QUALITY OF NURSING CARE AFTER IMPLEMENTATION

OF A QUALITY MONITORING PROGRAM

A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN THE GRADUATE SCHOOL OF THE

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COLLEGE OF NURSING

ΒY

MAURENE DAWSON MIDDLEBROOKE, R.N., B.S.

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CHAPTER 1

INTRODUCTION

Quality of care or quality assurance has become a required element in health care facilities today. The Joint Commission of Accreditation of Hospitals (1981) requires review of the quality of care and places much emphasis on developing an integrated, coordinated quality assurance program. There is pressure from within professional groups and from outside agencies to regulate the quality of patient care being provided. A better informed public is demanding assurance that quality health care is provided. Court settlements are rising under increasing litigation that adequate guality of care is not provided (Haussmann & Hegyvary, 1977). Medicare and Medicaid have brought statutory requirements for the supervision of the utilization, cost, content, and appropriateness of health care (Corey, Saltman, & Epstein, 1972).

It has been difficult to provide adequate information about the quality of care and to justify expenditures due to a lack of valid and reliable instruments to measure the quality of care. There is now a valid and reliable instrument available to measure the quality of nursing

care (Haussmann, Hegyvary, & Newman, 1976). Since quality monitoring and reporting are both time consuming and expensive, it would be beneficial if by using this valid and reliable instrument, the quality of care would improve as a result of having a monitoring program.

Problem of Study

The problem of this study was: To determine if there is a difference in the quality of the nursing care on eight general care units 6 months after a quality of nursing care monitoring program was implemented?

Justification of Problem

Aydelotte (cited in Lang, 1976a) pointed out that one of the most complicated and confounding problems for study was the evaluation of quality nursing. The evaluation and assurance of quality nursing care have been a concern of the nursing profession for some time (Lang, 1976a). It has become an area that can no longer be ignored by health care providers. Nursing service, typically the largest direct patient care department in a hospital, has been delegated the responsibility of consistently monitoring all aspects of nursing care, identifying, and resolving all known or suspected

problems (that impact directly or indirectly on patients) and doing follow-up to insure resolution of the problems (Joint Commission of Accreditation of Hospitals, 1981).

Identification of problems and implementation of corrective action can take a long time due to monetary restraints dealing with hospital bureaucracy or just delegating time from caregiving to plan and implement change. Therefore, more efficient and comprehensive means of monitoring the numerous aspects of patient care need to be implemented.

The patient care system is composed of many factors; both physical and nonphysical needs of the patient must be met. The provision of care for the patient is dependent on the provision of many indirect or support elements. All of these activities must be monitored to measure the quality of nursing care (Hegyvary & Haussmann, 1975).

Available tools for evaluation of nursing care may be used without knowing the intent of the tool. Endless debate over which type criteria to use or tools to be used can stifle progress (Lang, 1976a). Ultimately, the purpose for quality assurance activities must be to achieve an improvement in nursing care and to assure people that they are receiving quality nursing care.

The six objectives of the Nursing Quality Monitoring Methodology with the 32 subobjectives provide a patient-oriented approach to evaluating the quality of nursing care. The objectives and subobjectives can be viewed as standards for practice. They can be used as goals to promote excellence in nursing care, thus contributing to the quality of care which they are designed to evaluate.

Theoretical Framework

Management by objectives as described by Ganong and Ganong (1967) consists of three basic phases: setting objectives and performing and measuring results. Setting objectives is a process whereby desired accomplishments are established and written down in measurable terms. Performing is working toward achieving or meeting the objectives. At set intervals the progress toward the accomplishment of the set objectives is measured. These results are compared to the desired results. It is at this point that the objective is met or the degree of accomplishment is established. This is a cyclical process; therefore, new objectives are set, old objectives are revised, efforts are directed at maintaining the achieved level of success or efforts are continued toward

reaching the previously set objectives. Each phase builds upon the input from the preceding phase and provides feedback or output for the phase that follows. The anticipated outcome of management by objectives is the achievement of mutual goals. If goals (standards of care) are used to direct nursing care, then the quality of care should increase; this study was conducted to test this statement.

Assumptions

The following assumptions were formulated for this study:

 A mutual goal of nurse managers and nursing staff members is the delivery of quality nursing care.

2. The singular and collective performance of the staff on each nursing unit has a degree of control over the nursing department's ability to achieve its standards of care.

3. People's response to information about their performance varies with their commitment to goals.

Hypotheses

The following hypotheses were tested for this study:

1. There is a significant increase in the percentage of criteria met under Standard I. The Plan of Nursing

Care Is Formulated, when the percentage of criteria met at the beginning of the monitoring program is compared to the percentage of criteria met after the program has been in effect 6 months.

2. There is a significant increase in the percentage of criteria met under Standard II, The Physical Needs of the Patient Are Attended, when the percentage of criteria met at the beginning of the monitoring program is compared to the percentage of criteria met after the program has been in effect 6 months.

3. There is a significant increase in the percentage of criteria met under Standard III, The Non-Physical Needs of the Patient Are Attended, when the percentage of criteria met at the beginning of the monitoring program is compared to the percentage of criteria met after the program has been in effect 6 months.

4. There is a significant increase in the percentage of criteria met under Standard IV, Achievement of Nursing Care Objectives Is Evaluated, when the percentage of criteria met at the beginning of the monitoring program is compared to the percentage of criteria met after the program has been in effect 6 months.

5. There is a significant increase in the percentage of criteria met under Standard V, Unit Procedures Are

Followed for the Protection of All Patients, when the percentage of criteria met at the beginning of the monitoring program is compared to the percentage of criteria met after the program has been in effect 6 months.

6. There is a significant increase in the percentage of criteria met under Standard VI, The Delivery of Nursing Care Is Facilitated by Administrative and Managerial Services, when the percentage of criteria met at the beginning of the monitoring program is compared to the percentage of criteria met after the program has been in effect 6 months.

Definition of Terms

The terms used in this study were defined as follows:

1. <u>Quality of nursing care</u>--a measure of the quality of performance of the group of nurses on a nursing unit based on the general care criteria in the Nursing Process Quality Monitoring Instrument Master Criteria List published by Medicus Systems Corporation (1981). The higher the percentage of criteria met, the higher the quality of care.

2. <u>General care nursing units</u>-nursing units which provide medical, surgical, and/or pediatric patient care

services as opposed to labor and delivery, emergency departments, psychiatry, nursery, or recovery rooms.

3. Quality of nursing care monitoring program-the Nursing Quality Monitoring Methodology described by Medicus Systems Corporation (1981). The program is based on six standards of nursing care which are divided into subobjectives with varying numbers of criteria to measure compliance with the subobjectives (Appendix A).

Limitations

The following limitations applied to this study:

 Nine observers monitored for the study, and although the interobserver reliability was 85% agreement, fewer observers might have given more consistency to data gathering.

2. The size and mix of the work group on each unit varied.

3. The degree of task specialization on each unit varied.

4. The type of nursing care organization (functional, team, patient-centered) differed on some units.

5. The education and experience of the work group on some units varied.

6. Job satisfaction and other attitudes of the work group may have varied.

7. The nursing leadership style on each unit may have varied.

The attitudes of the supervisory staff may have varied.

9. The patient census on each unit varied.

Summary

This chapter has addressed the necessity for evaluation and assurance of quality nursing care. In the interest of identifying an efficient comprehensive means of monitoring the quality of nursing care, the question "Is there a difference in the quality of the nursing care on eight general care units 6 months after a quality of nursing monitoring program was implemented?" was presented. Management by objectives as described by Ganong and Ganong (1967) was presented as the theoretical framework. The outcome of management by objectives is the achievement of mutual goals. If goals (standards of care) are used to direct care, then the quality of care should increase; thus, a study was conducted to test this statement.

CHAPTER 2

REVIEW OF LITERATURE

In examining the literature available for review, it was found that evaluation and quality assurance of nursing care were presented as priorities for nursing research. The idea of evaluating health care is not This is documented by a brief historical account. new. Some basic concerns related to quality assurance and evaluation, specifically cost, predetermined standards, accountability, and client satisfaction were presented followed by a discussion on uses of standards, what the are, and what they can accomplish. Standards were also addressed in terms of professional responsibility. Therelationship of control systems and management by objec tives to standards and effectiveness of management was presented. The concept of change was discussed as an important factor in evaluation followed by a presentation on conceptual frameworks and models, research instruments, and outcome criteria and instruments for evaluation of the quality of patient care. The use of process criteria versus the use of outcome criteria was discussed briefly. The chapter concluded emphasizing the importance of improvement in quality assurance.

Evaluation and Evaluation Research

Evaluation and quality assurance of nursing care are priorities for nursing research.

Evaluation or assessment and assurance of health care that meet high standards of quality have been recognized as critical problems in the delivery of health services by both consumers and health professionals. (Lang & Werley, 1980, p. 68)

A main objective of evaluation and evaluation research is to provide useful information for making decisions. It is necessary that nursing evaluation and evaluation research be strengthened and that the results be put to use in the immense area of health care policy (Lang & Werley, 1980).

Phaneuf (1980), in addressing evaluation and evaluation research, defined program evaluation as "essentially a problem-solving process based on the results of systematic inquiry" (p. 123). Program evaluation has one or more main objectives:

1. To contribute to decisions about program installation.

2. To contribute to decisions about program continuation, expansion, or certification.

3. To contribute to decisions about program modification or termination.

4. To obtain evidence to rally support for the program.

5. To obtain evidence to rally opposition to the program.

6. To contribute to the understanding of basic psychological, social, and other processes involved in or affecting the program. (Phaneuf, 1980, p. 123)

Evaluation and evaluation research are necessary for effective decision-making. Evaluation results add strength and substance to decisions about health care programs and policies.

Historical Account of Evaluation of Health Care

The idea of evaluating health care is not new. The needs and uses of evaluation in health are reviewed from the 1800s through the present.

Florence Nightingale (cited in Luker, 1981) showed how data could be used to evaluate the need for health care services. Nightingale collected data regarding the living accommodations of patients at old Saint Thomas' Hospital in Southwark by using a questionnaire. Miss Nightingale used the results of her data to persuade the Hospital Board of Governors to build the new hospital in Lambeth where it would be of service to a larger group of people (Luker, 1981).

An 1850 report to the Massachusetts Legislature stated:

Bad nursing often defeats the intention of the best medical advice, and good nursing often supplants the defects of bad advice. Nursing often does more to cure disease than the physician himself, and, in the prevention of disease and in the promotion of health, it is of equal or even of greater importance. (Haussmann & Hegyvary, 1975, p. 12)

In 1893, Robb complained about the need for standards of care and nursing performance. Robb (cited in Roberts, 1964) stated that "'trained nurses' may mean anything, everything, or next to nothing . . . and public criticism is frequently justly severe upon our shortcomings" (p. 22). In 1912, at the third annual meeting of the Clinical Congress of Surgeons of North America, standard setting began (Aydelotte, 1975). The Joint Commission of Accreditation of Hospitals has greatly influenced standard setting in health care. Many groups including nursing have gradually developed standards (Aydelotte, 1975).

