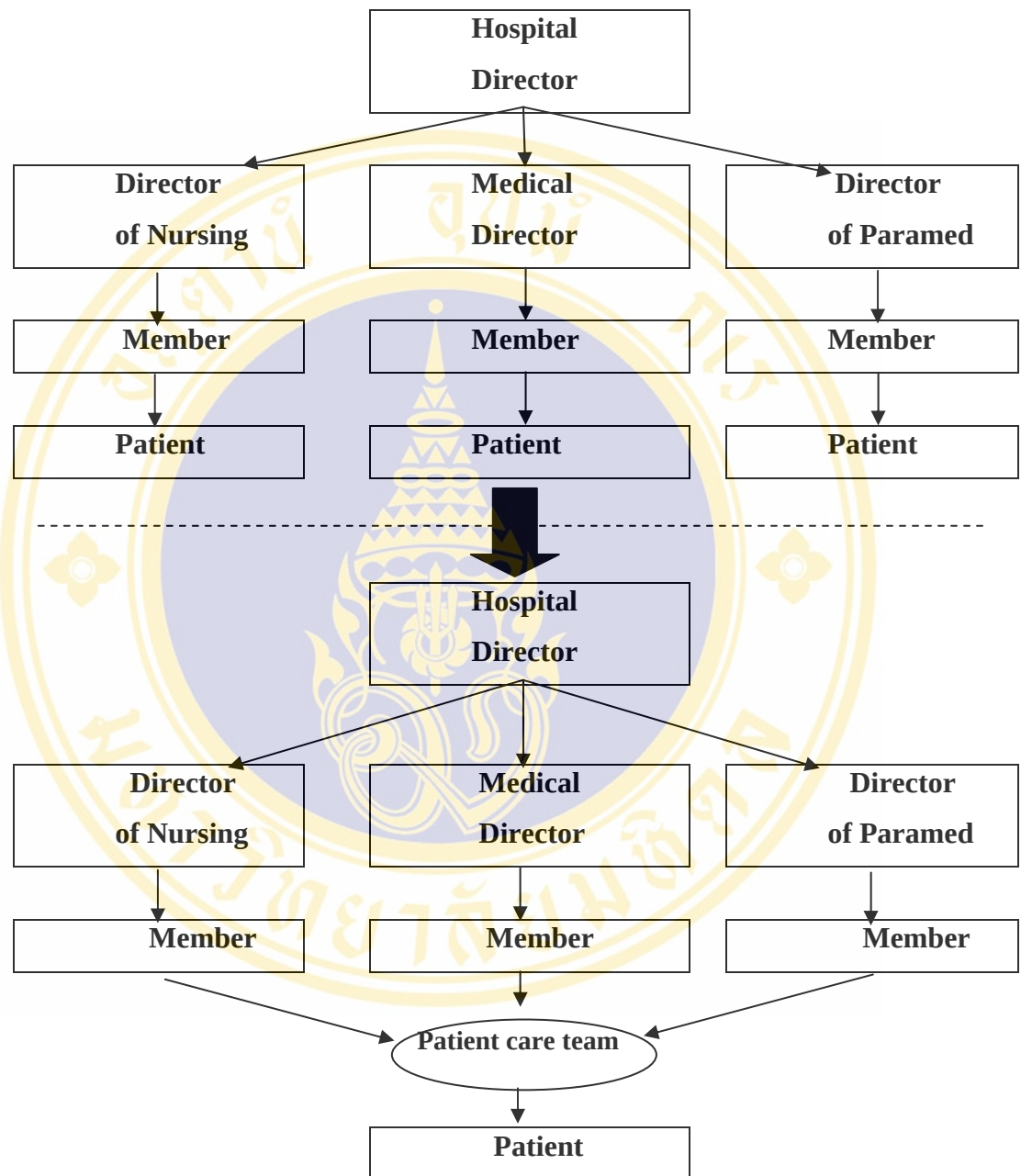


Figure 11 A change in organizational structure toward collaborative care

Furthermore, a change in the process of care delivery included an integration of all health care members and patients to collaboratively develop a care plan for patients using a timeline as an initial frame for cost containment. For a change in outcome identification, the findings demonstrated that while previously the care process was not well integrated between nurses and the health care team, in the nursing case management model being developed in this study there was a more collaborative way of practice of the nursing staff and the MI multidisciplinary team. Moreover, all patient care team were much more concerned of the budget issues and thus put forward the DRG cost control in the outcome identification.

On the whole, the key informants stated that at this time of the health care reforms in the country there was a need to focus on the three parties involved, including the health care consumers, providers, and payers or budget providers so as to balance both quality and cost outcome management. Figure 12 illustrated how process of care and outcome identification for patients with MI had been changed in each phase of the PAR process in this research setting.

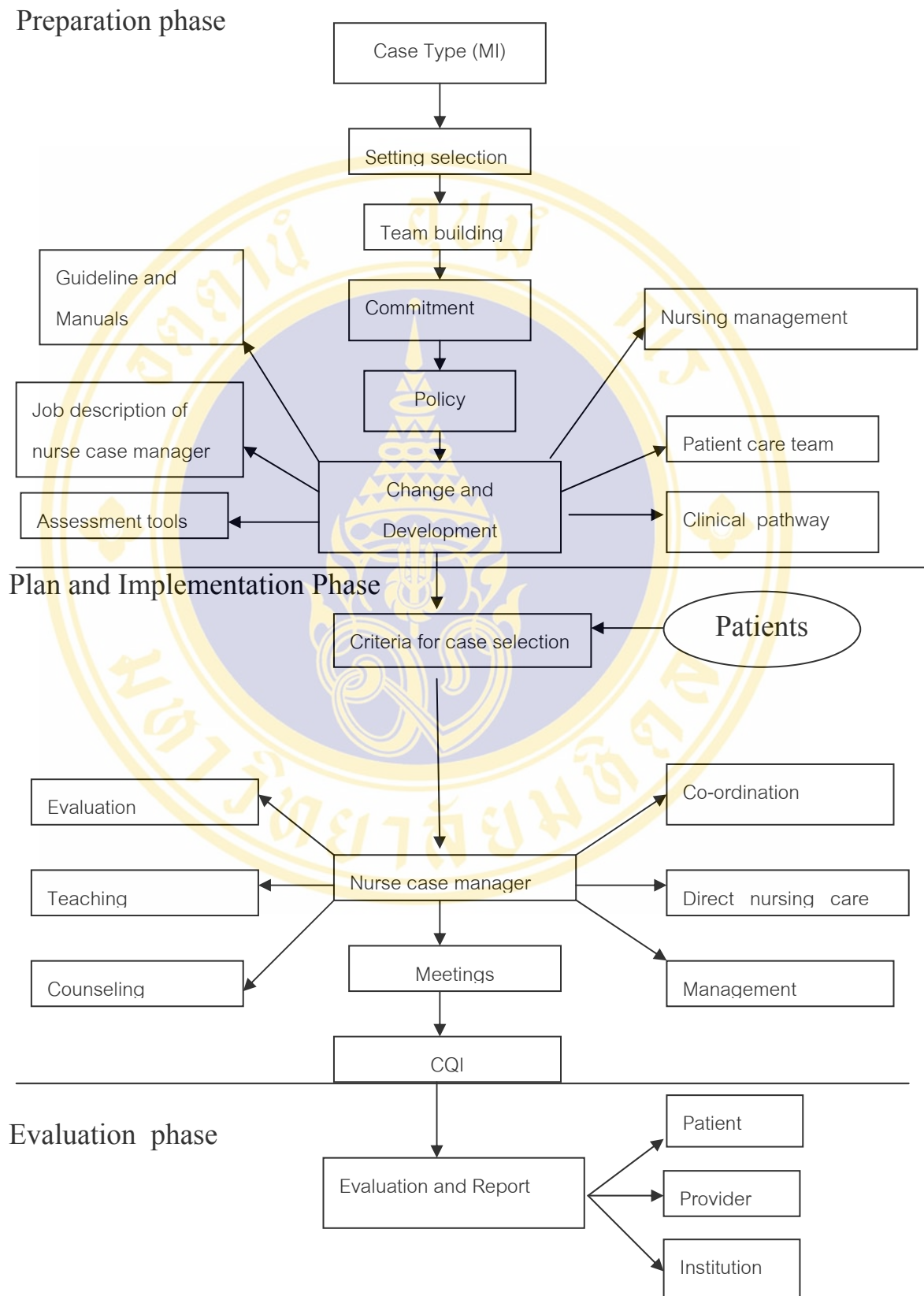


Figure 12 A change in the process of care and outcome identification in each phase

Nursing Case Management Model in Patients with Myocardial Infarction

Finally in drawing a model of nursing case management, it was necessary to note that this model has sought a collaborative practice among health care members in managing effective and good quality of care for patients with MI under the present health care system, where budget constraints and issues of quality improvement are largely being debated. Figure 13 revealed a nursing case management model for patients with MI in an overall picture of the health care management in a Thai setting under this research study. Obviously, this model put patients as a center of care using a nurse case manager as a key coordinator and care manager in the caring activities and managed care process. The nurse case manager thus became an integral part of the care delivery system that kept working backward and forward with other health care providers and payors to ensure good quality of care and cost effectiveness.

In light of this model development, it was interesting to note that this model attempted to challenge the notion of traditional care delivery models in that nurses could work in a more horizontal line of care management than previously in managing and coordinating better quality and more effective care for patients with MI in this instance. Using a quality improvement cycle of assessment, care planning, implementation, and evaluation while having the patient as a center of all care processes, health care professionals could enhance a holistic approach in their caring practices better than ever. Through better and more effective communication and collaboration, by using a best practice tool such as clinical pathways, nurses could be a key personnel to assist patients and families to receive more patient-focused care, collaborate with multidisciplinary with greater recognition of nursing professional status, and serve well with the payers, either public or private, who have power influential for care management for patients in Thai health care society nowadays.

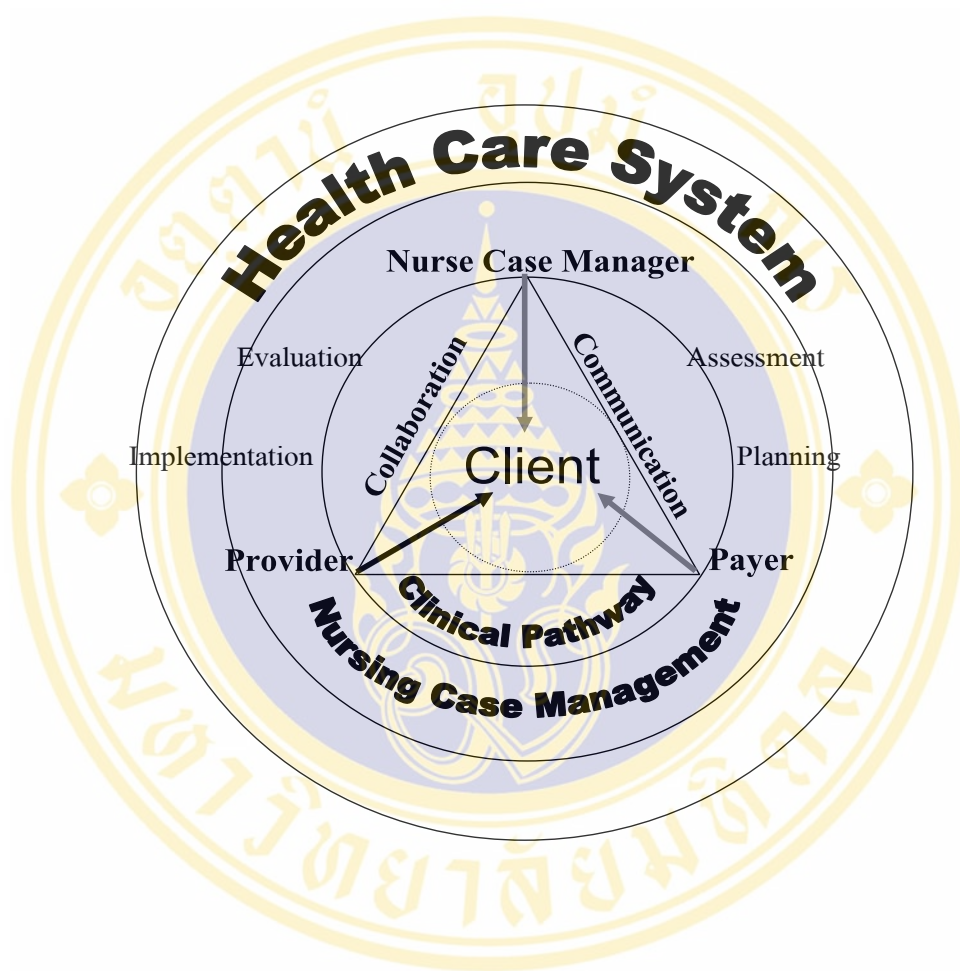


Figure 13 A Model of Nursing Case Management for Patients with MI using a nurse case manager as a key care coordinator

Outcomes of Nursing Case Management

In this study, the researcher looked at the outcomes of nursing case management in two aspects. First, the outcomes of the model were reported, and second, the outcomes of care delivery practice were also presented. The outcomes of the model included patient, staff, and organization outcomes. These outcomes put an impact on both quality and cost issues related to caring for patients in this group. The following were results of patients, staff, and organization outcomes associated with the provision of care within the design of this case management model.