Medicare and Medicaid laws went into effect in 1966, thus introducing many rules and regulations. These rules and regulations included terms of participation, procedures for payment, and setting of standards. In 1972, the Social Security Act was amended to provide for the Professional Standards Review Organizations (PSROs). The intent of PSROs was "to promote effective, efficient, and economical delivery of health services of proper quality for which payment may be made under the Act"

(Hartman, 1976b, p. 27). This amendment established quality assurance requirements for health care practitioners. Cost and control of cost of Medicare and Medicaid necessitated the amendment in 1972 (Hartman, 1976b). It was also in 1972 when the American Hospital Association first published the Patient's Bill of Rights. It clearly stated that each patient had the right to expect a certain quality of care (Moore, 1976).

With the advent of Medicare, Medicaid, and the Patient's Bill of Rights came the consumer movement. This movement has been directed toward accountability, equalization of bargaining power, and establishment of regulations. In the health field, the problems have related to accessibility, quality, quantity, and cost of health services (Aydelotte, 1975). The third party payers (insurance carriers, unions, government) make up a special group of consumers. This group has been very influential in the quality assurance movement. They are particularly concerned with costs, over utilization of services, and inadequate care (Aydelotte, 1975).

On March 24, 1983, Congress passed legislation for a prospective rate system for Medicare reimbursement based on diagnosis-related groups (DRGs). This system

may change the way many hospitals function. This program imposes tighter controls on Medicare costs by setting separate prices in advance for each of the 467 DRGs (Rzasa, 1983).

Evaluation and use of standards have existed for over a century. The purpose of having standards and evaluating the various aspects of health care has always been to assure or improve the quality of health care.

Basic Concerns Related to Quality Assurance and Evaluation

Cost, predetermined standards, accountability, and client satisfaction are factors which interrelate to determine the quality of health care. There is increasing pressure to be effective, efficient, and economical while delivering quality health care. These concerns were addressed in the literature by many authors.

Cost and Accountability

Cost effectiveness, quality of care, and accountability are increasingly important issues in medicine and nursing. Much of the recent impetus toward mandatory quality assurance activities has been prompted by concerns over rapidly increasing costs of health care. With the continued importance of cost-containment efforts,

quality assurance activities will need to prove their own cost benefit. Monitoring and evaluation will need to be as effective in containing or reducing costs as it is in improving or maintaining quality of care (Barney, 1981; Hartman, 1976b; Lang, 1976b; Moore, 1982; Zimmer, 1980).

Both from outside and from inside the field, expectations are high that quality assurance can contain costs and maintain or improve quality, and the pressure to fulfill these expectations will be intense. (Brook, Davies, Allyson, & Kamberg, 1980, p. 128)

Donabedian (1976) believed health professionals were adverse to considering monetary cost as part of the definition of guality. The general presumption was that everything possible must be done for each patient, regardless of the cost. Donabedian believed the presumption of everything possible for each patient could not be continued because endless resources were not available, and what resources we did have needed to be allocated to give the greatest benefit to the largest group of In order to provide better care for everyrecipients. one, Donabedian (1976) thought care givers might have to provide "less good care to some" (p. 6). What effects the quality of care is contingent on what composes the quality of life.

Martin and Stewart (1982) in writing about nursing care quality stated:

It has become imperative to determine the quality of nursing care delivered. This has been brought about by the continuous cost rises in the health care system and the evolution of nurses' accountability for their practice. (p. 44)

Predetermined Standards, Accountability, and Client Satisfaction

The meaning of quality assurance and its relationship to predetermined standards, accountability, and client satisfaction were discussed by several authors (Aydelotte, 1975; Donabedian, 1980; Moore, 1976; Schmadl, 1979). Moore (1976) defined quality assurance as the accountability of health personnel for the quality of care they provided. Moore believed that to be accountable it was essential that what health personnel did was done in a manner that would allow the action to be compared to a predetermined standard. Essential to defining quality assurance in terms of accountability for the quality of care was a commitment by the nurse "to improve care and to practice her skills professionally" (Moore, 1976, p. 8).

Aydelotte (1975), in discussing quality assurance and accountability, defined quality assurance as a program system through which attributes of services could be examined and the proximity to excellence determined. Aydelotte was discussing a unified program that would assure health care professionals, consumers, and the public that a specific level of quality care had been provided. Aydelotte believed that nurses overlook the fact that nurses operate under a social mandate given by society that permits nurses to perform services for people. With the recognition of nursing services and permission to perform nursing services, came the expectation that nurses were accountable for the quality of nursing services and the end results of nursing services. Aydelotte believed evaluation had to be reported by a system of surveillance, evaluation, and corrections that resulted in reports that could be shared with the public.

According to Schmadl (1979), quality assurance included assuring a certain degree of excellence to the consumer. Excellence could be assured by continued measurement and evaluation of structural components, use of goals to direct the nursing process, and/or consumer outcomes. Excellence in health care can be assured to the consumer by using pre-established criteria and standards, and available norms, to measure and evaluate healtn care, rollowed by appropriate changes to improve weak areas.

Donabedian (1980) addressed the

concept of the quality of care as that kind of care which is expected to maximize an inclusive measure of patient welfare after one has taken account of the balance of expected gains and losses that attend the process of care in all its parts. (pp. 5-6)

Donabedian continued by describing client satisfaction to be of primary importance as a measure of the quality of care

because it gives information on the provider's success at meeting those client values and expectations which are matters on which the client is the ultimate authority. (Donabedian, 1980, p. 25)

Quality assurance has been defined and the relationships of cost, predetermined standards, accountability, and client satisfaction have been discussed as factors in determining the quality of health care. The importance of evaluation followed by appropriate changes to improve the quality of health care was also emphasized.

Standards for Health Care

The need for assessment and accountability leads to the foundation of planning and evaluation--standards. The uses of standards, what they are, and what they can accomplish are discussed. Standards are also addressed in terms of professional responsibility. The relationship of control systems and management by objectives to standards and effectiveness of management are also presented.

Uses of Standards, What They Are, and What They Can Accomplish

Edmunds (1983) perceived quality assurance to be a cyclic process. This process began with setting standards of care, then care was measured by the standards, the data were evaluated, and recommendations were made for improvement. The hypothesis of this quality assurance model was "that the standards of care serve as the cornerstones for both care planning and care evaluation" (Edmunds, 1983, p. 37). Standards are used as guides in writing care plans and they are the basis for the criteria to Donabedian (1976) made a very profound measure care. statement to this regard, "all the health care in the world is for naught unless it makes some impact on health" (p. 9) Weinstein (1976) stated that it is "unrealistic to think that one can state absolute quality of care-quality can be expressed only in relation to a standard" (p. 2). According to Ramey (1973), it is essential that nurses develop standards of patient care and suitable evaluation instruments in order to provide a high quality of care. Ramey believed the development of standards

of patient care and suitable evaluation instruments is necessary to ensure the professional aspects of nursing involving intellectual and interpersonal activities. Development of standards and evaluation tools will also ensure that attention was given to the individual needs and responses of the patients.

Crow (1981) believed that "what we want in nursing is acceptable standards of care and ways of ensuring that the care nurses give is of a high quality" (p. 492). Crow defined standards of care as "some measure or measures by which nursing care can be judged or compared where the measures used are those agreed [upon] by common consent" (Crow, 1981, p. 493). Crow continued by stating, "quality of care can only be used to refer to those characteristics of care which can be made explicit and so, subject to empirical investigation" (p. 493).

According to Crow (1981) standards of care include measures that judge or compare nursing activities; measures that judge or compare the quality of the activities; models which incorporate both actions and the quality of the actions or measures which represent the outcome of care. (pp. 493-494)

Crow further indicated that

effectiveness of care is either a value judgment about the consequences of care or, if it is to form the goals of systematic study, an exercise where specific criterion are defined to stress the results of care. (p. 494)

According to Pitts (1980) standards provide an agreed upon level of excellence by which nursing organizations and nursing practice can be modeled. Pitts further stated that standards serve as guidelines to measure the care nurses give and allow development of systems of evaluation and provide quality assurance to patients. Standards also provide a frame of reference for conversing with patients, nurses, colleagues in the health professions, and administrators about nursing.

Standards for nursing practice give the nurse administrator a means of carrying out responsibility to establish sound personnel policies, provide appropriate inservice training and staff development programs, and assess and justify the support requirements for the institution's nursing care needs (Pitts, 1980; Stevens, 1972). Pitts (1980) also indicated that the use of standards of practice by individual nurses helped to ensure planned individualized nursing care for each patient. The assessment criteria built into the standards provide the format for evaluation and quality assurance.

Standards and Professional Responsibility

Ramey (1973) indicated that the American Nurses' Association, the National League for Nursing, and the

Joint Commission for Accreditation of Hospitals all have standards for nursing practice or nursing care. These standards address the professional nurse's responsibilities for planning, implementing, recording, and evaluating nursing care and the responsibility for supervising those who deliver the care. These are minimum standards for care. Each institution has to determine the level of quality it desires to seek and maintain.

Jenkins (1982) stated that the roles and responsibili of the professional nurse will be made explicit through definitions of standards for nursing practice and nursing care. Jenkins further indicated that accountability and autonomy would be demonstrated and excellence achieved through the implementation of control systems in nursing. Jenkins in addressing standards of care and their influence on nursing indicated that the joint discussions and cooperative efforts required to formulate standards, and to implement and maintain control systems, provided nurses with the ideal situation to clarify values, resolve differences, and to become united in pursuing improvement in health care.

"Professional standards reflect the values of the profession's members" (Jenkins, 1982, p. 38). Jenkins

believed that through the formulation of standards, the values which formed the basis for nursing concepts and constructs of quality could be made clear and operational. Jenkins further indicated that nurses would be recognized as professionals through the delivery of excellent nursing care. Jenkins indicated that excellence in nursing could be achieved through definition of standards and implementation of well designed and competently managed control systems.

Control Systems and Management

Control according to Sherwin (1966) is "action which adjusts operations to predetermined standards, and its basis is information in the hands of managers" (p. 203). Control systems have three components: a standard, an information feedback system, and an action taken to keep performance in line with the standard (Jenkins, 1982; Nicholls, 1974; Slee, 1972; Stevens, 1972). In patient care the standards for control are found in the nursing care plan. Control requires that nurses become more conscious of standards and more adept in devising and using information-feedback systems (Nicholls, 1974).

Control is essential for effective management; for, no matter how well planned the objectives, how strong

the organization, how capable the direction, or how altruistic the motivation, there is little chance of success without adequate control and feedback systems. (Jenkins, 1982, p. 38)

Hartman (1976b) thought that "the effectiveness of systems for monitoring the quality of care will depend largely on the cooperation of those providing the care" (p. 32). In relation to this, Moore (1982) pointed out that "the conscientious nurse feels uneasy about such efforts since they appear to take time from direct patient care with no immediate tangible result" (p. 21). Nurses should not feel uneasy about time spent on monitoring and evaluating care because their consumer clients will reap the long term benefits (Moore, 1982).

Cain and Luchsinger (1978) thought "nurses could provide a higher quality of care within the same cost framework, if nursing management became more resultoriented" (p. 35). To achieve control, Cain and Luchsinger (1978) suggested the use of management by objectives,

a process whereby the superior and subordinate managers of an organization jointly identify its common goals, define each individual's major area of responsibility in terms of the results expected of him, and use these measures as guides for operating the unit and assessing the contribution of each of its members. . . . Each person in the organization knows exactly what is expected of him. (pp. 37-38)

The path-goal theory, first presented in 1955 by Brayfield and Crockett (cited in Cain & Luchsinger, 1978) was utilized as the basis for management by objectives. This theory proposed a connection between satisfaction, motivation, and organizational goals. The theory implied that individuals were motivated to attain certain goals and were satisfied by their achievement (Cain & Luchsinger, 1978).

The Concept of Change and Evaluation

Regardless of the method chosen to achieve the setting of standards and evaluation of care, it is essential that those who plan to institute changes evaluate the process of change. Munro (1983) stated that "if the prime interest groups do not support the project, regardless of how good the products are, the project probably will not result in lasting change" (p. 24).

According to Munro (1983), nurses are being challenged to become change agents in the health care delivery system. Nurses are being asked to assess current practice, to make recommendations, and to be active participants in many new programs. These activities lead to the need for sound methods of evaluation. "Much too often programs are . . . continued despite lack of evidence

that they are making a positive contribution to health care" (Munro, 1983, p. 23).

Standards are the foundation of planning and evaluation. Standards also address the professional nurse's responsibilities for planning, implementing, recording, and evaluating nursing care and the responsibility for supervising those who deliver the care. Excellence in nursing can result from well designed and competently managed control systems. Control requires that nurses become more adept in devising and using information feedback systems. Control is essential for effective manage-The use of management by objectives is suggested ment. as a means of achieving control. Regardless of the method chosen to achieve the setting of standards and evaluation of care, it is essential that those who plan to institute changes evaluate the process of change. Nurses are being challenged to become change agents in the health care delivery system.

Conceptual Frameworks and Models

Many conceptual frameworks and models have directed the study of quality nursing care. Bailit, Lewis, Hockheiser, and Bush (1975) viewed structure, process, and outcome as links of a chain. If the necessary structural support is not present, the process of care will suffer. Outcomes will be unsatisfactory if the process of care is insufficient. Since structure, process, and outcomes are highly inter-related, then all three areas of care must be studied.

Georgopoulos (1972) used modern open systems theory to investigate the effects of selected variables on the quality of work performance. Georgopoulos saw the hospital as a complex system with inputs, such as personnel skills, attitudes, and structural traits of the setting. The primary output was the quality of care. Between inputs and outputs were critical processes that were typical of day-to-day activities of personnel.

Jelinek (1976) used a systems framework to study nursing productivity. The main concepts within Jelinek's systems framework were input, technology, output, and environment. Jelinek viewed the systems model as capable of taking in any conceptualization of factors that seemed pertinent.

Felton, Frevert, Galligan, Neill, and Williams (1976) used Chin and Benne's change theory to study differences between care given on primary nursing units and on

traditionally staffed units. The traditional units served as the control group and the primary units as the treatment group. Change was seen as a necessary ingredient to quality nursing care.

Clinton, Denyes, Goodwin, and Koto (1977) used Orem's self-care theory to design patient outcome criteria to be used to measure the effectiveness of nursing care. Horn and Swain (1976) also used Orem's self-care theory to develop criterion measures for quality patient care.

Majesky, Brester, and Nishio (1978) used Johnson's behavioral system model to develop a theoretical construct. Johnson's model conceptualized nursing's specific contribution to patient care as the prevention and/or reduction of tensions that cause disruptions in man's internal or external environment. Quality of nursing care was defined in this study as prevention of nursing care complications.

Hegyvary, Gortner, and Haussmann (1976) used the nursing process model as the framework for their methodology for development of criterion measures for quality of care. The nursing process was defined as the assessment of the status of patient and family, the planning of care on the basis of problems or needs, the
implementation of the plan for both physical and nonphysical aspects of care, and the evaluation of the response to care. Specific indicators of quality were identified for each phase of the nursing process.

Many conceptual frameworks and models have been used to study the quality of nursing care. The phase studied: structure, process, or outcomes varied, but the overall goal was the same, i.e., to promote excellence in the quality of patient care. Frameworks and models examined were structure/process/outcome framework, open systems theory, change theory, Orem's self-care theory, Johnson's behavioral system model, and the nursing process model.

Research Instruments and Tools

Numerous research instruments and tools have been developed to measure quality. Most researchers have developed new instruments for the measurement of quality (Chance, 1980).

Verhonick, Nichols, Glor, and McCarthy (1968) developed a visual tool consisting of five filmed sequences depicting patient care situations. Davis (1972, 1974) used this tool and established that education levels make a difference in quality and quantity of nursing care.

Dyer, Monson, and Van Drimmelen (1975) developed a tool called the Nurse Performance Descriptive Scales to measure nurse performance in looking at the relationship of quality patient care to nurse's performance.

Brodt and Anderson (1967) modified Aydelotte's Patient Welfare Scale and used it to determine the quality of patient welfare in service-managed and traditionally managed patient units. Abdellah and Levine (1957, 1964) developed an instrument to measure patient satisfaction with nursing care. Various tools for measuring patient satisfaction have been developed based on the assumption that patient satisfaction is an indicator of quality nursing care (Chance, 1980).

Dunn (1970) developed an instrument to measure nursing performance called the Nursing Principles Test. This tool was developed to provide a baseline measurement of the nurse's knowledge of scientific principles that are the basis for her nursing practice. The assumption was that a knowledge of scientific principles would increase quality of care. This tool was administered to over 300 registered nurses. Content validity and reliability (0.9) were established.

Weinstein (1976) developed a questionnaire for nurses which evaluated physical care, psychosocial care, and professional communication called Selected Attribute Variable Evaluation Tool (SAVE). The instrument was tested for predictive validity and concurrent validity. A correlation coefficient of $\underline{r} = .97$ was achieved when SAVE was compared with Quality Patient Care Scale (QUALPACS).

Phaneuf (1976) developed The Nursing Audit, a method for systematic written appraisal of the process of nursing care. The appraisal was made by examining the patient care records after the patient was discharged (Phaneuf, 1969). The tool used seven areas of nursing functions as a basis for judging quality of care (Phaneuf, 1968).

Wandelt and Stewart (1975) developed the Slater Nursing Competencies Rating Scale. It consisted of 84 items which identified actions performed by nurses as they provided care for patients. The standard of measurement was the quality of performance of care expected of a first-level staff nurse. The Scale has been extensively tested and shows very high interrater reliability, internal consistency, and stability over time. Construct, content, and predictive validity have also been reported.

Wandelt and Ager (1974) developed the Quality Patient Care Scale (QUALPACS) to measure the quality of patient care. This Scale was composed of 68 items adapted from the Slater Scale and was used with the same standard of measurement: quality of performance expected of a first-level staff nurse. The literature reported high reliability and acceptable validity.

The Rush-Medicus Nursing Quality Monitoring Methodology consists of six objectives and 32 subobjectives based on the nursing process (Hegyvary & Haussmann, 1975). This was the instrument used in the current research study. It has received much attention in the literature and is seen as one of the most popular instruments for evaluation of quality nursing care (Barney, 1981; Chance, 1980; Downs, 1980; Edmunds, 1983; Martin & Stewart, 1982; Selvaggi, Eriksen, Keon, & MacKimmon, 1976; Smeltzer, Feltman, & Rajki, 1983; Ventura, Hageman, Slakter, & Fox, 1982; Williams, 1980).

Horn and Swain (1977) developed criteria to measure the quality of nursing care through the assessment of patient outcome rather than medical care process. They generated and refined 539 measurement items, utilizing 8 universal and 10 health deviation self-care demand

categories adapted from work by Orem (1971). Pretesting and inter-observer reliability testing of measurement techniques were conducted for 414 of the items. An instrument was developed to match measurement techniques to patient populations (Horn & Swain, 1977).

Haussmann and Hegyvary (1977) also developed and tested outcome criteria for specific patient populations. The American Nurses' Association (1976) published model criteria for several subsets of patient populations.

Process was proposed by Stevens (1972) as the most realistic area for quality control. Stevens indicated that quality control based on outcome would be ideal; however, the lack of sufficient data based on sound research indicated that "nursing outcomes, as standards for quality measurement, will be useful only to nursing divisions operating on a high level of sophistication" (p. 17). The advantage Stevens saw in quality control based on process was that it required "professional judgment in determining whether each criterion had been met" (p. 14). Bailit et al. (1975) also felt "process measures may provide the more practical means of studying . . . care" (p. 154).

Regardless of the type criteria or instrument used, "the effectiveness of systems for monitoring quality will depend, in large part, on the cooperation of those providing care" (Bailit et al., 1975, p. 153).

"A sizable body of research indicated that the most important factor in improvement of the quality of care was that the quality was, in fact, being evaluated" (Bailit et al., 1975, p. 158). "Appraisal of quality is not an end in itself, . . . but rather a means of instituting appropriate change with the purpose of improvement" (Schmadl, 1979, p. 463). Ultimately, the steps taken to assure quality do not end with measurement, evaluation, and alteration of pre-existing conditions. "Appraisal must be a continuous process, because any health care system at any level is in constant and dynamic change" (Schmadl, 1979, p. 463).

Summary

Evaluation and assurance of health care are critical problems in the delivery of health services. Evaluation and evaluation research are necessary for effective decision making and add strength to health care policies and programs. The idea of evaluating health care dates

back to the 1800s. Medicaid and Medicare along with the Patient's Bill of Rights has stimulated consumer interest in the evaluation and quality of health care. In the health field, the consumer interest has related to accessibility, quality, quantity, and cost of health services. There is increasing pressure to be effective, efficient, and economical while delivering quality health care. Excellence in health care can be assured to the consumer by using pre-established criteria and standards to measure and evaluate health care, followed by appropriate changes to improve weak areas.

Standards of health care are the foundation of planning and evaluation. Standards of patient care provide an agreed upon level of excellence by which nursing practice can be modeled.