1. Patient Outcomes

Patient outcomes in this study were measured through both patient satisfaction and their attitudes towards caring practices of the health care team within this new model of case management. On the whole, all patients participating in this research study were satisfied with the provision of care through nursing case management model. They provided details of their satisfaction as follows.

1.1 Satisfaction from Getting Close and Good Attention

From interviews and observations during the fieldwork study, many patients with MI in this study stated that they had got close and good attention from health care providers in the ward, especially nurses. One patient expressed the differences in his perception of health care services in this hospital before and after his admission.

“I came to this hospital as a ‘patient’ for the first time. I was quite apprehensive and afraid of the hospital and especially nurses. People often said the nurses here were ‘du’ (unpleasant), but when I was admitted I really received good care from them. They were ‘jai-dee’ (kind) and very attentive to my health needs”.

Another patient also commented on care being given by health care providers in this ward. He was satisfied with both medical and nursing staff in this ward setting.

“When I had chest pain, I felt like I’m dying. A nurse came to help me and then notified a doctor. The doctor came to see me very promptly, and then I had some medication which really helped”.

Further more, a patient who had had bad experiences with care provision in other hospital compared the quality of care and explained:

“I am very happy with the care provision and staff here. They are very busy but they still take good care of me. Nurses also have sweet words with me. I used to go to a hospital (identified name) around here but it was very bad. The nurses had bad words for patients and doctors hardly came to see me everyday”.

In relation to family involvement and satisfaction, it was noted in the interviews that some family members felt good about the care provided for their family members that were ill.

“My husband had been hospitalized for the first time, and I was very worried about him. I wanted to stay with him overnight to care for him, but the staff said I should go home. My husband then reassured me not to get worried and said here the staff provided very good care for him”.

During the fieldwork process, there had been no complaints about services or staff issues reported by this group of patients. In addition, they acknowledge the hard working of all staff devoted for caring for them and all other patients.

1.2 Satisfaction from Receiving Relevant and Useful Information

While being satisfied with professional attention of the staff in this ward, several patients also advised the researcher of their contentment with the information provided by them. A patient with MI in this study stated that:

“I was contented about the information that the staff had given. I now know when to go home. They said it is 6 days, and I have had heart problems so I have to rest in bed (first day). Then the next day they started to teach me what I should eat, and how I should manage with my own activities”.

Other patient described in details information of how to improve his lifestyles, such as diet control and so forth, that he should maintain in the future.

“I may have to stop the greasy food, cigarette, and alcohol for the rest of my life. They are too risky for my heart”.

The information that these patients had received made them feel confident and able to care for themselves when they were at home. As one patient stated:

“When I return home, I will follow the guidelines that the doctor, nurses, dietitian, and pharmacist have suggested. I am confident that I can do it”.

These patients all agreed that nursing staff and other health care professionals had provided relevant information to their health needs and concerns. They acknowledged the satisfaction toward adequate information they had received throughout their hospitalization.

1.3 Having Positive Attitudes toward Health Care Providers and Hospital

During the interviews with regard to patient satisfaction, the researcher noted that most patients with MI in this study felt gratitude for all care they were provided. They expressed positive attitudes toward the staff and hospital as revealed in the following by a few patients. Some had sent a report to the Hospital Director to appraise the health care team in this ward.

“Khob khun (thank you) very much. I now can go home. Thank you every staff for taking good care of me”.

“I had chest pain and came to this ward (medical ward 1). The heart doctor, nurses, dietitian, and pharmacist look after me very well. I thank the doctor a lot, also the hospital and all the staff here”.

2. Staff Outcomes

In relation to staff outcomes, the researcher divided them into two levels. First, the satisfaction of staff at the administrative level, and second at the operational level. The following were some examples of their transcripts expressing their feelings toward the use of nursing case management model for patients with MI in this ward.

2.1 Administrative Staff

It was reflected by the patient care team of patients with MI, which were also the key informants, when they approached the hospital administrative staff that the administrative staff at the hospital were impressed with the outcome of this

model application. One felt that the reputation of the hospital had been improved. As one informant stated:

“The Medical Director of the Medical Department told us that he had received information about how care had well been improved for patients with MI at the present time. He felt that the care team was very diligent. Also the Deputy Director of the hospital also appreciated this model as it had worked well with the concept of hospital accreditation. If this model was successful, then it would serve well for the quality improvement for patient care in the hospital”.

Also, a nurse in this study reported how the administrative nurses felt about the implementation of nursing case management model in the ward setting.

“This administrative nurse said that she went to attend a meeting in Bangkok last week. Many head nurses of other hospitals wanted to come to visit us (Sawanpracharuck Hospital) and see how case management works. They wanted to find out how they can apply to their hospitals”.

2.2 Operational staff

While many administrative staff started to appreciate the model of nursing case management, at an operational level staff who had been working in the ward were also satisfied with this care delivery model. In what follows, each care discipline expressed their feelings toward this new approach.

2.2.1 Doctor

In this study, there were medical officers revealing their ideas about this model being implemented. A medical doctor stated that:

“I think clinical pathway has helped the care team to have guidelines for patient care. Nurses also could have their performance improved with specific care for the specific group of patients. This can help improve quality of care for MI patients”.

For specialists, it was recognized that the key informant who had been actively involved in the development of this model was also satisfied with the outcomes. This cardiologist mentioned that:

“Now following the diagnosis of MI, we can care better for the patients. I reckon we can extend to other patient case types, and other can apply from us”.

2.2.2 Pharmacist

“The main responsibility of a pharmacist is to ensure that patients receive the drugs according to their health problems and get good recovery. If they had no correct or inadequate information about drugs, that will be a bad gap in our (pharmacists’) practice. For me, to participate in this model development and care improvement, especially in patients with MI who are considered as a high risk group, it is a fulfillment for me as I can help improve the quality of pharmacy service and also of care for patients”.

2.2.3 Dietitian

“I feel excellent to get to talk and touch the patients, to learn what they need about their diet, to have a chance to participate in making a diet plan for patients, to be able to teach how patients could adapt their diet for their health. Actually, I now read more of advanced literature on diet. I am proud to work with the patients, not just ‘get’ the diet for them”.

2.2.4 Nursing Staff

“We now are happy with our work. We think this model makes us work more closely with patients and the health care team. We are happy because the patients are happy”.

“We now gain more confidence in looking after the MI patients. In the past we could not say much about the sexual issues in this type of patients. Now we can use knowledge learnt from the medical staff and from textbooks to help us advance own knowledge and skills to approach the patients”.

“I heard that many doctors admired our competencies in caring for MI patients. I think nurses now use more standardized guidelines for patient care and can teach others to know about MI patients”.

3.Organizational Outcomes

Organizational outcomes were measured through the data related to readmission rate, length of stay, and cost of care. The researcher took the results that the key informants gathered in the outcome phase to demonstrate the organizational outcomes among this group of patients. Obviously, the readmission rate was zero, which demonstrated a positive outcome of the model use. With respect to length of stay, the data revealed that there was a decrease in the length of stay for patients with MI in the study. In relation to cost of care, there was also a decrease in cost of care which was revealed when compared between the actual cost and that of DRG. Figure 14 and Figure 15 showed the average length of stay and cost of care for these patients respectively.

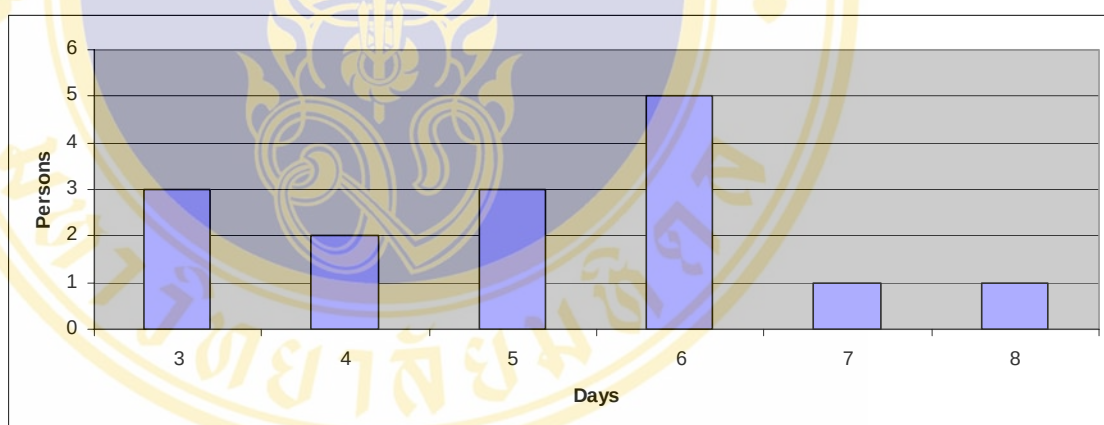


Figure 14 Average length of stay of Patients with MI

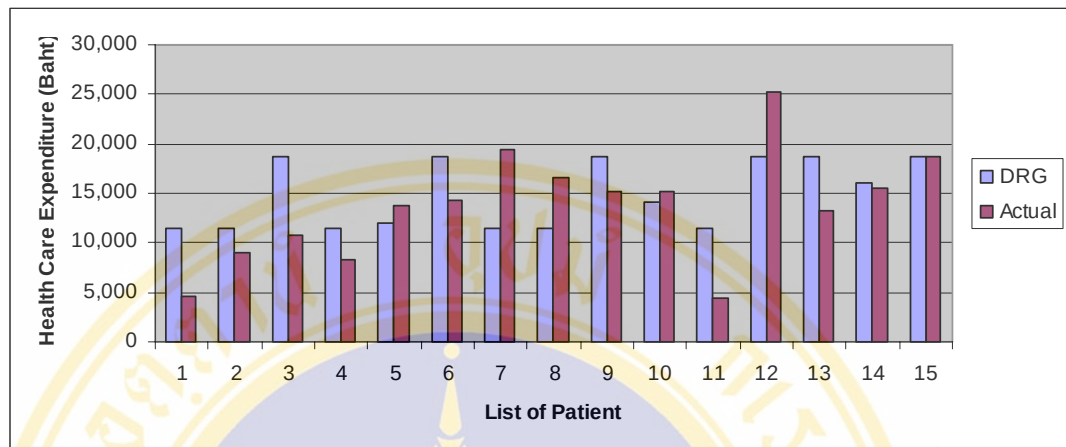


Figure 15 Cost of care for each patient with MI between DRG and actual cost

Strategies and Barriers in the Process of Model Development

In this research study, the researcher observed and documented a number of strategies toward the success of this model development and implementation. In addition, a lot of barriers occurring during the process of this model development were also noted. In what follows, the researcher described these issues so as to demonstrate both supporting and impeding factors in the development of nursing case management in this research setting.

Strategies

During the PAR process of this study, the researcher identified effective strategies that had been a great support for the accomplishment of this model as follows.

- Support from the health administrative team to facilitate changes occurring in the research process
- Hospital accreditation system that had been a good foundation for health care team to focus more on quality services

- Hospital policy that enhances the concept of patient-centered care and collaborative practice
- Commitment of the key informants and patient care team to improve service delivery model for patients with MI
- Cooperation and effective communication between the head nurse who acted as a case manager and the health care team, both in the ward setting and home health care services

Barriers

While addressing strategies that supported the achievement of this nursing case management model, the researcher also acknowledged the barriers that were major obstacles to the process of this model development. These barriers were identified as follows.

- Resistance to change in service delivery model. Some nurses did not clearly see the benefits of this change and perceived that this change might increase their workload in the ward, while a general practitioner stated that he was not sure about the use of this model. He perceived that this model would fit only with the cardiologist and thus did not involve the general practitioner like him.
- Workload of the health care team due to an increase in time utilization for the meetings, both hospital meetings and additional meetings related to this research study.
- Rotation of the health care team in this research setting. Generally, cardiologists and doctors who were general practitioners in this hospital were required to work on a ward rotation basis. These staff were slightly unsure whether such rotation would affect the research process. During the first phase when the key informants started to plan for the model development, there was a gap in the communication processes especially in relation to the patient care team (PCT) meetings. Until the PCT was well set up and the medical staff could settle more, the meetings among the key informants could be better scheduled and the progress of the research study was continued.