Control was defined as action which adjusts operations to predetermined standards. Control systems have three components: a standard, an information feedback system, and an action taken to keep performance in line with the standard. Control is essential for effective management. There is little chance of success without adequate control and feedback systems. The use of management by objectives was suggested to achieve control. To effect

lasting change it is important that the process for change is evaluated before new projects are implemented.

Many conceptual frameworks and models have been used to study the quality of nursing care. Frameworks and models examined were structure/process/outcome framework, open systems theory, change theory, Orem's selfcare theory, Johnson's behavioral system model, and the nursing process model.

A number of research instruments and tools have been developed to measure quality of nursing care. Regardless of the type criteria or instrument used, the effectiveness of the program will depend on the cooperation of those providing care.

The most important factor in improvement of the quality of care is evaluation of the quality of care. Evaluation is a means of instituting appropriate change with the objective of improvement.

CHAPTER 3

PROCEDURE FOR COLLECTION AND

TREATMENT OF DATA

This was a pre-experimental and an absolute evaluation study. Polit and Hungler (1978) described an absolute evaluation study as one that "assesses the effects of the program of interest in and of itself" (p. 214). A one group pretest-posttest design (pre-experimental) was used. This design has neither a control group nor randomization. It was pre-experimental because it failed to control for many possible extraneous factors (Polit & Hungler, 1978).

The independent variable in this study was the Quality of Nursing Care Monitoring Program. The program used was the Nursing Quality Monitoring Methodology by Medicus Systems Corporation (1981), which was composed of 6 objectives and 32 subobjectives. Only 30 subobjectives were measured for the general care series. The percentage of compliance with each of these areas was measured on each of eight general care nursing units. The dependent variable was the quality of the nursing care on the eight patient care units as measured using criteria for the

patient care units as measured using criteria for the 30 subobjectives.

Setting

The setting for this study was a 248-bed general care hospital in the Southwestern United States specializing in diseases of the chest. The institution was a university health center with an inhouse physician staff. Due to the types of diseases predominantly treated at this institution, the average length of stay is approximately 18 days. The study was conducted on eight patient care units consisting of 29-31 beds each. There were two units to a floor. Each floor had a patient care coordinator, and each unit had a head nurse. The organizational style varied depending on patient needs, degree of task specialization, size and skill mix of the work group, and leadership preferences.

Population and Sample

The population in this study consisted of data, relating to units or patients, gathered from patient, relative, or nurse interviews; patient records; and observer observations and/or inferences. The patients used for data collection had been on the unit for 24 hours, were not involved in activities that would prevent the completion of the questionnaire, and had not been monitored within the previous 7 days. Selection of time and day to monitor a unit was by random selection using a random number table.

The patient was selected by randomly choosing patients for observation. A patient roster for the nursing unit was obtained. The total number of names on the roster was counted. The observer then went to a table of random numbers and selected two numbers between 01 and the total number of patients on the nursing unit. If one of those patients was not available, or for any reason could not be included in the sample, the same procedure was followed to select another patient.

Each selected patient was classified utilizing the Rush-Medicus Patient Classification System (Appendix B). The patients were classified by severity of illness into four patient types (Appendix C). The monitoring criteria were divided into series of questionnaires by patient type and nursing unit functional criteria (Appendix D). The questionnaires were utilized sequentially within each series. After determining the patient type of the selected patients, the appropriate

questionnaire was then utilized. The questionnaire number, date, and patient number were then entered on the worksheet control form (Appendix D). The worksheet control form had two purposes. The first was to ensure that each type of questionnaire was used in consecutive order on each unit. The second was to show the observers (registered nurses who have been taught the monitoring procedure and who have established an inter-observer reliability score of 85% agreement) which patients they had to interview. There was one worksheet control form for each nursing unit for each of the months data were collected.

The number of patients observed on each nursing unit was 10% of the average number of admissions to the nursing unit per month. A minimum of 10 patients per nursing unit had to be observed for the data to be valid. Ten patients were observed per month on each nursing unit in the study; therefore, data were gathered on 80 patients the first month and 80 patients the sixth month after the monitoring program was implemented.

Monitoring criteria were divided into two main categories: criteria that pertained to functions of the nursing unit and criteria that pertained to care of the patient. Data for unit questionnaires were obtained

through observation of patients, nursing personnel interviews, observation of nursing personnel, observation of the patient's environment, observer inference, and observation of unit management. Data for patient questionnaires were obtained through all of the sources used for the unit questionnaires plus patient interviews and observation of the patient's medical record. Each time an observer went to a unit to monitor, two patient questionnaires and one unit questionnaire were completed. Sixty percent of the questionnaires were collected on the day shift and 40% on the evening shift.

The sample consisted of the data from 80 patient questionnaires and 40 unit questionnaires collected the first month the quality monitoring program was implemented, and data from 80 patient questionnaires and 40 unit questionnaires collected the sixth month after the quality monitoring program was implemented. Ten patient questionnaires and five unit questionnaires were collected on each of the eight nursing units the first month and 10 patient questionnaires and five unit questionnaires were collected on each of the eight nursing units the sixth month after the quality monitoring program was implemented, making a total of 80 patient questionnaires

and 40 units questionnaires for each data collection period. The nursing personnel had no exposure to the monitoring criteria before the first month of data were collected.

Protection of Human Subjects

This study was in compliance with Category I of the Risk Categories and did not necessitate full committee review (Appendix E). Written permission was obtained from the graduate school (Appendix F) and from the agency to conduct the research study (Appendix G).

Instrument

The quality Monitoring Methodology was developed in 1972 by Medicus Systems Corporation (1981) and two of its clients through participation in a research study funded by the Division of Nursing of the Bureau of Health Resources Development, Department of Health Education and Welfare. The methodology has undergone additional study since the original grant. As it exists at the present time, it is able to monitor nursing performance in medical, surgical, pediatric, newborn, recovery room, labor and delivery, emergency room, and psychiatric patient areas. For the current study, only the general care criteria which include medical, surgical, and pediatric

related criteria were used. The model for development of the instrument was based on the nursing process structure of assessment, planning, implementation, and evaluation of patient needs; and the plan of nursing care.

The methodology is founded upon the employment of 357 criteria within the framework of a nursing process structure. This structure is made up of six major objectives and 32 subobjectives. Only 30 subobjectives are monitored for general care. Each subobjective represents an independent trait for which performance measures are procured and reported. Varying numbers of criteria measure the trait represented by each subobjective (Appendix D). Not all criteria are used to evaluate any given patient or nursing unit setting. Subsets of criteria have been methodically grouped by patient type into questionnaires (Appendix D). The specific arrangement of criteria on any given questionnaire are in part different from the other questionnaires for the same patient type.

Information for observation is obtained from various sources including patient interviews, nurse interviews, patient records, patient observations, nurse observations, environmental observations, and observer inferences (Medicus Systems Corporation, 1981).

Criteria responses are recorded on answer sheets (Appendix D). The answer sheets are designed in a style that will expedite data processing. A computerized reporting system is used to provide quality scores. Scores for each of the 6 objectives and the 32 subobjectives are reported by nursing unit in percentages from 0 to 100 based upon the number of criteria met within each subobjective (Medicus Systems Corporation, 1981). The higher the percentage, the more criteria were met. The average of the scores reported for the subobjectives equals the score for their standard (objective), indicating the percentage of criteria met under each standard (Appendix D).

The Patient Classification System was developed at Rush-Presbyterian-St. Luke's Medical Center. Significant conditions exhibited by a patient which would increase or decrease the nursing staff workload were defined through observation, analysis, and consultation with nursing personnel.

After using the condition list for a given period of time, relationships of a condition became apparent, and it was possible to reduce the list from 150 to 32 indicators. After consultation with nursing personnel,

it was determined that patients should be classified into four categories by degree of need. Then a patient summary sheet was designed listing the patient conditions the nursing staff had defined. The patient conditions were assigned point values according to the projected amount of time that was required to complete the particular tasks involved with a given condition. The four patient classifications were then assigned point values. The list of indicators was marked by the responsible nurse indicating the level of care required. The points were added and the corresponding patient classification or type assigned (Jelinek, Haussmann, & Hegyvary, 1974).

<u>Validity</u>

Content, construct, concurrent, and predictive validity were addressed for the quality monitoring methodology. No one rationale or set of data presented offered overwhelming evidence of validity, but taken together they made a strong argument. According to Haussmann et al. (1976), "the case for validity is, at the very least, considerably stronger than that for any other evaluation methodology in this field" (p. 29).

To substantiate the validity of the evaluation criteria and of the theoretical cohesiveness of the subobjective structure, the criteria were

applied in a large-scale field test in 19 hospitals and 107 medical, surgical, and pediatric patient care units. The test was set up for continuous quality monitoring over a six-month period from December 1973 through May 1974. Methodological implementation in the study hospitals delayed monitoring in some cases, so that only five months of data were available for analysis. Analysis of criteria performance followed the same pattern as had been utilized in the developmental phase; that is, criteria were analyzed for ability to discriminate, for redundancy, and for applicability to the dimension of the nursing process they were assumed to be evaluating; the structure of the methodology as a whole was tested by means of cluster analysis. (Haussmann et al., 1976, p. 13)

<u>Content Validity</u>. The methodology was based on review of evaluation literature and theory, and pre-existing quality monitoring instruments. An outside panel of experts and two advisory groups of nurses from the two Phase I hospitals reviewed and contributed to the evaluation criteria (Haussmann et al., 1976).

<u>Construct Validity</u>. When the quality scores were analyzed, they showed a high degree of intercorrelation between several parts of the nursing process.

Assessment and planning subobjectives frequently correlated significantly with nonphysical needs subobjectives (22 out of a possible 30 correlation are significant at the .001 level); and nonphysical needs subobjectives frequently correlated significantly with evaluation subobjectives (11 out of 12 cases). Subobjectives in all three of these areas relate primarily to independent nursing functions--as opposed to subobjectives in the physical needs area, which are strongly influenced by hospital policy, physicians' orders, and routine

nursing practice. Only about half (23 out of 45) of the correlations between Objective 1, Assessment and Planning, and Objective 2, Attending Physical needs, are significant. Further, there is a high degree of correlation between subobjectives in the nonphysical needs area and those in the support services area (23 of 24 intercorrelations are significant). This demonstrates a strong substitution effect of nursing effort between these two areas. (Haussmann et al., 1976, p. 30)

Concurrent Validity. Support for concurrent validity comes from the subjective assessments of quality that key nursing personnel in the study hospitals had made for the units they selected to participate. Quality scores obtained were shared with the study hospital. The assessment of the units by the hospitals' staff agreed with the quality scores in all cases. A number of the study hospitals had continued to use the quality-monitoring methodology. The support for the quality scores and the continued use of the methodology by a number of study hospitals indicates that the "methodology probably has concurrent validity--at least--to the extent that this is testable without statistical data" (Haussmann et al., 1976, p. 30).

<u>Predictive Validity</u>. The limited data regarding predictive validity for the quality-monitoring methodology arise from a number of specific cases. In one study

hospital, the head nurse for a surgical unit became ill and had to be hospitalized. She was out for 2 months. This deprived the unit of direct day-to-day nursing leadership and caused anxiety among the unit staff. Both of these factors could potentially contribute to a decline in quality of care. This decline would be expected to reverse with the return of the head nurse. The unit had persistent problems with the areas of written care plans and patient response evaluation; however, these were the only areas of standard deviation below the mean for all surgical units in the study when the head nurse was present before and after her illness. During her absence, five additional areas fell below one standard deviation from the mean achieved by all surgical units in the study (Haussmann et al., 1976).

A different hospital instituted a comprehensive inservice program on care planning. An instructor was available to administer this program through the end of the quality monitoring. If the program was effective, the quality scores for this aspect of the monitoring program would be expected to improve significantly. Units with the inservice program met the subobjectives related to care plans only 19% of the time the month

the inservice program began, compared to 38% for all other units in the hospital. The following month, the units with the inservice program had increased compliance to 44% compared to 35% for all other units. The third month and last month in the study, the inservice units met the subobjectives 48% of the time while all other units met the criteria 42% of the time. The units with the care planning inservice significantly improved their scores (Haussmann et al., 1976).

A third institution used the instrument to evaluate the effect of specific organizational and staffing changes that were being made on two units. They had matched control units for comparison. The quality rose significantly on the experimental units as expected. This was reflected by the quality scores obtained from the units. "These data make a good case for the predictive validity of the quality-monitoring methodology" (Haussmann et al., 1976, p. 31).

Reliability

To test for reliability on the data base obtained from the 19 hospitals: distribution, correlation, cluster, and variance analyses were performed to assess criteria and structure performance (Haussmann et al., 1976).

Item Frequency Analysis. Review of the frequency distributions led to the following actions. "Criteria with more than 90% of valid responses in one response category were eliminated as nondiscriminating" (Haussmann et al., 1976, p. 22). Some items discriminated for some patient types, but not for others. This information improved the relevance of criteria to patient types. Some criteria with great importance such as prsence of emergency equipment, were retained.

Criteria with cumulative frequencies of 90% or greater in "Information Not Available" and/or "Not Applicable" categories were reviewed as not cost-effective. Most of these criteria were removed from the master list. When the problem seemed to result from the criterion wording rather than the information sought, the items were reworded (Haussmann et al., 1976).

Several criteria relating to the same area were combined into multi-part criteria. The changes made in the criteria list did not markedly affect the subobjective measures themselves and great care was taken not to change the meaning of the criteria which were reworded as a result of the analysis (Haussmann et al., 1976).

<u>Redundancy Analysis</u>. A three-stage decision process was applied to identify criteria pairs that were possibly measuring the same dimension. All zero-order item/item correlation coefficients within each subobjective were examined. All correlations were Pearson correlations. If two criteria were highly correlated, i.e., $\underline{R} \ge .90$, the pair was set aside for examination. The first-order partial correlation coefficient, controlling for the subobjective score, was computed. If no significant reduction in the value of the partial correlation was achieved, i.e., if \underline{R} remained $\ge .90$, then the criteria pair was statistically redundant. These pairs were then reviewed to verify whether they really referred to independent manifestations of the care dimension to which they related.

Fifty-two pairs of criteria were found with $\underline{R} \ge .90$. All correlation coefficients were significant at the .01 level. Examining the first-order partial correlation coefficients for these same pairs of criteria reduced the redundant set to 15 pair and 21 criteria. Therefore, 37 of the original pairs of high association criteria were explained statistically by another variable, the subobjective score.

The 15 statistically redundant criteria pairs were examined independently. The items examined referred to independent manifestations of the subobjective dimension in all cases (Haussmann et al., 1976).

<u>Cluster Analysis</u>. The structure of objectives and subobjectives was tested for integrity and cohesiveness.

Zero-order Pearson correlation coefficients were generated in the same manner as for the redundancy analysis. . . This item/item measure of association was transformed into a distance metric by computing the value (1-R) for each item/item correlation coefficient (R) in the matrix. The transformed matrixes were input to the clustering algorithm, which develop clusters on the basis of a search technique that minimizes the maximum distance in a cluster.

A maximum distance of .70 was specified for defining clusters. This guaranteed that all items within the clusters had a minimum association value of .30. (Haussmann et al., 1976, p. 23)

High average association values were determined from the original structure of the subobjectives. This indicated that the Phase I structuring by the national advisory panel and the project staff had a high degree of integrity.

A total of 16 criteria were identified as either forming isolated single-member clusters or forming two-member clusters that were not strongly interrelated to any other clusters. (Haussmann et al., 1976, p. 24)

These criteria were reviewed for their independent relationship to their subobjective. Eleven criteria were more marginally related to their subobjective than other criteria, but no other subobjective was as appropriate for the criterion as the original subobjective. Five criteria were identified as possibly relating to another subobjective. Four of these were placed under a different subobjective, one did not fit another subobjective and was left under the original subobjective (Haussmann et al., 1976).

Polytomous-Item Analysis. The criteria list after marginal and redundancy analysis was composed of 218 two-response criteria, 27 three-response criteria, and 12 four-response criteria. Polytomous-item analysis was done to determine whether the 39 criteria with more than two responses could be reduced to two responses without significant loss of information (Haussmann et al., 1976).

A two-stage decision process was used. The first stage identified all feasible response dichotomies for a criterion and selected the "best" response grouping. The second stage evaluated the loss of information and tested whether the "best" dichotomy was acceptable (Haussmann et al., 1976). An analysis of variance was then calculated to evaluate loss of information. The cutoff value on information loss for three-category items was .67. The average distance between responses in adjacent categories was .33. The cutoff for four-category items was .75. For purposes of analysis 29 of 39 items were dichotomized (Haussmann et al., 1976).

Interobserver Reliabiity. Registered nurses selected to be observers were trained in the basic procedure for data collection. Then, the observers were divided into groups of two or three to observe for reliability testing. All of the nurse observers in a given group would observe the same events and information at the same time using the same criteria. The answers were recorded immediately by each observer on their answer sheet. This was done for three patient questionnaires and one unit questionnaire. When completed, the number of questions on which there was complete agreement on the answers were counted. That number was divided by the total number of criteria questions to find the percentage of agreement. This process was repeated until the observers were in agreement 85% or more of the time (Appendix D).

Data Collection

The data collection was conducted in two phases by the nine nurse observers who had established interobserver reliability. The observers were randomly assigned to monitor different units on different days. A schedule of observations was made out to facilitate coordination of the data collection process and to limit bias regarding the times that units are observed. The scheduling process was performed for the first month the quality monitoring program was implemented, and again for the sixth month after the quality monitoring program was implemented. Selection of time and day to monitor a unit was by random selection using a random number table. The patients were randomly chosen for observation using the guidelines outlined under Population and Sample section of this chapter. After the selected patients were classified, using the Rush-Medicus Patient Classification System, the appropriate questionnaires were selected and the quality score sheets completed with the appropriate responses. Unit questionnaires were used in sequence as indicated on the Worksheet Control Form.

The criteria used on the questionnaires came from the same master list, the only difference being that

certain criteria are more appropriate for a given patient type. The criteria were systematically divided into questionnaires taking into consideration the appropriateness of a given criterion for a particular patient classification. Other than for appropriateness of criteria for different patient types, the criteria selection and/or patient classification have no effect on the data analyses. All the patients selected for a given nursing unit could have had the same patient classification. The patients were randomly selected, then classified for the appropriateness of the criteria.

Recording in each monitoring visit to a nursing unit consisted of one unit and two patient questionnaires. There were eight nursing units in the study. On each nursing unit, data for 5 units and 10 patient questionnaires were obtained for the first month the quality monitoring program was implemented and again the sixth month after the program was implemented. The first and sixth month of quality score sheets for each unit was analyzed for percentage of compliance of each nursing unit with the criteria that measured each of the 30 subobjectives. Scores for each of the subobjectives of the six objectives were then averaged to get the percentage

of time the objectives were met. The data used for this study were collected in June and December 1982.

Treatment of Data

The data gathered at the beginning of a quality monitoring program on eight general care units was compared to data gathered 6 months after the program was The data analysis was done on micro-computers implemented. by Medicus Corporation in Evanston, Illinois. The scores were the percentage of compliance with the criteria that measured each of the 30 subobjectives by each of the eight nursing units in the study. The scores for each of the subobjectives of the six objectives were then averaged to get the percentage of time the objectives were met by each of the eight nursing units. The paired t-test was used to analyze the data. Polit and Hungler (1978) stated that a paired t-test is used "whenever the criterion measured in the two comparison groups are not independent" (p. 550). The significance was set at p = .05. The analysis of data was done on the Texas Woman's University computer.

Due to the distribution of the percentage scores toward the upper half of the curve, the nonparametric Wilcoxon Matched-pairs signed-ranks test as used to

confirm that significance. According to Polit and Hungler (1978) nonparametric tests may be used if the distribution is markedly non-normal. Moses (cited in Downie & Heath, 1965) noted that nonparametric tests were "useful at a specified level as stated, whatever happened to be the shape of the distribution from which the sample distribution was drawn" (p. 236).

CHAPTER 4

ANALYSIS OF DATA

The problem of this study was to determine if by using standards of nursing care to direct patient care, the quality of nursing care would improve. The study sample is described in this chapter. The percentage of compliance of eight nursing units with each of six standards of nursing care was analyzed to determine if there was a significant improvement in the quality of nursing care 6 months after a quality monitoring program was implemented. The results of the paired <u>t</u>-test and Wilcoxon matched-pairs signed-ranks test are reported for each hypothesis. The chapter concludes with a summary of the findings of the study.

Description of the Sample

The study sample consisted of the data from 80 patient questionnaires and 40 unit questionnaires collected the first month the quality monitoring program was implemented, and data from 80 patient questionnaires and 40 unit questionnaires collected the sixth month after the quality monitoring program was implemented. The data from the

questionnaires were analyzed on micro-computers by Medicus Corporation in Evanston, Illinois. The scores were reported for each of the eight nursing units by percentage of compliance of each nursing unit with the criteria that measured each of the 30 subobjectives. The scores for each of the subobjectives of the six standards were then averaged to get the percentage of compliance with each of the six standards for each of the eight nursing units (Table 1). The same procedure was followed for each time period data were collected. Using the percentage of compliance of each of the eight nursing units with each of the six standards, the data were tested by the paired t-test on the Texas Woman's University computer. Due to the distribution of the percentage scores toward the upper half of the curve, the data were also run using the nonparametric Wilcoxon matched-pairs signed-ranks test.