- Unexpected event that had implications on the progress of model implementation. As described earlier in this chapter, there was an epidemic of Norwegian Scabies during the implementation phase, which was a serious and fatal issue in this hospital. A total of 47 health care staff at this hospital who had been exposed to this infectious disease had to stop their work for a few weeks. As a result, the health care team had to delay the process of piloting the model for a while and paid most attention to the interventions with particular issue. Nonetheless, this epidemic was subsequently controlled within a few weeks and the process of the nursing case management could then move on smoothly after this interruption.

In summary, this chapter demonstrated the details of each aspect of the findings. These included the study context of this PAR study, the results of each research process, a possible model that had been trialled and implemented, and the outcomes of the use of this model. Finally, strategies and barriers taking place during the research process were presented in order to enhance a better understanding of issues surrounding the development of nursing case management.

CHAPTER V

DISCUSSION

This chapter discusses the development of nursing case management model in patients with myocardial infarction within the scope and conceptual framework of the research study. It compares similarities and differences of the model developed in this study and other existing nursing case management models in other settings. Specifically, the discussions will be focused on four aspects of the development, including, the characteristics of a possible model of nursing case management in this research study, the process of the development of a nursing case management model in patients with myocardial infarction along with changes in the research process, the outcomes of the model, and the issues related to strategies and barriers that affected the research process in this study.

The Model of Nursing Case Management

The model of nursing case management for patients with myocardial infarction developed in this study was in congruence with the concepts of nursing case management in that it focused on quality and continuity of services and cost of care within the current payment scheme for diagnostic-related groups in Thailand. To ensure both quality and cost outcomes, this model utilized a nurse case manager, who had been familiar with the managed care system especially for patients in this case type. As the term ‘case manager’ was rather new in the Thai health care system, including in this research setting, the model thus pointed to the need for nurses to act as a care provider as well as a care manager to meet the patients’ needs and also the objectives of health care team and the hospital.

Characteristics of the Model

The distinctive characteristics of this model included coordinated care management for a specific group of MI patients using a nurse case manager as a single point of reference. The nurse case manager was required to effectively

based setting to meet the expected outcomes of patients, within a pre-determined timeframe which was controlled by health care payors, such as a social security or 30-baht scheme. The case manager also needed to be exposed to the managed care system, while maintaining quality and continuity of care for patients.

Notably in this study, it was apparent that the nursing case management model had been operating within a changing health care environment in Thailand, where payors were seen as powerful and influential to both health care consumers and providers (Piravech, Lohakitsatean, Piriyaiprasan, Nimcheng & Chanasarechai, 2005). This new model therefore put the nurses at a bridging position to act between different parties including patients and those in powerful positions, both health administrators and payors, to achieve the expected outcomes of all parties involved. In this model, the nurse case manager thus needed a strategy, such as the use of clinical pathway to facilitate effective communication with every party in health care services. This was seen as a way to improve transitional care, patient centered-approach, and cost containment through time and resource utilization.

Unlike the previous care delivery system which combined team and functional nursing, this model used more of continuity of care and patient-centered approach by involving patients and their families to participate in each aspect of care including discharge planning. As a result, patients were not merely a recipient of care but a participant who could voice their needs and concerns more than previously. The level of participation of patients in the nursing case management thus reflected the meaning of client-centered and reinforced a greater satisfaction among the patients.

In comparing this model with other care delivery models in Thailand, it was revealed that this implemented nursing case management model shifted the concept of top-down management to a more decentralized approach. The fundamental focus of this particular model was to integrate, coordinate, and advocate for individuals, families, and groups requiring extensive services, ensuring that patients receive appropriate, individualized and cost-effective care within a system of services. The informants supported that the emphasis of care had been changed from a task orientation to the outcomes of medical and nursing interventions throughout an episode of illness and/or treatment for MI patients. Moreover, this model was based on a philosophical and practical approach built on trusting relationships with the

patient as a partner, which provided more of individualized care, patient education, advocacy, and promoted adherence and treatment completion.

With these characteristics, it was apparent that the gaps in previous health care services for patients with 'MI in this research setting started to be diminished and created positive outcomes for both patients and health care providers. For instance, cost of care for patients with MI had been decreased with a lower rate of readmission due to complications within 28 days post discharge among this group of patients. These findings were consistent with a study of Kegal (1996) who reported that nursing case management using primary nurse case manager in the care process reduced duration and cost of care for patients with cardiovascular diseases. From the findings, the hospital administrators also started to see the benefit of the new model and thus were also inclined to support further development of this particular model.

Primary Nursing Case Management in MI Patients

Overall, when examining the characteristics of this possible model of nursing case management for patients with myocardial infarction at Sawanpracharak Hospital, it was noted that this model was similar to the Primary Nurse Case Management Model (PNCMM) in the United States (Cohen & Cesta. 2001). As revealed in chapter two, the focus of the Primary Nurse Case Management Model is on managing care and utilizing a unit-based and outcome-oriented approach. Basically, the PNCMM model focused on achievement of clinical and financial outcomes within the designated interval, such as length of stay as designated by the DRG system. In addition, this PNCMM model is often accomplished by the primary care provider as a case manager, effective management processes for each specific case type, and management of continuum of care from admission to discharge.

Evidently, from the findings of this research study the case management function was provided by the staff nurse at the bedside. The head nurse worked as an in-charge of the whole ward, looking at both quality and human resource management. She would allocate a primary nurse at bedside to act as a nurse case manager, once an MI patients had been classified as fitted in with the selection criteria for case management. Each primary nurse who was designated as a case manager generally provided direct care, collected data on patient variances from the clinical

pathway and shared this data with the responsible physicians and other disciplines that participated in the clinical pathway. This data was then used to explore opportunities for improvement in the pathway or in hospital systems.

Similar to many studies in relation to multidisciplinary care for MI patients, different health care professionals proved to be significant members of the patient care team (Kegal,1996). Suggestions had been made that the multidisciplinary care team that should have a collaborative practice for MI patients within the scope of this model should include a nurse case manager who had expertise in cardiac care, specialized cardiologist, pharmacist, dietitian, physiotherapist, social worker, home care nurses. Overall, in addition to the nurse case manager, the care team that participated in this study included a physician, pharmacist, dietitian, and nurses at ward-based and home-based settings. The list of these participants was decided upon a group decision prior to the beginning of this study. While others, such as a physiotherapist, could play an important role in enhancing patient outcomes in cardiac rehabilitation, evidence in this study showed that this health care discipline had not felt confident with his competencies in cardiac rehabilitation and thus declined to participate in the study. As a result, the cardiologist in the ward setting had to assume this role as he had had both knowledge and willingness to do it. By and large, when it came to practice, the appropriate care team could be adjusted according to the context of each health care setting as well as its staff commitment.

Comparisons to Other Case Management Models

By contrast, the nursing case management model at this hospital was not relevant to those of other four models generally and widely used in the US acute care settings. These included the leveled practice model, primary case management model, Saint Vincent Hospital and Medical Center Integrated Case Management Model and Tuscan Medical Center Case Management Model, in that the case manager in these four models do not provide direct care to patients (Cohen & Cesta. 2001). These four models are not suitable for the current Thai hospital context, where Thai nurses who are at a practice level are mostly required to provide direct care to patients. Managerial practice remained the second job priority where super-ordinates often assumed their management roles in the hospital. As a result, the use of registered

nurses at a practice or operational level to conduct a solely hand-off care provision, it might not be possible nor appropriate especially when there were limited number of nursing staff.

Also, in existing models of case management there were differences in their goals. Social case management, for example, attempts to delay admission to acute care hospital by providing assistance to patients with activities of daily living at home. Primary care case management, on the other hand, is based on a medical care model, in which medical problem of a patient is a focus of case management. It often requires advanced medical technologies and physician usually serves as a case manager (Johnson & Grant, 1985). This type of case management is primarily for hospitalized patients (Cohen & Cesta, 2001).

Furthermore, medical social case management model is another model that is used in patients with potential risk of hospitalization. Unlike the above two models, this model combines both medical and social services and involves assessment of patient's problems, care planning, care coordination and care monitoring. For patients with chronic illnesses, private case management is directed at patients outside publicly funded program. Social workers or nurses can be employed as case managers. Nursing case management is another model of case management used in an acute care setting. In this model, nurses are usually employed as case managers. the hospital and especially the medical ward currently.

Once more, primary nurse case management model in the US reflected much of the model developed in this study. It focused on outcomes of the model and is governed by a clear timeframe of operation. It featured case-type nursing care. The role of nurse case managers was direct care provision and coordination of care among health team using clinical pathway. DRG served as a primary factor necessitating the need for the development of this model. Nursing care began at the admission of a patient to a hospital until the patient was discharged. The present model differed, however, a little from the primary nurse case management model in the US in that it did not address the preparation of a patient before admission to the hospital due to time and resource constraints during this study.

From this point, the nurse case manager would act as a primary nurse taking care of this patient and managing care from the date of admission until discharge.

While this nurse assumed the care provider's role, her management roles included coordinating care activities among health care team and patients as well their families. Critical pathway was used as a tool to guide care through collaborative practice and was created within a designated time frame as per DRG criteria. The nurse case manager also used an outcome-based approach to monitor the results of each care plan and intervention. This was well in support the notion of quality of care in Thailand where hospital accreditation put an emphasis on a quality monitoring system in recent years (Ministry of Public Health, 2001).

Primary Nurse as a Case Manager

Obviously in this study, the present model encountered the same problem with the US primary nurse case management model when it concerned of a utilization review system. This was because the development of this model was at an initial stage largely focused on quality of care rather on cost containment. Traditionally, Thai nurses also usually played very little role in the health care management when it came to financing matters (Pichitpornchai, 2002). Due to the fact that there had still been a shortage of nurses, both at the national and hospital level, the principle role of nurses should therefore be directed at direct care provision.

On the whole, the main focus of the model in this study was on individualized care of patients with MI using a collaborative practice among the MI patient care team along with comprehensive care plan monitoring and management of a nurse case manager. With clinical competencies and effective nursing management of the nurse case manager, this model had been found to enhance nurses', health team's and patients' satisfaction, while reducing cost of care with a reduced length of stay and unnecessary rehospitalization. After changing from team nursing delivery to case management model, it was revealed that the nursing staff, in particular, were now satisfied with their enhanced competencies and capacities in delivering nursing services.

Furthermore, through a collaborative effort of the multidisciplinary team and case manager who helped train the nursing staff in the designated ward setting, it was apparent that many registered nurses could detect MI patient's problem better and faster. They also improved their abilities to perform specific tasks which were

relevant to the MI care competencies, such as effectively assessing and helping patients with chest pain and monitoring and reading EKG in MI patients. Zander (1988) also indicated that the nursing case management model fostered effective nursing practice as well as collaborative practice among multidisciplinary team, which was also evident in the present research study.

Reflection on the Model

On reflection of the development of a possible model for case management in patients with MI at Sawanpracharak Hospital, it was interesting to note that this model was developed in a transitional period of health care reforms in Thailand. For the past few years, consumer's rights had been a significant issue that created raising consciousness and awareness of the Thai health care providers to put patients in centrality of care more than ever. Primary nursing therefore would serve well with the need of health care consumers although needed to add its focus on cost consciousness also.

Having revealed the similarities to the PNCMM in the US, the researcher needed to reflect that the model developed at Sawanpracharak Hospital still had some differences in some aspects of its development. Firstly, the health care context of Thailand and the US were different to many extents. For example, the health care payors in the US were largely private health insurance companies and not the government agencies. These payors assumed power to manage monetary budgets and, in many instances, control health care practices and management in its society. As a consequence, many nurses and health care providers in the US tended to have struggled with the quality and cost issues when it came to make their best decisions for patients (Mullahy,1995).

Within the Thai health care payment system, the payors still were in a transitional process of managing and controlling the health care budgets. As a result, cost management was, to some extent, needed an exercise and adjustment within the DRG system of the Thai version. This meant that health care professionals in Thailand could express their concerns and raised their voices should the cost cut policy affect the level of care quality for patients. This had opened an opportunity for nurses and health care members to have an input in managing appropriate health care cost for patients. Nurses could play the role of an advocate should cost cutting

diminish the philosophy of good and effective care in the Thai health care services. The balance between quality and cost effectiveness therefore still was under scrutinized and exercise, which nurses could take part in maintaining the balance for the Thai consumers.

Secondly, the researcher addressed that in this study a primary nurse would assume the role of a nurse case manager for MI patients. It was apparent that only minimal number of the nurses participating in the study had had high education or advanced nursing practice qualifications. This was due to a transition in improving the roles and status of Thai nurses, which the Thai Nursing Council had supported and encourage nurses in the country to acquire higher education now and in the future. It was thus not surprising that there had been no certified nurse specialists or case managers in this hospital setting at the time of the conduct of this study. Unlike the US health care system and that in some other Asian countries, such as Singapore, the formal education and credentialing system for nurses who acted as a nurse case manager was quite evident. Nonetheless, it was high time for Thai nursing to start to think of and develop both job credentials and position to support and encourage Thai to acquire all advanced knowledge and skills necessary for effective care provision and management in the near future.

Process of the Development of Nursing Case Management Model in Patients with Myocardial Infarction

The process undertaken in the development of nursing case management model in patients with acute myocardial infarction is comprised of three stages, namely, preparation phase, planning and implementation (action) phase, and evaluation phase.

Preparation Phase

Preparation phase was needed for a study of current situations, perceptions and expectations of health team on the situations and problems related the care of acute MI patients. Problems, barriers and current practice had been identified before the model was later developed. Tasks involved in the preparation phase included identification of diagnosis, identification of setting, team building, commitment building, team development and system adjustment.

There are many criteria for choosing a disease or diagnosis for case management. In general, high cost and problems associated with the management of such diagnosis are chosen as criteria if the goal of case management is to reduce cost and improve quality of care (Rossi, 1999). According to Powell (2000), the diagnosis may be chosen if it incurs high cost, high prevalence rates, high treatment pattern variability, has inefficient systems and poor clinical outcome.

Setting identification is the next important task to be performed following the identification of diagnosis as it influences the development of the model of case management. Case management can take place in a variety of settings, it can be hospital-based or community-based (Institute of Quality Assurance and Hospital Accreditation, 2000). Different settings may require different models of practice.

Team building is another critical feature of the preparation phase of the model development. The goal of model development for nursing case management is to lessen multidisciplinary conflicts in patient care. Team building involved the identification of members of a team and characteristics of each disciplinary member. Following this, meetings were organized to identify problems and the need for model development. Plan was designed. Each member was then allocated a responsibility. Following team building, commitment must be built among team members. The plan was implemented and followed. Knowledge, understanding and skills were developed (Togmo-Armanasco, Hopkin & Harter, 1993). Learning programs, handouts and tools to be used in patient care were put in place. Some systems and work environments were modified to facilitate the development of the model. For example, changes were made to job allocation systems within the nursing organization, handover and admission procedures and procurement of essential equipments. New roles and responsibility were identified for each member. The nurse case manager's role was added.

Action Phase (Plan and implementation phase)

After the preparation phase, actions were taken and plans were implemented with patients at Sawanpracharak Hospital utilizing PAR cycles. The action phase began at an emergency department where a registered nurse (RN) assessed a patient whether he had had a chest pain as a result of MI experience. The RN then consulted a doctor

according to a clinical pathway. The patient was then admitted to the ward after informing the ward about the patient. The admission would take place within fifteen minutes. When the patient arrived at the Male Medical Ward I, an in-charge nurse would assign an RN to assess the patient and coordinate with other members of a patient care team and provided nursing care according to the clinical pathway. During official office hours, a primary nurse would also serve as a case manager. After official office hours, however, an RN who had been trained with knowledge and skills required for the care of MI patients was assigned as assistant nurse to implement the plan. This RN was overseen by the nurse case manager. Patient care was guided by a multidisciplinary plan until discharge. After discharge, the patient was referred to appropriate agency for continuity of care.

Evaluation Phase

The evaluation phase began with a meeting of the interdisciplinary team to identify criteria to evaluate the outcomes of the patients and the model. Evaluation of the patients was performed on a daily basis and by a patient care team in conjunction with the nurse case manager. If there were variances in the care, actions were taken to manage the variances and adjust the clinical pathway. At discharge, patient satisfaction, LOS and costs were measured. Incidences of readmission were assessed following discharge for twenty eight days in each case. The patient care team coordinated care activities with PCU following discharge to ensure that ongoing care was met.

Changes in the Research Process

In this research study, the model of nursing case management has been developed through a number of action research spirals. The participants assisted in forming the model through many changes, especially the form of service delivery towards a more patient-focused care, collaborative practice between nurses and other health care disciplines, and cost-conscious practice. In addition, as this model focused on nurses as a person that could play a vital role in care coordination and management, with both knowledge and clinical competencies in caring for MI

patients, this session also included changes in roles of nurses toward advanced nursing practice.

Changes toward patient-focused care

Care modalities have considerable effect on the quality of care delivered to the patients. Traditionally, many Thai nurses used combined functional and team nursing to provide nursing and health care for patients. While several hospitals emphasized patient-centered care and holistic care as central to hospital care, in reality task-oriented care was symbolic of the capitalist mode of production whereby tasks were the organizing relationship. In the past, the concrete work that nurses produced through task assignment was valued over the more abstract forms of care which remained invisible in the health care context (Forbes, 1999).

As revealed in this study the model of primary nursing case management affected the changes in how care was planned, delivered, and allocated to each individual patient in specific case type that was patients with MI. Nurses in this study moved the patient from being at a margin of care to its center and shifted the tasks to the former in accordance with the patients' needs. By all means, the nurses needed to look at what outcomes had been expected from patients, what they gained from patient education, what issues emerged during the assessment and interventions, and what kinds of evaluation to conduct with them. The nurses also needed to look at the issues of family care should there be any concerns or requirement involving the family of MI patients.

In relation to other health care professionals also started to move in the same direction so as to improve patient care in the ward setting. There might be a few motivating factors for the changes of multidisciplinary team toward patient-centered care in the study. First, it could be related to problems of quality of patient care as identified in the first cycle of the PAR process. As noted in chapter four, the informants described how each health care discipline had reflected on how they had performed their duties based on task achievement leading to a poor patient-center approach in MI patients.

Second, these health care professionals were now well aware of the consumer's rights, which had been addressed in the Thai legislation since 2000 (Boontong, et al.,1999). Additionally, the health care policy had shifted for patient-center care

policy rather than the specialization and advanced technological care as previously, therefore all health care team needed to abide by laws and this policy so as to improve health care services in the country. Lastly, through the form of clinical pathway development which all health care members caring for MI patients had been involved, this made them focused more on the patient's issues rather than the aspects of treatment only. The use of a tool like this might be one of effective strategies for patient care team to look at how they could work together for the patient's best interest.

Changes toward Collaborative Practice

In reflecting the essence of nursing case management, many authors revealed that it had placed nurses in a position that could be better recognized by patients, other health care members, and society at a larger level. As a nurse case manager could act as a single point of reference for all people, staff or patients, for all care activities in the ward setting, this nurse would gain both recognition and power position in managing and coordinating care for a specific group of patients. Likewise, all health care members were inclined to communicate with the nurse case manager to discuss patients' issues and seek more information about the patients. This was due to the fact that the nurse case manager in this male medical ward had taken the role of a primary nurse who knew the patient right from the beginning of his admission. Any changes that would have occurred in patient's conditions, this nurse would be the best person to contact and gain information. As a result, every member in the health care team would turn to this person so as to discuss all caring issues related to MI patients.

At the same time, the nurse case manager often voiced their concerns and ideas about specific patient and caring issues and appropriate care plan for the next phase of care to these health care members. The pattern of discussions and communication between this nurse and those others reflected a collaborative work among this health care team than previously. As revealed well in the findings, not only medical staff but also the allied health team, including the dietitian and pharmacist, had now started to discuss more of the diet and medication issues with the nurse case manager, rather came to assess patients and left with treatment orders or notes.

In the past, the traditional concept of capitalism in Thai society, especially in the health care context,, those who ruled the health care system were often the medical

staff as they were assumed higher qualifications and hence gain more privilege and social recognition in Thai society. This recognition made medical staff inevitably situated in a superior position to nurses. Coupled with the long standing patriarchal structure of Thai society, medical staff remain a dominant voice in health care organizations. As a consequence, in many caring situations medical staff dominated all other health care members, including nurses and allied health, through the control of the throughput of the hospital process. At the ward level, they also often took control in the decision-making process in patient care matters. On the whole, the power exercise between medicine and nursing was evident in the Thai literature history, although in this study this exercise had been played less due to a collegial agreement at the beginning of the research process.

Changes toward Cost-Conscious Practice

It was interesting in this study to see the shift of care delivery from past to present. In the past, the capitalist mode of production - the profit issue - affected the way nurses delivered nursing care to patients. Specifically in the present Thai health care system, in the DRG era, it was inevitably that the national average length of stay (LOS) for a specific patient type had to be used to determine cost payment for that grouping of patients (Ministry of Public Health, 2001). Many hospitals therefore looked at reducing the LOS and to eventually reduce hospital cost. In this hospital, it was also obvious that the health executives had also been in favor of the cost containment policy and therefore were likely to support the implementation of this present study. As a result, all participants started to look at cost of care simultaneously with the progress in the patients' conditions, so as to manage and control health care expenses used within this specific case type of MI patients.

However, in this study during the initial phase to identify problems in health care services for MI patients, evidence suggested that when cost issues or profits took precedence, quality of care was likely to be compromised. For instance, there were many incidences that when MI patients had been discharged quicker with a shorter length of stay, the readmission rates tended to be high also. Furthermore, these patients often came back with a greater severity of illness and hence increased cost of care in the second episode of their admission. This current nursing case management

model attempted to show that should nursing care be dictated by those who rule the health care systems, such as the health policy makers or hospital administrators, quality and continuity of care for these patients could be threatened and became fragmented.

Thus, while these participants put an emphasis on cost containment as an outcome of this model, they were also seriously conscious about the quality outcomes as expressed by the patients. They wanted to nurses could demonstrate their potentials to act as advocate for patients in balancing the significance of both quality and cost of care. From the findings, it could be argued that in order to maximize the rhetoric policy of 'quality at low cost', as declared by the Ministry of Public Health (2001), it was important that nurses as well as other health care professionals had had responsibilities to monitor and assist in adjusting the equilibrium of these two aspects of the managed care system in the Thai health care services. In short, while the current nursing case management model in this study had made health care professionals raise their consciousness about the cost issue, it was still favorably congruent with the concept of care continuum and patient-centered care, which was well embedded in case management.

Changes in Roles of Nurses toward Advanced Nursing Practice

In recent years, nurses worldwide had developed advanced practice roles to serve the changing world of health care service delivery. Thailand is also another country that has moved gradually to this direction so as to expand nurses' roles to fit well with the changing health care societies, both in the country and at international levels. These changes included the increasing demands of health care consumers, the advancement of health care technology of many other health care members, and the stringent budget allocation for health care services by involving payors (Ozbolt, 2003; Minchin & Wensley, 2003; Keyzer, 2002).

As demonstrated in this study, it was important for Thai nurses to advance their clinical competencies for specific groups of patients that were of high priority within the managed care system. In this particular system, it looked at the improvement of

standard and quality of care for patients with high risk issues and high resource utilization while containing cost of care for them (Powell& Ignatavicius,2001; Blaha,etal,2000; Huggins& Phillips,1998; Cohen& Cesta,2001).With these characteristics of the managed care system, nurses now also needed to have managerial skills in their workplace so as to assist with effective care management in the health care setting.

From the overall findings, the changing roles of nurses toward advanced nursing practice therefore necessitated the new job descriptions within an appropriate line of nursing and health care organization. Fro instance, in this study, the nurse case managers needed to work closely with the head nurse of the medical ward, while assuming both roles of a primary nurse with direct care provision and a care manager coordinating care across different health care disciplines within and outside the ward setting. The nurse case manager was still accountable to the head nurse of the ward, which would help reduce the role conflict between both of them. In this study, the results also indicated that the nurse case manager could work well and collaboratively with the head nurse with no conflict of interest or role presentation.

At the same time, the nurse case manager still needed to interact with other nursing staff who assisted in providing continuing care in other shifts or other period of caring situations for MI patients. These interactions reflected on the importance of clear and effective communication that would minimize the boundary and role conflicts of other ward nurses and this primary nurse case manager. Many studies also revealed that to enhance performance of a nurse case manager while reducing role conflicts and overlapping with other nurses, it was necessary for the health care administrators to consider an establishment of a job description of nurse case managers to clearly delineate their role and responsibilities in the setting. (Bonvissuto,Kastens & Atwell,1997; Finlay,1998; Hocker&Trofino,2003; Scharlach, Giunta, Robinson, & Dal Santo, 2003). The findings associated with roles and responsibilities of a nurse case manager in this study also were consistent with many studies in previous years (Scott,1999; Pual,1999; McCreaddie,2001; Brownie,2003).

From these characteristics of the roles of nurse case manager in this study, it was proposed by the key informants that a nurse case manager of I patients should have the following attributes and qualifications.