Findings

Hypothesis 1

Hypothesis 1 stated: There is a significant increase in the percentage of criteria met under Standard I, The Plan of Nursing Care Is Formulated, when the percentage of criteria met at the beginning of the monitoring

	Standard	Pre- Treat- ment	Post Treat- ment	Average Difference	Standard Deviation
I.	The Plan of Nursing Care Is Formulated	57%	69%	12	7.67
II.	The Physical Needs of the Patient Are Attended	81%	93%	12	5.95
III.	The Non-Physical Needs of the Patient Are Attended	678	84%	17	8.55
IV.	Achievement of Nursing Care Objectives Is Evaluated	59%	72%	13	15.04
۷.	Unit Procedures Are Followed for the Protection of All Patients	78%	82%	4	4.86
VI.	The Delivery of Nursing Care Is Facilitated by Admini- strative and Managerial Services	78%	83%	5	4.11

Table]	L

Mean Percentage of Compliance for Each Standard by Time Period

program is compared to the percentage of criteria met after the program has been in effect 6 months. The paired <u>t</u>-test was used to test the hypothesis. The average difference was 12 (SD = 7.67). The initial value average was 57%, while the average value at the conclusion was 69%. The hypothesis was accepted (<u>t</u> (7) = 4.34, p = .003); therefore, there was a difference in the pre and post treatment scores for Standard I after 6 months.

Hypothesis 2

Hypothesis 2 stated: There is a significant increase in the percentage of criteria met under Standard II, The Physical Needs of the Patient Are Attended, when the percentage of criteria met at the beginning of the monitoring program is compared to the percentage of criteria met after the program has been in effect 6 months. The paired <u>t</u>-test was used to test the hypothesis. The average difference was 12 (SD = 5.95). The initial value average was 81%, while the average value at the conclusion was 93%. The hypothesis was accepted (<u>t</u> (7) = 5.88, <u>p</u> = .001); therefore, there was a difference in the pre and post treatment scores for Standard II after 6 months.

Hypothesis 3

Hypothesis 3 stated: There is a significant increase in the percentage of criteria met under Standard III, The Non-Physical Needs of the Patient Are Attended, when the percentage of criteria met at the beginning of the monitoring program is compared to the percentage of criteria met after the program has been in effect 6 months. The paired <u>t</u>-test was used to test the hypothesis. The average difference was 17 (<u>SD</u> = 8.55). The initial value average was 69%, while the average value at the conclusion was 84%. The hypothesis was accepted (<u>t</u> (7) = 5.38, <u>p</u> = .001); therefore, there was a difference in the pre and post treatment scores for Standard III after 6 months.

Hypothesis 4

Hypothesis 4 stated: There is a significant increase in the percentage of criteria met under Standard IV, Achievement of Nursing Care Objectives Is Evaluated, when the percentage of criteria met at the beginning of the monitoring program is compared to the percentage of criteria met after the program has been in effect 6 months. The paired <u>t</u>-test was used to test the hypothesis. The average difference was 13 (SD = 15.04). The initial value average was 59%, while the average value at the conclusion was 72%. The hypothesis was accepted $(\underline{t} (7) = 2.40, \underline{p} = .048)$; therefore, there was a difference in the pre and post treatment scores of Standard IV after 6 months.

Hypothesis 5

Hypothesis 5 stated: There is a significant increase in the percentage of criteria met under Standard V, Unit Procedures Are Followed For The Protection of All Patients, when the percentage of criteria met at the beginning of the monitoring program is compared to the percentage of criteria met after the program has been in effect 6 months. The paired <u>t</u>-test was used to test the hypothesis. The average difference was 4 (SD = 4.86). The initial value average was 78%, while the average value at the conclusion was 82%. The hypothesis was accepted (<u>t</u> (7) = 2.76, <u>p</u> = .028); therefore, there was a difference in the pre and post treatment scores for Standard V after 6 months.

Hypothesis 6

Hypothesis 6 stated: There is a significant increase in the percentage of criteria met under Standard VI,
The Delivery of Nursing Care Is Facilitated by Administrative and Managerial Services, when the percentage of criteria met at the beginning of the monitoring program is compared to the percentage of criteria met after the program has been in effect 6 months. The paired <u>t</u>-test was used to test the hypothesis. The average difference was 5 (<u>SD</u> = 4.11). The initial value average was 78%, while the average value at the conclusion was 83%. The hypothesis was accepted (<u>t</u> (7) = 3.79, <u>p</u> = .007); therefore, there was a difference in the pre and post treatment scores for Standard VI after 6 months.

Additional Findings

Because of the small size of the sample $(\underline{n} = 8)$ and because the percentage scores were toward one end of the curve, the Wilcoxon matched-pairs signed-ranks test was also performed. The results agreed with the paired t-test results (Table 2).

The mid-study data were tested and compared to the post-study data to determine if any insight could be gained into the rate of progress toward significant improvement in the quality of care (Tables 3 and 4). See Appendix H for the raw data. Only the value of p for

Table	2
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$\begin{array}{c} \mbox{Comparison \underline{p} Values of Paired \underline{t} Test and Wilcoxan Matched-Pairs} \\ & \mbox{Signed-Ranks Test} \end{array}$

Standard		Paired <u>t</u>	t-Test	Wilcoxan-T (one-tailed test)		
I.	The Plan of Nursing Care Is Formulated	t(7) = 4.34	<u>p</u> = .003	$\underline{\mathbf{T}} = 0.00$	<u>p</u> <.005	
II.	The Physical Needs of the Patient Are Attended	t(7) = 5.88	<u>p</u> = .001	$\underline{T} = 1.00$	<u>p</u> <.01	
III.	The Non-Physical Needs of the Patient Are Attended	<u>t</u> (7) = 5.38	p = .001	$\underline{\mathtt{T}}$ = 1.00	<u>p</u> <.01	
IV.	Achievement of Nursing Care Objectives Is Evaluated	t(7) = 2.40	<u>p</u> = .048	$\underline{T} = 3.00$	<u>p</u> <.05	
v.	Unit Procedures Are Followed for the Protection of All Patients	<u>t</u> (7) = 2.76	<u>p</u> = .028	<u>T</u> = 1.50	<u>p</u> <.025	
VI.	The Delivery of Nursing Care Is Facilitated by Admini- strative and Managerial Services	<u>t</u> (7) = 3.79	<u>p</u> = .007	$\underline{T} = 1.00$	<u>p</u> <.025	

Table 3

Mean Percentage of Compliance for Each Standard by Time Period

	Standard	Pre- Treatment	Mid- Treatment	Post Treatment
I.	The Plan of Nursing Care Is Formulated	50%	648	69%
II.	The Physical Needs of the Patient Are Attended	81%	848	93%
III.	The Non-Physical Needs of the Patient Are Attended	67%	69%	84%
IV.	Achievement of Nursing Care Objectives Is Evaluated	59%	69%	72%
v.	Unit Procedures Are Followed for the Protection of All Patients	78%	82%	82%
VI.	The Delivery of Nursing Care Is Facilitated by Admini- strative and Managerial Services	78%	79%	83%

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	Paired	t-Test	Values	Mid-Treatment	and	Post-Treatment
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Standard		Mid-Tre	atment	Post-Treatment			
I.	The Plan of Nursing Care Is Formulated	t(7) = 2.39	<u>p</u> = .049*	<u>t</u> (7)= 4.34	p = .003		
II.	The Physical Needs of the Patient Are Attended	t(7) = 1.85	<u>p</u> = .106	<u>t</u> (7)= 5.88	<u>p</u> = .001		
III.	The Non-Physical Needs of the Patient Are Attended	<u>t</u> (7) = 0.89	p = .404	<u>t</u> (7) = 5.38	<u>p</u> = .001		
IV.	Achievement of Nursing Care Objectives Is Evaluated	<u>t</u> (7) = 1.42	p = .199	<u>t</u> (7) = 2.40	p = .048		
v.	Unit Procedures Are Followed for the Protection of All Patients	<u>t</u> (7) = 1.43	<u>p</u> = .196	<u>t</u> (7)= 2.76	<u>p</u> = .028		
VI.	The Delivery of Nursing Care Is Facilitated by Admini- strative and Managerial Services	t(7) = 1.93	p = .095	<u>t</u> (7)= 3.79	<u>p</u> = .007		

*Significant by mid-treatment.

Standard I, The Plan of Nursing Care Is Formulated, was significant midway through the study period (Table 4); therefore, the data indicated that there was a gradual increase in the quality of nursing care. The Wilcoxon matched-pairs signed-ranks test was also performed on the mid-study data. The results agreed with the paired t-test results (Table 5).

Summary of Findings

1. The paired <u>t</u>-test was used to test the hypotheses with the significance set at $\underline{p} = .05$. The values of \underline{p} for the six hypotheses were statistically significant.

For Hypothesis 1, there was a significant increase in the percentage of criteria met under Standard I, The Plan of Nursing Care Is Formulated, when the percentage of criteria met at the beginning of the monitoring program was compared to the percentage of criteria met after the program had been in effect 6 months.

For Hypothesis 2, there was a significant increase in the percentage of criteria met under Standard II, The Physical Needs of the Patient Are Attended, when the percentage of criteeria met at the beginning of the monitoring program was compared to the percentage of

	Standard	Paj	red :	<u>t</u> -Te	st	(W. one	ilco -ta:	oxar iled	n-T l test))
I.	The Plan of Nursing Care Is Formulated	<u>t</u> (7) =	2.39	P =	.049*	T	= 4	.00	p =	= >.02!	5*
II.	The Physical Needs of the Patient Are Attended	<u>t</u> (7) =	1.85	P =	.106	T	= 3	.00	P =	= > . 025	5
[II .	The Non-Physical Needs of the Patient Are Attended	<u>t</u> (7) =	0.89	<u>p</u> =	.404	T	= 8	.00	p =	- >.025	5
IV.	Achievement of Nursing Care Objectives Is Evaluated	<u>t</u> (7) =	1.42	p =	.199	T	= 6	.00	p =	- >.025	5
v.	Unit Procedures Are Followed for the Protection of All Patients	<u>t</u> (7) =	1.43	p =	.196	T	= 8	.50	p =	= >.025	5
VI.	The Delivery of Nursing Care Is Facilitated by Admini- strative and Managerial Services	t(7) =	1.93	p =	.095	T	= 4.	. 50	p =	- >.025	5

Table	5
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Comparison of Paired t-Test and Wilcoxan Matched-Pairs Signed-Ranks Test Results at Middle of Study

*Significant at middle of study.

criteria met after the program had been in effect 6 months.

For Hypothesis 3, there was a significant increase in the percentage of criteria met under Standard III, The Non-Physical Needs of the Patient Are Attended, when the percentage of criteria met at the beginning of the monitoring program was compared to the percentage of criteria met after the program had been in effect 6 months.

For Hypothesis 4, there was a significant increase in the percentage of criteria met under Standard IV, Achievement of Nursing Care Objective Is Evaluated, when the percentage of criteria met at the beginning of the monitoring program was compared to the percentage of criteria met after the program had been in effect 6 months.

For Hypothesis 5, there was a significant increase in the percentage of criteria met under Standard V, Unit Procedures Are Followed for the Protection of All Patients, when the percentage of criteria met at the beginning of the monitoring program was compared to the percentage of criteria met after the program had been in effect 6 months.

For Hypothesis 6, there was a significant increase in the percentage of criteria met under Standard VI,

The Delivery of Nursing Care Is Facilitated by Administrative and Managerial Services, when the percentage of criteria met at the beginning of the monitoring program was compared to the percentage of criteria met after the program had been in effect 6 months.

2. Due to the distribution of the percentage scores toward the upper half of the curve, the Wilcoxon matchedpairs signed-ranks test was used to confirm the results of the paired <u>t</u>-test. The findings of the Wilcoxon matched-pairs signed-ranks test supported the data from the paired <u>t</u>-test.

3. A comparison of data gathered midway through the study with the final data showed that the improvement in quality of nursing care was a gradual process. Standard I, The Plan of Nursing Care Is Formulated, was the only standard to show significant improvement at the middle of the study.

CHAPTER 5

SUMMARY OF THE STUDY

One purpose for quality assurance activities is improvement in nursing care; therefore, this study was undertaken to determine if there was a difference in the quality of the nursing care on eight general care units 6 months after a quality of nursing care monitoring program was implemented. The study is summarized in this chapter. The hypothesis, statistical methods used, and the theory are described; followed by results of the study. The findings of this study and related studies are discussed, followed by the conclusions and implications of the study. Recommendations for further study are also presented.

Summary

The monitoring program was composed of six objectives and 30 subobjectives. Viewing these objectives and subobjectives as standards for practice, it was hypothesized that there would be a significant increase in the percentage of criteria met under each of the six objectives when the percentage of criteria met at the beginning of the monitoring program was compared to the percentage of criteria met after the program had been in effect 6 months. The six objectives were:

Standard I.	The Plan of Nursing Care is Evalu- ated
Standard II.	The Physical Needs of the Patient Are Attended
Standard III.	The Non-Physical needs of the Patient Are Attended
Standard IV.	Achievement of Nursing Care Objec- tives Is Evaluated
Standard V.	Unit Procedures Are Followed for the Protection of All Patients
Standard VI.	The Delivery of Nursing Care is Facilitated by Administrative and Managerial Services

The data collected the first month the quality monitoring program was implemented were compared to the data that were collected the sixth month after the quality monitoring program was implemented using the paired <u>t</u>-test and the Wilcoxon matched-pairs signed-ranks test. The nursing personnel had no exposure to the monitoring criteria before the first month of data were collected. No formal programs were introduced to correct monitored deficiencies.

It was theorized, based on management by objectives theory as described by Ganong and Ganong (1976), that

the nurses would use the criteria as standards for performing nursing care and in so doing the quality of the nursing care would improve. The theory was supported by the study data.

With regards to Hypothesis 1, there was a significant increase in the percentage of criteria met under Standard I, The Plan of Nursing Care Is Formulated, when the percentage of criteria met at the beginning of the monitoring program was compared to the percentage of criteria met after the program had been in effect 6 months. The paired \underline{t} -test was used to test Hypothesis 1. The average difference was 12 (SD = 7.67). The initial value average was 57%, while the average value at the conclusion was 69%. The hypothesis was accepted (\underline{t} (7) = 4.34, \underline{p} = .003); therefore, there was a difference in the pre and post treatment scores or Standard I after 6 months.

With regards to Hypothesis 2, there was a significant increase in the percentage of criteria met under Standard II, The Physical Needs of the Patient Are Attended, when the percentage of criteria met at the beginning of the monitoring program was compared to the percentage of criteria met after the program had been in effect 6 months. The paired t-test was used to test the hypothesis. The

average difference was 12 (SD = 5.95). The initial value average was 81%, while the average value at the conclusion was 93%. The hypothesis was accepted (\underline{t} (7) = 5.88, \underline{p} = .001); therefore, there was a difference in the pre and post treatment scores for Standard II after 6 months.

With regards to Hypothesis 3, there was a significant increase in the percentage of criteria met under Standard III, The Non-Physical Needs of the Patient Are Attended, when the percentage of criteria met at the beginning of the monitoring program was compared to the percentage of criteria met after the program had been in effect 6 months. The paired <u>t</u>-test was used to test the hypothesis. The average difference was 17 (SD = 8.55). The initial value average was 69%, while the average value at the conclusion was 84%. The hypothesis was accepted (<u>t</u> (7) = 5.38, <u>p</u> = .001); therefore, there was a difference in the pre and post treatment scores for Standard III after 6 months.

With regards to Hypothesis 4, there was a significant increase in the percentage of criteria met under Standard IV, Achievement of Nursing Care Objective Is Evaluated, when the percentage of criteria met at the beginning of the monitoring program was compared to the percentage

of criteria met after the program had been in effect for 6 months. The paired <u>t</u>-test was utilized to test the hypothesis. The average difference was 13 (<u>SD</u> = 15.04). The initial value average was 59%, while the average value at the conclusion of the study was 72%. The hypothesis was accepted (<u>t</u> (7) = 2.40, <u>p</u> = .048); therefore, there was a difference in the pre and post treatment scores for Standard IV after 6 months.

With regards to Hypothesis 5, there was a significant increase in the percentage of criteria met under Standard V, Unit Procedures Are Followed for the Protection of All Patients, when the percentage of criteria met at the beginning of the monitoring program was compared to the percentage of criteria met after the program had been in effect for 6 months. The paired <u>t</u>-test was utilized to test the hypothesis. The average difference was 4 (<u>SD</u> = 4.86). The initial value average was 78%, while the average value at the conclusion was 82%. The hypothesis was accepted (<u>t</u> (7) = 2.76, <u>p</u> = .028); therefore, there was a difference in the pre and post treatment scores for Standard V after 6 months.

With regards to Hypothesis 6, there was a significant increase in the percentage of criteria met under Standard VI, The Delivery of Nursing Care Is Facilitated by Administrative and Managerial Services, when the percentage of criteria met at the beginning of the monitoring program was compared to the percentage of criteria met after the program had been in effect 6 months. The paired <u>t</u>-test was used to test the hypothesis. The average difference was 5 (SD = 4.11). The initial value average was 78%, while the average value at the conclusion was 83%. The hypothesis was accepted (<u>t</u> (7) = 3.79, <u>p</u> = .007); therefore, there was a difference in the pre and post treatment scores for Standard VI after 6 months.

Discussion of Findings

The six hypotheses were accepted, indicating that there was a statistically significant improvement in the quality of the nursing care after the quality monitoring program was implemented. A look at the data midway through the study period showed that the quality of nursing care was improving, but was statistically significant for Standard I only. This finding suggested that the improvement was a gradual process. These findings suggest that this quality monitoring methodology can be

an important tool for nursing management in improving the quality of nursing care.

Moore (1982) conducted a study to determine whether the audit process was becoming an effective part of the daily practice of the nurses providing care at the bed-A questionnaire was developed to ascertain if side. nurses perceived a change in nursing practice as a result of nursing audit. Sixty-one percent of the nurses responded "yes" to the statement, "I have seen changes in nursing practices as a result of nursing audits" (p. 22). Moore (1982) concluded that this response was synonymous with improving quality based on predetermined criteria. The results of the study indicated that the nursing staff at the study hospital did know about and did beleive they were using audit criteria and believed that nursing practice was an independent part of the health care sys-The results of the present study support Moore's tem. conclusion that the quality of nursing care improves when nursing care is based on predetermined criteria: standards of nursing care.

Pardee, Hoshaw, Huber, and Larson (1971) did a study to determine the quality of nursing care given by two teams of nurses. The control team had a rotating team

The quality of nursing care given by the two leader. teams was measured by counting the number of times activities were performed on each team which contributed to the quality of patient care--number of nursing histories, care plans, patient care evaluations, team conferences, and public health referrals. In addition, random evaluations were done on care received by two patients on each team using a list called Standards for Nursing Care Checklist. Both teams were urged to use the checklist in giving care. The first 10-week survey indicated that the experimental team completed the most nursing histories, nursing care plans, and evaluations of patient care. One month later, a second 10-week survey was begun with consistent team leaders on both teams. The second survey showed an increase in the number of nursing histories and nursing care plans completed by the original control team and a further increase in these activities by the original experimental team. The checklist provided a comparison of the amount of satisfactory care given by each team during the second survey. The quality of care by both teams improved when the team leaders were consistent.

Pardee et al.'s study supports the theoretical framework of the present study: management by objectives. Goals of care were established, the nursing teams performed based on the goals of care, and the results were measured to determine if the goals of care were met. The quality of nursing care given by the nursing teams did improve when the leadership was consistent, implying that the nurses followed the standards of nursing care when they consistently knew what was expected. Pardee et al. believed that the job of evaluation of patient care became incorporated into the everyday care only when every member of the nursing team believed it was neces-The achievement of mutual goals is the anticipated sary. outcome of management by objectives, the theoretical framework of the present study.

Conclusions and Implications

Based on the limitations and findings of the present study, the following conclusion was formulated: After a quality of nursing care monitoring system was implemented at the participating hospital, the quality of the nursing care did improve significantly. It appears that the nurses viewed standards of care as directions and goals for nursing care.

The present study only speaks to the response at one institution, but adding the results of Moore's (1982) study, it appears that standards of care and evaluation of care can and very likely will influence nursing practice toward improving the quality of care.

The results of the present study can be applied to other areas of evaluation and other types of programs by following the basic concepts of identifying the target group, setting goals or standards, performing by the set standards, and evaluating progress. The areas of non-compliance can be determined and programs set up to correct or improve these areas. Then, the evaluation process is repeated.

The data can also be used to determine the need for additional programs, whether programs should be continued, to revise existing programs, and to evaluate the progress and outcome of planned change.

Stevens (1972) stated that a

valid purpose for the quality control system is that of serving as a motivator toward better patient care. . [and] also is useful in spotting areas of general weakness and thus may be used as a diagnostic tool by staff education departments. (p. 15)

Recommendations for Further Study

Based on the results of this study, the following recommendations are made:

 Replication of this study in other institutions using general care criteria, and using the criteria for other specialty areas is recommended.