- Hold a master degree in nursing or special certificate in advanced nursing care for patients with cardiovascular diseases.
- Be a registered nurse who had been working with MI patients for more than five years (if holding a bachelor degree in nursing).
- Have effective communication skills and able to work collaboratively with other health care disciplines across health care settings
- Have been involved in continuous quality improvement process, and able to assess, plan, implement, and evaluate outcomes of care in MI patients.
- Having current nursing license for practicing nursing care in the country

It was noted that the proposed nursing roles of a nurse case manager in this research study were somewhat similar to other nursing studies (Jones, 2005; Alvarez, 2000; Grunder, 2003; Gibson & Bamford, 2001; Ocker & Plank, 2000; Scott, 1999; Armstrong, Tolson, & West, 2002). In the US hospital settings, for example, the primary nurse case managers were often the registered nurses who had been involved in caring for a specific case type for at least three to five years, with a number of clinical hours practicing with these cases for at least two thousand hours per year (Cohen, 1990; Powell, 1996). In some settings, they require a registered nurse with a certified case management experience, such as those being certified by the specific nursing organizations (Stotts, Rider, & Koster, 1997; Kelly, Simpson, & Brown, 2002). This certification or credentialing system was established in overseas in order to formally educate and train specific groups of nurses to manage care and reinforce positive outcomes of care for special groups of patients.

On the contrary, in Thailand there were no nursing organizations that established a formal and certified nurse case managers in current practice. However, as case management was now being introduced to the Thai health care system, it was likely and high time for Thai nurses to start to develop these roles to promote their advanced nursing practice roles for further application. The roles of nurse case managers in many ways demonstrated that leadership and knowledge power were very important in advanced nursing practice which was expected to enhance both patient and cost effectiveness outcomes in everyday care delivery.

Outcomes of the Model

From the findings, the outcomes identified in this study included those related to patient, health care providers, and institutions. These outcomes overall reflected the objectives of the case management system, however, it was argued in this study that some aspects of these outcomes still required further examination and consideration.

Patient Outcomes

In relation to patient outcomes, there were several aspects and dimensions to measure about MI patients. For instance, many studies reported that patient outcomes in MI patients included their satisfaction, severity of illness, quality of life, and adherence toward appropriate health behaviors and treatment (Noetscher & Morreale, 2001; Cheah, 2000; Kegal, 1996; Hodgen, Ferguson, Davis, & white, 2002; Mecevski, 2002). However, in this research study, the research focused mainly on patient satisfaction as it was most appropriate and accurate within the limited timeframe of this study. Evidence of patient satisfaction toward the use of nursing case management was well revealed in chapter four, and was consistent with the findings in other research studies(Bent & Rutherford, 1999; Barry, David, Meara, & Halvorson, 2002; Cook, 1998).

In analyzing how and why these MI patients had been satisfied with this new model, the researcher considered each transcript of the interviews in these patients. It was not surprising to note that these MI patients had expressed their appreciation of approaches and performance of all informants, especially those primary nurses who acted as the nurse case managers. This was most likely related to a better provider-patient, especially nurse-patient, relationship in a more professional way. These MI patients experienced a change in how health care providers approached them, with more ‘attention’ to details of their health issues and more ‘intention’ to have them involved in their caring decisions. The underlying issue of these changes had already been discussed in the previous session, which was relevant to the patient-centered focus as indicated in the establishment of the nursing case management model.

Moreover, it was apparent from the findings that these MI patients also expressed their confidence in managing care of their own self when discharged from the hospital. This could be related to knowledge power that they had gained from

more active and collaborative health education. When each health care discipline put own effort to transfer appropriate and adequate information about MI and self management techniques for these patients, it was likely that the MI patients would gain their confidence in caring for themselves when they were at home. In addition, the collaborative practice between health care providers at the ward setting and home care providers was also contributed to the confidence and anxiety reduction for MI patients, as well as their families, who might still be unsure of their illness trajectory.

Provider Outcomes

Like patient outcomes, provider outcomes in this study were also measured through their satisfaction. Overall, the level of satisfaction of each health care discipline participating in this study was generally high. As revealed in chapter four, the findings demonstrated that nurses, medical staff, dietitian, and pharmacist were all satisfied with the use of nursing case management model in patients with MI. These findings were similar to the findings of many authors who had developed case management models in their settings (Sharrock & Happell, 2001; Acuna, 2002; Khupimay,2000; Sounchai,2000)

Nursing Staff Outcomes

In relation to nursing staff, there were both ward nurses and a home health care participating in this study. In the past both of them worked in the same hospital, but functioned separately as adhered to the demarcation of own setting. When using this model, they started to work more as a 'team', communicate more with one another, and saw the same patient together more to discuss continuing care issues. They were now more satisfied with communication and interaction that had been changed through new coordination strategies. Many studies also supported that when the gap between ward and home care setting had been reduced, the outcomes would be greater with both providers and patients (Powell & Ignatavicius, 2001; Cohen & Cesta, 2001; Newell,1996).

Notably, in an initial phase of the study, there was a resistance among ward nurses who were general participants as they perceived that this change of care delivery model might create more of the workload for them. Until they were clearly

explained and started to understand the nature of the study, they then became more receptive to the change. On reflection, this was seen as a normal incidence as often people tended to resist toward changes that occur in their routinization. They considered it as a 'threat' to them but, as time went by, these people were often inclined to accept the changes and interact better in the organizational environment (Seymour et al, 2002). Once they started to understand the underlying issues of changes, they became cooperative with others well.

Medical Staff Outcomes

In terms of medical staff, although there was also a slight resistance of some doctors who were general participants at the start of the research study, it became evident that they were in support of this model at a later time. Early, they were hesitant with the use of clinical pathway and the competencies required for the doctor in-charge of the pathway. Arguably, there were a few research studies reporting that some physicians were not in favor of the use of pathway. Some physicians perceived pathways to be cookbook medicine and hence were reluctant to participate in their development. As a result, there was unnecessarily but inevitably a drawback of the physicians' participation in this kind of model development

However, in this study, when the cardiologist, who was also the key informant in this research study, intentionally described how each doctor in this medical ward would function, and made decisions together, within this model, these doctors began to learn and adapt to the change. In addition, as indicated by this cardiologist, this new model created a care plan that was very instructive to new medical as well as other staff, saved a significant amount of time in the process of care, and in most cases improved care and shorten length of stay for the population on the pathway. When all health care members were familiar with this pathway, they started to accept, compromise, and utilize it more willingly. Most interestingly, many medical staff in other wards began to look up at this model and consider whether its use should be extended to other wards or applied to other groups of patients in this hospital.

Other Allied Health Outcomes

In caring for patients with MI, there were a number of health care disciplines involved. These included nurses, doctors, pharmacist, dietitian, physiotherapist, and perhaps social workers and others. In this research study, only pharmacist and dietitian were selected for the reasons of their availability and willingness. When analyzing their satisfaction toward the use of this nursing case management, the results came out positive. The results in this study also were consistent with those of many studies in recent years (Powell,2000; Newell,1996; Yaksic,Dewoody& Cambell,1996; Bristow& Herrick,2002). Many allied health professionals tended to be in a great favor of this model utilization, as they could perform and interact more with patients and other staff in the ward scenes. On the same token, the patients could also appreciate more of the professional assistance and advice from them. As evident in this study, the pharmacist and dietitian had a greater input in patient care plan and decisions, and became more actively involved with appropriate health education related to medication and diet for this group of patients. They were more satisfied with their professional recognition by patients, and also with a closer professional relationship with other health care members in the ward setting.

Institutional Outcomes

As described in the earlier chapters, the nursing case management model had been developed in several health care settings so as to meet with expected outcomes of patients. However, in these circumstances, patient outcomes might occur interchangeably with the institutional outcomes, especially in relation to health care expenditures. In this research study, the findings indicated that when MI patients had well been cared for their length of stay (LOS) and readmission rates were reduced in comparison with other MI patients in recent years. From these data, the cost of care for these patients was also decreased due to the use of less bed days and unnecessary re-hospitalization. In addition, when compared the actual cost of care with that of the DRG payment, evidence showed that on average the money was spent on these MI patients less than the budget that the hospital had received from the government for monetary management with MI patients. The results in this present study were similar

to the outcomes demonstrated in other settings (Cook,1998; Powell,2000 Wanda,1999;Khupimay,2000). When the use of health care resources was less, it was logically predictable that there would be fewer health care expenses as well.

However, in some cases when cost of care had been reduced with a shorter LOS, then patient outcomes might not always be good. Most recently, many studies especially in the US demonstrated that when health care institutions had been controlled by some payors, such as private health insurance companies or specific schemes, that were stringent on cost issues, the cost of care often went up as a result of poor patient outcomes such as complication or exacerbations of their illness. By and large, evidence in other settings indicated that institutional outcomes should not outweigh patient outcomes at any time and in any caring circumstances .

Issues Related to the Development of Nursing Case Management Model

In this research setting, there were both positive and negative issues related to the development of nursing case management model. This session provided issues in relation to strategies and barriers that were obvious in this study.

Strategies

During the development of this model, there were many aspects of the research process that had contributed to the accomplishment of this study. These aspects were seen as strategies of the success of the model, which included the use of participatory action research to reinforce participation of all care providers involved. The cyclical process of the PAR also helped the participants to move along with the continuous quality improvement (CQI) concepts, which was augmented in the health care practices in this setting. As a result, all health care providers were more likely to accommodate with the PAR process and hence enhanced the potential for sustainability of the model in the setting. This was well proved by the fact that when the researcher left the fieldwork, the patient care team had remained in the PAR process and determined to have an ongoing work with the further development of this model. In other PAR studies, it was often revealed that if the research team was well established, it was more likely that the research work would continue regardless of

further involvement of the researcher (McNiff & Whitehead, 2002; Morton-Cooper, 2000).

Also, other strategies noted in this study included the support of health care authorities, especially those medical officers who worked at the administrative levels. The policy of quality improvement reinforced by the hospital accreditation system happened to be an effective catalyst for the health care team to focus more on quality issues for patients. Commitment of all participants at an operational level also influenced both speeding and achievement of the model development. At a patient level, an open opportunity for patients to have more active involvement with patient care decisions even created a patient-centered care practice, which made this model meet the targets well. By and large, these results were consistent with other studies which revealed that participation of all stakeholders in the health care settings would increase the best outcomes of this model for patients.

Barriers

In this research study, there were also some barriers toward the accomplishment of this model development. A lack of knowledge and understanding of the changing model of practice was seen as most influential to the cooperation of participants in the first phase of the research process. After the participants were informed and educated about the case management concepts and models, they were better open to the change and got more involved.

In addition, some participants were resistant to the changing practice toward collaborative care plan for MI patients. Some of the physicians perceived pathways to be cookbook recipe for patient care and were initially reluctant to participate in their development. After they were explained and understood that their autonomy in making clinical judgement as appropriate for each patient was at all time maintained, their level of acceptance then became increased. This example of staff resistance during the model development was similar to the findings of many previous studies (Atharos, 2003) which reflected that successful collaborative work of patient care team would also depend on how a nurse case manager could gain consensus from various disciplines on the expected plan of care. It would also depend on how well the nurse case manager could manage and manipulate with extraneous factors that

affected the outcomes of the care model as demonstrated with an epidemic occurring in this research setting.

Reflection

Overall, the development of a nursing case management model in this study was in many ways similar to those models in many countries. As revealed in the present model which was illustrated in the previous chapter, the focus of this particular nursing case management model was placed on patient as a center of all care management. With this clear focus, it used collaborative practice of relevant health care providers to drive continuity of care through effective communication and coordination of a nurse case manager. This model also placed health care payers as a stakeholder that played an important role in the present Thai health care system. Notably, the payor in this study was largely a public sector (Ministry of Public Health, 2001) as this study was conducted in a public hospital, where most patients with MI were on a 30-baht scheme of the health care payment system. The cost of care for MI patients within this costing system pushed the nurse case managers to work more closely with other health care providers to meet expected outcomes of patients within a timeframe of DRG guidelines. This also pushed the case managers to have to enhance their effective communication skills to minimize all negative issues that might have impacted on the achievement of this model.

On the whole, this nursing case management model attempted to balance both quality of patient care (through collaborative and patient-focused care) and cost effectiveness (through managed care of the health policy maker). Evidently, nurses were seen as being in a major role of managing and coordinating care for patients with other health care providers to meet with positive outcomes of patients in each specific case type. Meanwhile, other health care disciplines need to be pro-active in collaborative care and continuous quality improvement so as to contribute to the accomplishment of the objectives and goals of this new nursing case management model.

Limitation

A model developed in this study might not generally be utilized in other health care settings, but might be utilized in the settings that share similar characteristics with the setting where this study took place.



CHAPTER VI

CONCLUSION

In this chapter, the researcher summarized and concluded the findings so as to provide the overall picture of the study. The implications for nursing practices were described along with strategies to improve nursing case management. In addition, the recommendations for nursing research were also presented in order to guide others to further investigate issues surrounding this topic or expand knowledge related to the development of nursing case management model in the future.