2. A study needs to be conducted comparing various sized and mixed work groups to determine how they affect the quality of care as measured by the standards of care With the advent of Diagnosis-Related Group payments, this may become an important issue in nursing management. APPENDIX A

STANDARDS FOR NURSING CARE

- 1. The Plan for Nursing Care is formulated by or under the guidance of an RN.
 - A. The condition of the patient is assessed on admission.
 - B. Data relevant to hospital care are ascertained on admission.
 - C. The current condition of the patient is assessed.
 - D. The written plan of nursing care is formulated.
 - E. The plan of nursing care is coordinated with the medical plan of care.
- 2. The physical needs of the patient are attended.
 - A. The patient is protected from accident and injury.
 - B. The need for physical comfort and rest is attended.
 - C. The need for physical hygiene is attended.
 - D. The need for a supply of oxygen is attended.
 - E. The need for activity is attended.
 - F. The need for nutrition and fluid balance is attended.
 - G. The need for elimination is attended.
 - H. The need for skin care is attended.
 - I. The patient is protected from infection.
- 3. The non-physical (psychological, emotional, mental, social) needs of the patient are attended.
 - A. The patient is oriented to hospital facilities on admission.

- B. The patient is extended social courtesy by the nursing staff.
- C. The patient's privacy and civil rights are honored.
- D. The need for psychological/emotional well-being is attended.
- E. The patient is taught measures of health maintenance and illness prevention.
- F. The patient's family is included in the nursing care process.
- 4. Achievement of nursing care objectives is evaluated.
 - A. Records document the care provided for the patient.
 - B. The patient's response to therapy is evaluated.
- 5. Unit procedures are followed for the protection of all patients.
 - A. Isolation and decontamination procedures are followed.
 - B. The unit is prepared for emergency situations.
 - C. Medical-Legal procedures are followed.
 - D. Safety and protective procedures are followed.
- 6. The delivery of nursing care is facilitated by administrative and managerial services.
 - A. Nursing reporting follows prescribed standards.
 - B. Nursing management is provided.
 - C. Clerical services are provided.
 - D. Environmental and housekeeping services are provided.

E. Professional and administrative services are provided.

APPENDIX B

Patient Classification System

Introduction

In developing the methodology for monitoring the quality of nursing care, one of the major problems was to accurately classify patients by the level of their need for nursing care. Definition of the type and amount of care each patient required was necessary to ascertain the quality of care a patient was receiving since the nursing process, and hence the criteria used to evaluate it, differ for different care levels. For example, an intensive care patient requires extensive monitoring with regard to therapeutic, and life supportive nursing activities. Criteria to monitor these activities would for the most part, be inapplicable for a self-care patient about to be discharged. Therefore, the previously developed Rush-Medicus Patient Classification System was chosen as the mechanism for creating subsets of criteria likely to be applicable to patients with varying levels of dependency for nursing care.

Description of the System

The Rush-Medicus Patient Classification System was originally developed to measure nursing workload and

provide a means by which to determine staffing levels and allocation. The system is designed to classify patients having similar requirements for amount of nursing care into one of four categories. The categories are defined. by a specified range of hours of care required per 24 hours. Patients are classified through the selection of applicable indicators from the list of 32 indicators. Each of the indicators has an assigned numerical value or weight. The total derived through summation of the weights of the applicable indicators for a patient determines the classification of the patient. For staffing and workload monitoring purposes, the results of daily classification are translated into a weighted census called the Workload Index and the computation of the average patient acuity.

Directions for Observers

If patients are not already classified or are potentially classified incorrectly, the following steps should be taken to classify patients.

 Utilizing a patient classification form, place an "X" in the boxes of the indicators applicable to the patient. See Figure 1 for sample Patient Classification form and Figure 2 for definitions of indicators.

2. Total the weights of the indicators that have been checked. A ruler listing the weights and designed to match the format of the patient classification can facilitate this process. Figure 3 presents the weights of the indicators.

3. Determine the patient's classification by noting within which category's point range the patient's total point value fall, e.g., patient with 37 points is a Type 2 patient. Figure 4 presents the point ranges of the four patient categories.

APPENDIX C

PATIENT CLASSIFICATION SYSTEM

In developing a methodology for monitoring the quality of nursing care, one of the major problems was to accurately classify patients by the level of their needs. Unless the type and amount of care each patient requires can be defined, the quality of care the patient is receiving cannot be ascertained since the nursing process, and hence the criteria used to evaluate it, differ for different care levels. For instance, an intensive care patient requires extensive monitoring with regard to therapeutic or life supportive nursing activities, most of which would be inapplicable for a patient about to be discharged. In other words, to apply the same criteria for evaluating the quality of care given these two patients would be meaningless.

A definition for patient classes has been devised. Patients will be classified into four categories by degree of need.

- TYPE 1 Self-care patient. A patient who requires minimal supportive nursing care. For example, a patient who is ambulatory without assistance does not require frequent medications and/or treatments.
- TYPE 2 A partial-care patient who needs some nursing care, supervision, or some assistance ambulating and caring for his own personal hygiene. This patient is not undergoing many frequent or complex treatments or medications.
- TYPE 3 A complete-care patient who requires nursing personnel to initiate, supervise, and perform most of his activities or a patient who requires frequent and complex medications or treatments.
- TYPE 4 An intensive-care patient whose nursing care is so intricate or time consuming that he requires the equivalent of a full-time nurse at his side.

APPENDIX D

A copy of the Nursing Quality Monitoring Methodology may be obtained from the following:

> Medicus Systems Corporation 990 Grove Street Evanston, Illinois 60201

APPENDIX E

PROSPECTUS FOR THESIS APPROVAL FORM

has been successfully defended and approved by the members of the Thesis Committee.

This research is <u>xx</u> is not _____ exempt from approval by the Human Subjects Review Committee. If the research <u>is</u> exempt, the reason for its exemption is ______ because the study is in compliance with Category I of the Risk Categories, research involving the study of existing data.

Thesis	Committee:	But Claushun War Sul	, Chairperson
		Lefen a. Busk J.	Member
		Quede M. Bushes	Member
Date:	Jume 6, 1983		

_____, Dean, College of Nursing

Date:

APPENDIX F

TWU Texas Woman's University

P.O. Box 22479, Denton, Texas 76204 (817) 383-2302, Metro 434-1757

THE GRADUATE SCHOOL

July 15, 1983

Mrs. Maurene Middlebrooke 607 Grove Court Longview, TX 75601

Dear Mrs. Middlebrooke:

I have received and approved the Prospectus for your research project. Best wishes to you in the research and writing of your project.

Sincerely yours,

Pawlowski

Provost

ec

cc Dr. Anne Gudmundsen Dr. Beth Vaughan-Wrobel APPENDIX G
TEXAS WOMAN'S UNIVERSITY COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE UNIVERSITY OF TEXAS HEALTH CENTER AT TYLER

GRANTS TO <u>MAURENE DAWSON MIDDLEBROOKE</u> a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem.

Is there a difference in the quality of the nursing care on eight general

care units 6 months after a quality of nursing care monitoring program

was implemented?

The conditions mutually agreed upon are as follows:

- 1. The agency (may) (may not) be identified in the final report.
- The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
- 3. The agency (wants) (does not want) a conference with the student when the report is completed.
- 4. The agency is (willing) (unwilling) to allow the completed report to be circulated through interlibrary loan.
- 5. Other

Personnel Dat of Agency Signature of Faculty Advisor Signature Student of

*Fill out & sign 3 copies to be distributed: Originalstudent; lst copy-Agency; 2nd copy-TWU School of Nursing APPENDIX H

Percentage of Compliance With Each of the Six Standards of Care by Unit For Each Time Period

Standard I: The Plan of Nursing Care is Formulated

Unit No.	Pre-* Treatment	Mid-* Treatment	Post-* Treatment
1	61	73	65
2	53	55	73
3	55	71	64
4	54	74	70
5	61	65	69
6	53	62	78
7	55	49	60
8	63	64	70

Standard II: The Physical Needs of the Patient Are Attended

Unit No.	Pre- Treatment	Mid- Treatment	Post- Treatment	
1	77	86	95	
2	74	81	92	
3	81	86	92	
4	89	86	88	
5	83	82	96	
6	81	81	95	
7	83	83	96	
8	79	85	92	

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Standard	III: TA	he Non-Physical re Attended	Needs of the Patient	
Unit No.	Pre- Treatment	Mid- Treatment	Post- Treatment	
1	75	64	74	
2	70	74	84	
3	71	79	89	
4	61	63	89	
5	69	70	91	
6	61	63	74	
7	61	65	8.2	
8	70	74	85	
Standard	l IV: Ach Is	ievement of Nur Evaluated	sing Care Objectives	
Standard Unit No.	l IV: Ach Is Pre- Treatment	ievement of Nur Evaluated Mid- Treatment	sing Care Objectives Post- Treatment	
Standard Unit No.	l IV: Ach Is Pre- Treatment 47	ievement of Nur Evaluated Mid- Treatment 70	sing Care Objectives Post- Treatment 72	
Standard Unit No. 1 2	l IV: Ach Is Pre- Treatment 47 70	ievement of Nur Evaluated Mid- Treatment 70 57	Post- Treatment 72 75	
Unit No. 1 2 3	IV: Ach Is Pre- Treatment 47 70 75	ievement of Nur Evaluated Mid- Treatment 70 57 72	Post- Treatment 72 75 63	
Unit No. 1 2 3 4	IV: Ach Is Pre- Treatment 47 70 75 63	ievement of Nur Evaluated Mid- Treatment 70 57 72 63	Post- Treatment 72 75 63 63	
Standard Unit No. 1 2 3 4 5	IV: Ach Is Pre- Treatment 47 70 75 63 64	ievement of Nur Evaluated Mid- Treatment 70 57 72 63 82	Post- Treatment 72 75 63 63 87	
Standard Unit No. 1 2 3 4 5 6	IV: Ach Is Pre- Treatment 47 70 75 63 64 58	ievement of Nur Evaluated Mid- Treatment 70 57 72 63 82 52	Post- Treatment 72 75 63 63 87 67	
Standard Unit No. 1 2 3 4 5 6 7	IV: Ach Is Pre- Treatment 47 70 75 63 64 58 43	ievement of Nur Evaluated Mid- Treatment 70 57 72 63 82 52 63	Post- Treatment 72 75 63 63 87 67 61	

Standar	d V: Unit P tectio	rocedures Are n of All Pati	e followed for ents	the Pro-
Unit No.	Pre- Treatment	Mid- Treatment	Post- Treatment	
l	84	74	86	
2	71	83	75	
3	79	71	87	
4	84	86	82	
5	80	96	80	
б	66	75	79	
7	83	90	88	
8	73	83	81	
Unit No.	Servi Pre- Treatment	Ces Mid- Treatment	Post- Treatment	,
1	81	82	85	
2	82	80	81	
3	76	77	84	
4	76	80	82	
5	79	82	79	
б	74	75	83	
7	75	77	84	
8	78	78	87	

*Pre = data collected first month of monitoring program Mid = data collected halfway through study Post = data collected sixth month after monitoring pro-

gram began

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