Summary and Conclusion of the Study

This research study aimed to develop a nursing case management model in patients with myocardial infarction (MI) at Sawanpracharak Hospital, Nakhonsawan Province. The study used a method of participatory action research (PAR) in order to develop such model. It also aimed to examine the process if the model development, factors affecting the development and utilization of the model, as well as the outcomes of this model development.

This participatory action research (PAR) study consisted of nine key informants, including a medical staff who had been an expert in cardiovascular diseases, a head nurse, a clinical nurse instructor, a registered nurse with specialization in cardiovascular diseases, one general registered nurses, a technical nurse, a home health care nurse, a pharmacist, and a dietitian participating in the study. The majority of the key informants had been working with patients with MI for more than five years, while different levels and qualifications of nurses participating in this research study. The study was conducted at a medical unit of Sawanpracharak Hospital, where the nursing case management model was developed and implemented with fifteen patients with MI. These patients had some similarities in their demographic characteristics, especially in their health care reimbursement. The data collection process was performed simultaneously with data analysis during the PAR process. The data were analyzed both in quantitative and quantitative ways, so as to

gain a better picture of understanding of how the model was developed and the factors affecting this development.

Nursing Case Management Model

From the findings, the nursing case management model emerged from this development was characterized by a patient-centered approach, governed by several stakeholders including a nurse case manager, other health care providers, and payors. These people all interacted to one another for the purposes of cost containment and quality of services. Multidisciplinary care plan or the so-called clinical pathway was seen as a tool of effective communication and collaboration, while the nurse case manager was the person acting as a coordinator of care management for all stakeholders including patients and families. The model was similar to the characteristics of primary nurse case management in the western context, where a nurse case manager worked as a primary nurse for patients with MI. In addition to provide some direct care for these patients, the nurse case manager had to manage care of this specific group of patients from admission till discharge to ensure that the patients had quality services and also effective discharge planning. This model thus put a great emphasis on continuity of care and also collaboration among multidisciplinary team.

However, as each country had specific health care context of its own, the nursing case management model in this study revealed some differences in the details of some aspects. These aspects included the credentials of the nurse case manager and the payors or budget providers in the Thai health care system. In the first aspect, it was noted that the nurse who acted as a nurse case manager in this study was a general registered nurse but not a certified case manager. As Thailand has now been moving to support the necessity of advanced practice nurses, it was possible that the credentialing system for case manager would emerge. This could be one way to improve the advanced practice roles of nurses in Thailand, and to formalize the system that supported these nursing positions, along with their roles and responsibilities in the future.

With respect to health care payment scheme, it was noted that the system of payors in Thailand had now been in a transitional process. Unlike the United States,

where people were generally under a private health insurance, Thailand had used a dual payment system which was still on a trial period. As case management was always related to health care monies allocated for each group of patients, the influence of payors towards patients and health care providers, including the nurse case manager, in this study therefore still was under a scrutiny. Nevertheless, the nurses as well as health care members in this study had clearly demonstrated despite the cost constraints in the present health care era they would continue to improve their work in order to provide good care for patients and balance the health care costs so far as practicable. This model thus required further development in order to make it congruent with the continuing changes in the country.

In short, under the present health care system in Thailand, where health care reforms had continued to shape the way health care professionals provided health services, it was important for nurses and other health care members to perform their best to assist patients and their families to get through health problems and resume their usual lives so far as practicable. Patients needed to be a center of all service deliveries, in spite of stringent health budget by 'payors' and other changes. Nurses could play an important role to assist the patients and collaborated with other health care team and patients to ensure that all appropriate care had been given for patients. Timeframe would be a strategy for cost containment, but as many nurses in this study demonstrated it should not override the objectives of all health care team to serve the needs and help with problems of patients. Using effective communication, both verbal and non-verbal ways, nurses could enhance continuity of patient care. At the same time, a professional colleagueship with other health care members could also take place especially through a means of collaborative practice, such as a clinical pathway. In addition, collaboration both within and outside the setting would also reduced fragmentation of care across the boundaries. As revealed in this study, this model attempted to close the previous gaps that existed in the service delivery and would require a commitment of all parties involved.

Within this nursing case management model, it was foreseeable that nurses could demonstrate their clinical competencies, such as specific care for patients with MI in this case, and be an advocate of patients in caring situations. It was also likely that nurses would be a key person that could contribute a great deal to cost

containment, when some typical variances were monitored and effectively managed through the use of this model. Also through active and advanced practice roles of a nurse case manager, it was envisaged that there be improvement in nursing status in Thai society along with better quality health services in the future.

Process of the Nursing Case Management Model Development

There were three phases in the process of nursing case management development. These were: in preparation phase, action phase, and evaluation phase. In each phase, the researcher used PAR processes including planning, implementing, reflecting, and re-planning(Re-plan) continually on its spiral characteristics until the model was developed, implemented, and evaluated.

Preparation Phase

In the preparation phase, the key informants joined together as a patient care team to examine existing problems or a gap in the previous service delivery for patients with MI. Such problems included fragmentation of care between health care providers, a lack of patient-centered approach especially their involvement in the care plan development, a limitation of appropriate health care resources to provide effective transitional care for MI patients such as CCU or home care services. There was also a gap in staff's knowledge and competencies about best practice in managing care for patients with MI, especially among paramedical team. As a result, the informants agreed to work together to create changes in the service delivery for this group of patients. The initial work also included a set up of the patient care team or in this study the 'PAR team' for MI patients, a provision of staff's knowledge and understanding of MI patients, and finally a provision of knowledge of the concepts of PAR and nursing case management.

During this preparation phase, the research interacted in the PAR process as a catalyst of the patient care team by reflecting import questions and issues surrounding the development of nursing case management that fitted well with the structure and gaps being identified at Sawanpracharak Hospital. The team was unsure of how to start with it initially, however with a group process and discussion they all agreed to set up the objectives and action plan for this development.

Planning and Implementation Phase

During the planning and implementation phase, the researcher began to interact further with the PAR team by facilitating the process of plan development and creation of the model. The team set up objectives of this development to be clear that the nursing case management model would be developed in response to the gaps found in the previous findings. The collaborative care plan called clinical pathway was then created, shaped, and re-shaped by the PAR team until it was satisfied with the team. This was the first initiative for multidisciplinary team in this hospital to find a strategy to overcome the fragmentation of care among different disciplines.

In creating the clinical pathway, all the team were responsible in finding best practice from literature in their own disciplines with regard to caring for patients with MI, and brought it together to discuss and shape. Other activities in this phase included a change in some structural and outcome issues. For examples, the preparation of ward space and appropriate equipment, identification of clear roles of each discipline in use of clinical pathway, establishment of a nurse case manager's role, and selection of nurses to act as a case manager. It was agreed that the model used would be based on primary nurse case management pattern, with the allocation of specific nurses that had experiences with caring for MI patients working as a primary nurse case manager. The PAR team also established the outcome measurement guideline for the model, such as a variance record, an interview guide for patient and staff satisfaction, and a questionnaire for collecting data related to lengths of stay, readmission, and cost of care for MI patients. This was a change of practice as opposed to the traditional way where the change often came from top down rather than a decision making process as occurred in this study.

Also in the planning and implementation phase, the PAR team developed a tentative model of nursing case management, and piloted in five MI patients. Following this, there were changes in some aspects of the clinical pathways and the strategies to increase continuity of care for patients. When all changes were completed, the model was used with fifteen patients with MI, and all outcomes were recorded and monitored. While the clinical pathways was used by multidisciplinary care team, the nurse case manager would follow the continuity of care and interacted closely between the patients and the health care team. This phase was conducted

continually, with an attempt of the PAR team to extend their model to connect with other settings such as emergency room. Although, this extension was beyond the scope of this research study, it reflected the ongoing progress of the study and the commitment of the team to run this model to the best capacity. The researcher kept notes during this process in the diary so as to collect detailed information about these changes during this research process.

Evaluation Phase

In the evaluation phase of this research study, the researcher interacted with the PAR team as a viewer to see what had come out of this model development as well as the model. The PAR team collected all the variances and issues surrounding this collaborative practice in order to evaluate the outcomes of this change. In this process, the team also used a peer review technique by having other health care members in addition to the PAR team to reflect on the outcome identified and sought suggestions and comments. There were positive outcomes emerging as evidence revealed both with the reduced readmission rate and length of stay for patients. Cost of care was also contained in comparison between actual fees and the DRGs reimbursement.

Finally, in the evaluation phase there were a number of changes occurring in the research setting, especially in relation to how health care disciplines worked together during and after the development of the model. For instance, each health care discipline happened to work more in a horizontal line of communication through a mediator or coordinator, that was a nurse case manager, and thus created more effective communication and cooperation. Other changes included the work pattern which happened more in a bottom-up management, along with a support of top-down management. This made staff more satisfied with their work, and hence enhance their performance and decision making processes. Another important change was an increase in patient satisfaction for the care received as they got involved more and could be better informed of their care plan and discharge dates. In terms of payors, either patients themselves or the government in many cases, the outcomes in this study revealed that health care expenditures that were used in this group of patients with MI under the study were under the cost weighed by the DRG system. In this

situation, the patients themselves could pay on average of the cost of care for MI patients, and at a small scale the hospital could gain a benefit of cost saving in these patients. At a larger scale, the Thai government could also gain the benefit of effective cost management of health care budget, which was congruent with the current health care management and cost containment strategy in the country.

Factors Affecting the Model Development

In relation to factors that affected the development of nursing case management model, the findings revealed that there had been both positive and negative ones. The positive factors included a supporting policy of the government towards improvement of quality of health care delivery services, such as a hospital accreditation system, support of the hospital management team for changes towards quality and cost issues, and most importantly, the commitment of the health care members to create changes for better services for patients.

Nevertheless, there were negative factors that affected the development of this model especially during the first phase of this study. These included resistance of some staff for changes, the workload and turnover of staff in hospitals, and also an issue of some external environment, such as an epidemic of particular illness that could affect the progress of the development. These negative factors or issues could be overcome by good communication and management of all stakeholders, especially by strengthening the philosophy of the hospital to provide a good service for patients. Involvement of all parties or stakeholders involved was also seen as an appropriate strategy to help overcome the resistance and other barriers that appeared in this study.

Implications for Nursing Practice

1. Application in Hospital Settings.

Although this research study had some limitations in its generalizability, there were some critical strategies being used in this study that might be beneficial for the development of nursing case management in other settings. Strategies such as strengthening of multidisciplinary teamwork, by means of a policy support or a top-

down decision and cooperation, would be useful for a starting point in any other settings to gain collaborative practice and cooperation from them.

2. Development of Nurses' Roles

Nurses had important roles in providing quality of care for patients from past to present. However, to provide best care it is not only nurses, but also other health care members's contribution. As a result, the role of a nurse case manager in coordinating care for patients would assist in enhancing good services through best practice and effective teamwork among the health care team. This was well in support of a requirement of advance nursing practice's roles of nurses in the present Thai health care system that requires efficient and advanced care management for patients. This efficiency and advancement reflected a need for both clinical nurses' competencies in caring for specific groups of patients as well as management competencies to make nurses become an effective change agent in health care services.

3. Continuous Quality Improvement

In this study, the research design was a participatory action research. The spiral processes of this research method contributed largely to the continuous quality improvement in nursing practice. Although the research study was completed, the development of nursing case management still continued. Sustainability and continuity of the improvement of patient care delivery were contributed by the nature of this kind of research which was congruent with the nursing process in every day practice of nurses.

Suggestions for Further Research Studies

1. This nursing case management model in patients with MI could be used as an initiative for further PAR research in developing a nursing case management model in other groups of patients, such as diabetes mellitus or those that require effective care management.

2. As this study focused only on male patients, future research might include female patients so as to compare the similarities and differences of the outcomes of this kind of model.

3. Further research could be extended to other research methods, such as a quasi-experimental study to compare the effectiveness of the nursing case management model and other care delivery models in patients with MI in the future.



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APPENDIX A

Patient Interview Guideline

1. What do you think about care delivery services in present time?
2. What and by whom are the care delivery services that you have got since you came into the hospital?
3. How do you feel about care delivery services you get?
4. How do you expect for the quality of care delivery services?
5. What are types of care delivery services that you satisfy or do not satisfy when you come for treatment at the hospital?
6. What are obstacles you encounter when you take treatment at the hospital?
7. What are your suggestions for improving care delivery services in the hospital?
8. How much do you participate in care planning for yourself?

แนวคำถามสำหรับผู้ป่วยกลืนเนื้อหัวใจตาย

1. ท่านมีความคิดเห็นอย่างไรต่อการให้บริการท่านในปัจจุบัน
2. ท่านได้รับบริการอะไรบ้าง จากใครบ้าง ลักษณะบริการที่ให้อย่างไร (ตั้งแต่เข้าโรงพยาบาล กระทั่งจำหน่าย)
3. ท่านรู้สึกอย่างไรกับบริการที่ท่านได้รับ
4. ท่านมีความคาดหวังต่อการให้บริการอย่างไร
5. เมื่อเข้ารับการรักษาในโรงพยาบาลมีสิ่งใดที่ท่านรู้สึกพึงพอใจ / ไม่พึงพอใจ
6. ท่านคิดว่าการมารับบริการในโรงพยาบาลท่านมีปัญหาและอุปสรรคอะไรบ้าง
7. ท่านมีข้อเสนอแนะต่อการให้บริการอย่างไรบ้าง
8. ท่านมีส่วนร่วมในการวางแผนการดูแลท่านมากน้อยเพียงใด

APPENDIX B

Provider Interview Guideline

1. What do you think about the care delivery services for myocardial Infarction patient in present?
2. What are weak and strong points of the care delivery services for myocardial infarction patients in your point of view?
3. How could health care staff improve the quality of care delivery for myocardial infarction patients in your point of view?
4. What are problems and obstacles you encounter when taking care of the patients?
5. Do you think that the current care delivery services for myocardial infarction patients are able to respond sufficiently to the patient's need?
6. What are your opinions on quality of care delivered by multidisciplinary team?
7. How can patients and health care team work together for achieving the efficiency of care delivery in your point of view?
8. Do you think that patients should join in caring process when they stay in hospital? Why do you think like that?
9. Do you satisfy or not satisfy with the current care delivery system? How do you feel? Why do you feel like that?

แนวคำถามสำหรับทีมสุขภาพ

1. ท่านมีความคิดเห็นอย่างไรในการจัดระบบบริการผู้ป่วยโรคกล้ามเนื้อหัวใจตายในปัจจุบัน
2. ท่านคิดว่าจุดแข็ง / จุดอ่อนของการจัดระบบบริการผู้ป่วยกล้ามเนื้อหัวใจตายคืออะไร
3. ท่านคิดว่าถ้าจะจัดระบบบริการผู้ป่วยกล้ามเนื้อหัวใจตายให้มีคุณภาพควรจะดำเนินการอย่างไร
4. มีปัญหาและอุปสรรคอะไรบ้างที่เกิดขึ้นกับท่านในขณะที่ให้การดูแลผู้ป่วย
5. ท่านคิดว่าระบบบริการปัจจุบันตอบสนองความต้องการผู้ป่วยเพียงพอหรือไม่
6. ท่านมีความคิดเห็นอย่างไร ต่อการทำงานร่วมกันระหว่างสหสาขาวิชาชีพ
7. ท่านคิดว่าผู้ป่วยและทีมสุขภาพควรร่วมมือกันอย่างไร เพื่อให้การดูแลมีประสิทธิภาพ
8. ท่านคิดว่าผู้ป่วยควรมีส่วนร่วมในการดูแล ขณะอยู่ในโรงพยาบาลหรือไม่ เพราะอะไร ท่านจึงคิดอย่างนั้น
9. ท่านรู้สึกพึงพอใจ / ไม่พึงพอใจ ในระบบการดูแลผู้ป่วยหรือไม่อย่างไร

APPENDIX C

Participant Information Sheet (Patient)

คำชี้แจงข้อมูลในการเข้าร่วมโครงการวิจัยสำหรับผู้ป่วยโรคกล้ามเนื้อหัวใจตาย

ดิฉัน ชื่อ นางสาวราศรี ลีนะกุล นักศึกษาปริญญาเอกทางการแพทย์ของ คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล ขณะนี้กำลังทำวิจัยเรื่อง “การพัฒนารูปแบบการจัดการรายกรณีทางการแพทย์ของผู้ป่วยโรคกล้ามเนื้อหัวใจตาย ในโรงพยาบาลสวรรค์ประชารักษ์ ” ซึ่งเป็นการศึกษาเพื่อพัฒนาระบบการดูแลผู้ป่วยโรคกล้ามเนื้อหัวใจตาย ในโรงพยาบาลสวรรค์ประชารักษ์ โดยการมีส่วนร่วมของสหสาขาวิชาชีพและมีพยาบาลวิชาชีพทำหน้าที่เป็นผู้จัดการดูแล เพื่อให้ได้รูปแบบที่จะนำไปสู่คุณภาพการดูแลที่ดี

ท่านเป็นผู้หนึ่งที่อยู่ในข่ายและเหมาะสม ที่จะเข้าร่วมโครงการวิจัยการพัฒนารูปแบบการจัดการรายกรณีทางการแพทย์ของผู้ป่วยโรคกล้ามเนื้อหัวใจตายได้ และถ้าท่านยินดีที่จะเข้าร่วมการวิจัย ดิฉันขอความร่วมมือโดยร่วมวางแผนงาน การตอบแบบสัมภาษณ์ ร่วมให้ข้อคิดเห็นเสนอแนะ ในขณะที่ท่านพักรักษาตัวอยู่ที่หอผู้ป่วยอายุรกรรมชาย 1 ทั้งนี้ดิฉันขอรับรองว่าจะเก็บข้อมูลดังกล่าวเป็นความลับ และจะเปิดเผยในรูปผลสรุปงานวิจัยเป็นภาพรวม ในกรณีที่ต้องมีการเปิดเผยข้อมูลเหล่านี้ต่อหน่วยงานต่างๆที่เกี่ยวข้อง ดิฉันจะกระทำในกรณีที่จำเป็นด้วยเหตุผลทางวิชาการเท่านั้น

ดิฉันคาดว่า ผลการวิจัยนี้จะเป็นประโยชน์โดยตรงต่อตัวท่าน ผู้ป่วยโรคกล้ามเนื้อหัวใจตาย และทีมสุขภาพ และสามารถนำไปเป็นวิธีการจัดระบบให้การดูแลผู้ป่วยโรคกล้ามเนื้อหัวใจตายได้

ท่านมีสิทธิ์ที่จะสมัครเข้าร่วมโครงการหรือไม่เข้าร่วมโครงการนี้ได้ตามความสมัครใจของท่าน แม้ว่าท่านสมัครเข้าร่วมโครงการแล้ว ท่านมีสิทธิ์ที่จะยุติการเข้าร่วมโครงการได้ตลอดเวลาตามที่ท่านต้องการ โดยไม่มีผลกระทบใดๆต่อการรักษาพยาบาลที่ท่านจะได้รับ

หากท่านมีข้อสงสัยใดๆ ที่เกี่ยวข้องกับโครงการนี้ ดิฉันยินดีที่จะตอบให้เข้าใจและยินดีตอบข้อสงสัยของท่านตลอดเวลา โดยติดต่อมายังหมายเลขโทรศัพท์ 02-4271043 หรือ 01-9534701

ขอขอบคุณในความร่วมมือ

(นางสาวราศรี ลีนะกุล)

นักศึกษาระดับปริญญาเอกทางการแพทย์
คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล

APPENDIX D

Consent Form(Patient)

แบบฟอร์มแสดงเจตนายินยอมเข้าร่วมโครงการวิจัย

สำหรับผู้ป่วยโรคกล้ามเนื้อหัวใจตาย

วันที่..... เดือน..... พ.ศ.....

ข้าพเจ้า.....อายุ.....อยู่บ้านเลขที่.....

ถนน.....หมู่ที่.....แขวง/ตำบล.....อำเภอ.....

จังหวัด.....โทรศัพท์.....ขอแสดงเจตนายินยอม

เข้าร่วมโครงการวิจัยเรื่องการพัฒนารูปแบบการจัดการรายกรณีทางการแพทย์ของผู้ป่วยโรคกล้ามเนื้อหัวใจตาย ในโรงพยาบาลสวรรค์ประชารักษ์โดย นางสาวราศรี ถิ่นะกุล

ก่อนที่จะลงนามในใบยินยอมให้ทำการวิจัยนี้ข้าพเจ้าได้รับคำอธิบายจากผู้วิจัยถึงวัตถุประสงค์ ของการวิจัย รวมทั้งประโยชน์ที่จะเกิดขึ้นจากการวิจัยอย่างละเอียด และมีความเข้าใจดีแล้ว

ผู้วิจัยรับรองว่าจะตอบคำถามต่างๆที่ข้าพเจ้าสงสัยด้วยความเต็มใจ ไม่ปิดบัง ซ่อนเร้นจนข้าพเจ้าพอใจ

ข้าพเจ้ามีสิทธิที่จะบอกเลิกการเข้าร่วมในโครงการนี้ เมื่อใดก็ได้และเข้าร่วมการวิจัยนี้ด้วยความสมัครใจ และการบอกเลิกการเข้าร่วมโครงการนี้จะไม่มีผลต่อการรักษาพยาบาลของข้าพเจ้า

ผู้วิจัยรับรองว่าจะเก็บข้อมูลเฉพาะเกี่ยวกับตัวข้าพเจ้าเป็นความลับ และจะเปิดเผยได้ ในรูปที่เป็นผลสรุปการวิจัย การเปิดเผยข้อมูลของข้าพเจ้าต่อหน่วยงานต่างๆที่เกี่ยวข้องจะกระทำได้เฉพาะกรณีที่เป็นด้วยเหตุผลทางวิชาการเท่านั้น

ผู้วิจัยรับรองว่าหากมีข้อมูลเพิ่มเติมที่ส่งผลต่อการวิจัย ข้าพเจ้าจะได้รับการแจ้งให้ทราบโดยไม่ปิดบัง ซ่อนเร้น

ข้าพเจ้าได้อ่านข้อความข้างต้นแล้วและมีความเข้าใจดีทุกประการ และได้ลงนามในใบยินยอมนี้ด้วยความเต็มใจ

วันให้คำยินยอม วันที่..... เดือน..... พ.ศ.

ลงนาม ผู้ยินยอม

ลงนาม พยาน

ลงนาม พยาน

APPENDIX E

Participant Information Sheet

คำชี้แจงข้อมูลในการเข้าร่วมโครงการวิจัยสำหรับทีมสุขภาพ

ดิฉันชื่อ นางสาวราศรี ลีนะกุล นักศึกษาปริญญาเอกทางการพยาบาลของ คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล ขณะนี้กำลังทำวิจัยเรื่อง “การพัฒนารูปแบบการจัดการรายกรณีทางการพยาบาลของผู้ป่วยโรคกล้ามเนื้อหัวใจตาย ในโรงพยาบาลสวรรค์ประชารักษ์” ซึ่งเป็นการศึกษาเพื่อพัฒนาระบบการดูแลผู้ป่วยโรคกล้ามเนื้อหัวใจตาย ในโรงพยาบาลสวรรค์ประชารักษ์ โดยการมีส่วนร่วมของสหสาขาวิชาชีพและมีพยาบาลวิชาชีพทำหน้าที่เป็น Case Manager เพื่อให้ได้รูปแบบที่จะนำไปสู่คุณภาพการดูแลที่ดี

ท่านเป็นผู้หนึ่งที่มีความสามารถและเหมาะสม ที่จะเข้าร่วมโครงการวิจัยการพัฒนา รูปแบบการจัดการรายกรณีทางการพยาบาล (nursing case management) ของผู้ป่วยโรคกล้ามเนื้อหัวใจตายได้ และถ้าท่านยินดีที่จะเข้าร่วมการวิจัย ดิฉันขอความร่วมมือโดยร่วมวางแผนงาน ร่วมประชุม ร่วมเข้าอบรม ร่วมให้ข้อคิดเห็น เสนอแนะ แลกเปลี่ยนความคิดเห็น และการปฏิบัติการดูแลผู้ป่วยโรคกล้ามเนื้อหัวใจตายที่หอผู้ป่วยอายุรกรรมชาย 1 เป็นเวลาประมาณ 1 ปี ทั้งนี้ดิฉันขอรับรองว่าจะเก็บข้อมูลดังกล่าวเป็นความลับ และจะเปิดเผยในรูปผลสรุปงานวิจัยเป็นภาพรวม ในกรณีที่ต้องมีการเปิดเผยข้อมูลเหล่านี้ต่อหน่วยงานต่างๆที่เกี่ยวข้อง ดิฉันจะกระทำในกรณีที่จำเป็นด้วยเหตุผลทางวิชาการเท่านั้น

ดิฉันคาดว่า ผลการวิจัยนี้จะเป็นประโยชน์โดยตรงต่อผู้ป่วยโรคกล้ามเนื้อหัวใจตายและทีมสุขภาพและตัวท่านและสามารถนำไปเป็นวิธีการจัดระบบให้การดูแลผู้ป่วยโรคกล้ามเนื้อหัวใจตายได้

ท่านมีสิทธิ์ที่จะสมัครเข้าร่วมโครงการหรือไม่เข้าร่วมโครงการนี้ได้ตามความสมัครใจของท่าน แม้ว่าท่านสมัครเข้าร่วมโครงการแล้ว ท่านมีสิทธิ์ที่จะยุติการเข้าร่วมโครงการได้ตลอดเวลาตามที่ท่านต้องการโดยไม่มีผลกระทบใดๆต่อตัวท่าน

หากท่านมีข้อสงสัยใดๆ ที่เกี่ยวข้องกับโครงการนี้ ดิฉันยินดีที่จะตอบให้เข้าใจและยินดีตอบข้อสงสัยของท่านตลอดเวลา โดยติดต่อมายังหมายเลขโทรศัพท์ 02-4271043 หรือ 01-9534701

ขอขอบคุณในความร่วมมือ

(นางสาวราศรี ลีนะกุล)

นักศึกษานิพนธ์เอกทางการพยาบาล

คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล

APPENDIX F

Consent Form

แบบฟอร์มแสดงเจตนายินยอมเข้าร่วมโครงการวิจัย

สำหรับทีมสุขภาพ

วันที่..... เดือน..... พ.ศ.....

ข้าพเจ้า..... อายุ..... อยู่บ้านเลขที่.....

ถนน..... หมู่ที่..... แขวง/ตำบล..... อำเภอ.....

จังหวัด..... โทรศัพท์..... ขอแสดงเจตนายินยอม

เข้าร่วมโครงการวิจัยเรื่องการพัฒนารูปแบบการจัดการรายกรณีทางการพยาบาล ของผู้ป่วยโรค

กล้ามเนื้อหัวใจตาย ในโรงพยาบาลสวรรค์ประชารักษ์โดย นางสาวราศรี ลินะกุล

ก่อนที่จะลงนามในใบยินยอมให้ทำการวิจัยนี้ ข้าพเจ้าได้รับคำอธิบายจากผู้วิจัยถึง
วัตถุประสงค์ ของการวิจัย รวมทั้งประโยชน์ที่จะเกิดขึ้นจากการวิจัยอย่างละเอียด และมีความเข้าใจดี
แล้ว

ผู้วิจัยรับรองว่าจะตอบคำถามต่างๆที่ข้าพเจ้าสงสัยด้วยความเต็มใจ ไม่ปิดบัง ซ่อนเร้น
จนข้าพเจ้าพอใจ

ข้าพเจ้ามีสิทธิที่จะบอกเลิกการเข้าร่วมในโครงการนี้ เมื่อใดก็ได้ และเข้าร่วมการวิจัย
นี้ด้วยความสมัครใจ และการบอกเลิกการเข้าร่วมโครงการนี้จะไม่มีผลต่อการปฏิบัติงานของข้าพเจ้า

ผู้วิจัยรับรองว่าจะเก็บข้อมูลเฉพาะเกี่ยวกับตัวข้าพเจ้าเป็นความลับ และจะเปิดเผยได้
ในรูปที่เป็นผลสรุปการวิจัย การเปิดเผยข้อมูลของข้าพเจ้าต่อหน่วยงานต่างๆที่เกี่ยวข้องจะกระทำได้
เฉพาะ กรณีที่จำเป็นด้วยเหตุผลทางวิชาการเท่านั้น

ผู้วิจัยรับรองว่าหากมีข้อมูลเพิ่มเติมที่ส่งผลต่อการวิจัย ข้าพเจ้าจะได้รับการแจ้งให้
ทราบโดยไม่ปิดบัง ซ่อนเร้น

ข้าพเจ้าได้อ่านข้อความข้างต้นแล้วและมีความเข้าใจทุกประการ และได้ลงนามในใบ
ยินยอมนี้ด้วยความเต็มใจ

วันให้คำยินยอม วันที่..... เดือน..... พ.ศ.

ลงนาม ผู้ยินยอม

ลงนาม พยาน

ลงนาม พยาน

APPENDIX G

A Manual of Nursing Care Plan in Patients with Myocardial Infarction



**Male Medical Ward
SAWANPRACHARAK HOSPITAL
BY
Nursing Care Team**

Contents

Nursing Diagnosis	Intervention	Outcome
1. pain : chest pain	1.	1.
2. Decreased Cardiac Output	2.	2.
3.	3.	3.
....		

APPENDIX H

A Manual of Health Education in Patients with Myocardia Infarction



**Male Medical Ward
Sawanpracharak Hospital
By
Multidisciplinary Team**

Contents

	Page
Definitions of Myocardial Infarction	1
Etiology	2
Signs and Symptoms	3
Treatment	4
Advise	5
Activities of Daily Living	6
Sexual Activities	7
Diet	8
Drug	10
Others	12



APPENDIX I

A Manual of Drug Administration in Patients with Myocardial Infarction



**Male Medical ward
SAWANPRACHARAK HOSPITAL
By**

Pharmacist

Drug used in Myocardial Infarction

Contents

Sawanpracharak Hospital	
Contents	
Drugs	Drug Administration and Clinic
Fibrinolytic	
1.1 Streptokinase (Streptase) 1,500,000 Units	- Intravenous, intra – arterial and coronary infusion
Anticoagulant	
2.1 Enoxaparin (Clexame)	
2.2	

APPENDIX J

A Manual of Nutritional Guidelines in Patients with Myocardial Infarction



**Male Medical Ward
Sawanpracharak Hospital
Dietitian**

Contents

	Page
Introduction	1
Nutrition for Myocardial Infarction	5
Nutrition for People with High Risk of Cardiovascular Diseases	
• Obesity	6
• Hypercholesterolemia	7
• Hypertension	9
• Diabetes Mellitus	15
Example : Diet for Myocardial Infarction	21

APPENDIX K

A Manual of Cardiac Rehabilitation and Sexual Activities in Patients with Myocardial Infarction



**Male Medical Ward
Sawanpracharak Hospital
By
Cardiologist**

Contents

	Page
Cardiac Rehabilitation	1
Sexual Activities in MI patients	6



Appendix L

Clinical Pathway For Patients with Myocardial Infarction



Male Medical Ward
Sawanpracharak Hospital
by
Multidisciplinary Team

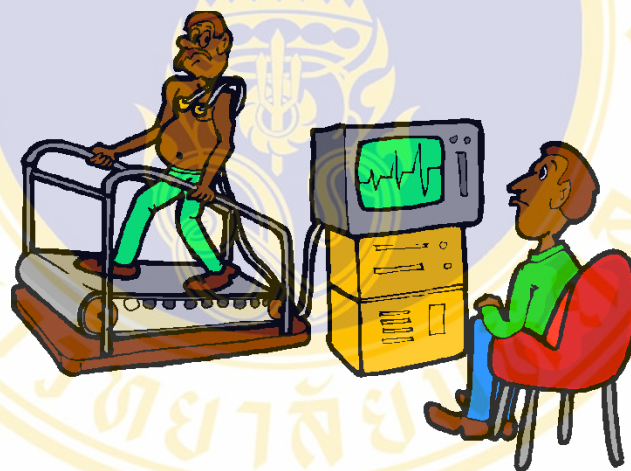
APPENDIX L
Clinical Pathway for Patients with Myocardial Infarction
Sawanpracharak Hospital

Expected LOS : 6 days

Item	day 1	day 2	day 3	day 4	day 5	day 6
Expected Outcomes	☐ Vital Signs Stable	☐ Vital Signs Stable .....	.....	.....	.....	.....
Assessment/ test	.....	.....	.....	.....	.....	.....
Intervention						
Health Education	.....	.....	.....	.....	.....	.....

APPENDIX M

An Assessment Form for Self Management of Patients with Myocardial Infarction



**Male Medical Ward
Sawanpracharak Hospital
by
Multidisciplinary Team**

Contents

	Page
Part I Demographic Information	1
Part II Assessment of Ability of Patient in Self Management	4



APPENDIX N

A Record of Length of Stay and Re-Admission

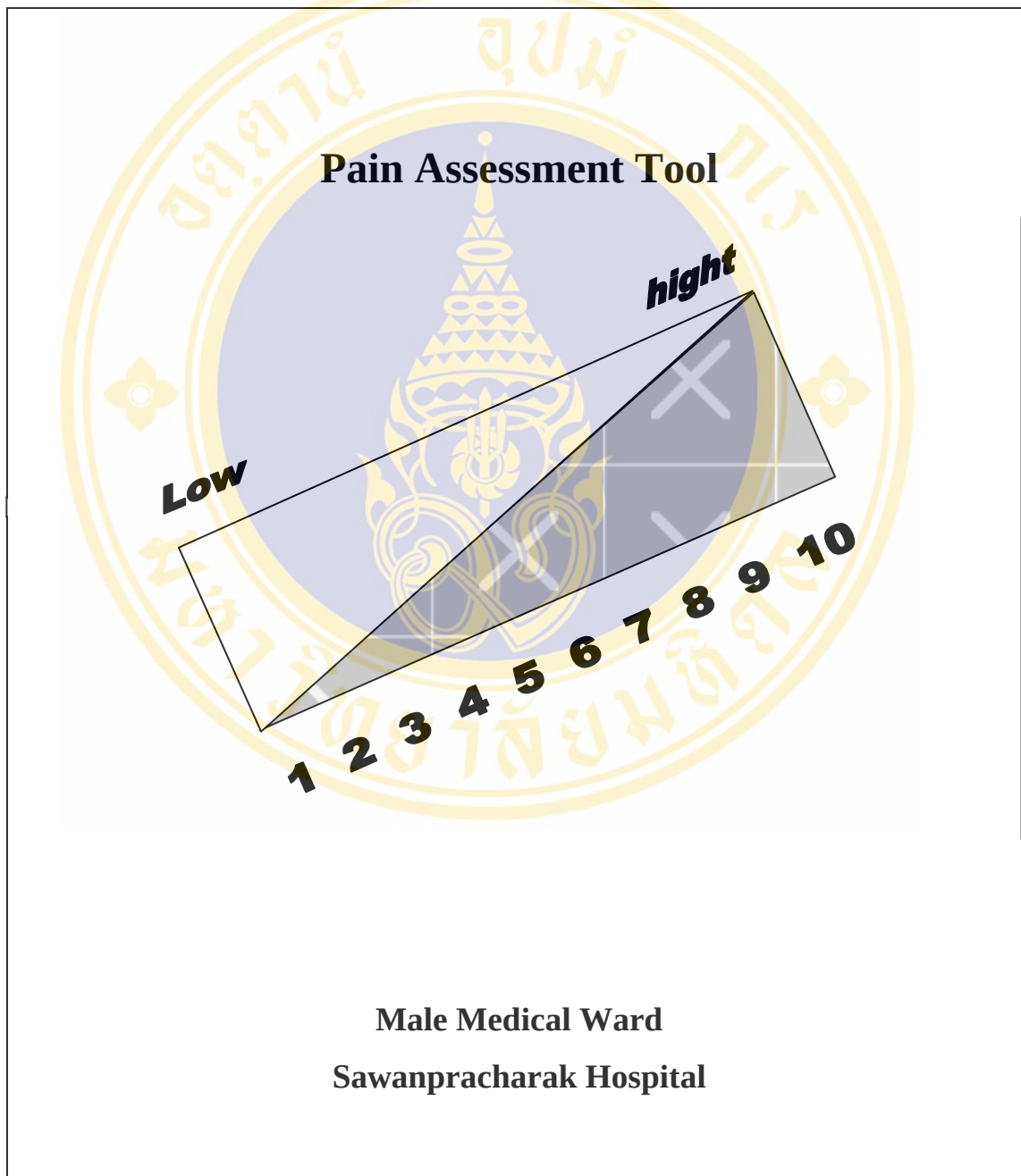


**Male Medical Ward
Sawanpracharak Hospital**

**Record of Length of Stay and Re-admission
for Myocardial Infarction Patients
Male Medical Ward
Sawanpracharak Hospital**

No	Name	Admission Date	Discharge Date	LOS	Re-admission Date	Note

APPENDIX O



APPENDIX P

Progress Note for Multidisciplinary Team



Male Medical Ward
Sawanpracharak Hospital

APPENDIX P

[illegible]

BIOGRAPHYThe background of the table features a large, faint, circular seal of Mahidol University. The seal is gold-colored with a blue center. It contains a central emblem of a traditional Thai stupa (chedi) with a flame-like base. The Thai text "มหาวิทยาลัยมหิดล" (Mahidol University) is written in a circular path around the central emblem.

NAME	Miss.Rasee Leenakul
DATE OF BIRTH	October 9, 1954
PLACE OF BIRTH	Nakhonsawan, Thailand
INSTITUTIONS ATTENDED	Sawanpracharak Nursing School, 1975: Diploma of Nursing Mahidol University, 1981: Bachelor of Nursing Science Mahidol University, 1985: Master of Science (Nursing) Mahidol University, 2005: Doctor of Nursing Science
POSITION & OFFICE	Director of Nursing Sawanpracharak Hospital Nakhonsawan 60000 Thailand Tel. 056-228688 Ext.2207, 2208, 2203