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Case management and satisfaction with nursing care of patients hospitalized with congestive heart failure.

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CASE MANAGEMENT AND SATISFACTION WITH NURSING CARE OF PATIENTS HOSPITALIZED WITH CONGESTIVE HEART FAILURE

by

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ABSTRACT OF DISSERTATION
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The purpose of this study was to ascertain if there is a difference in patient satisfaction with nursing care when case management is utilized versus when a noncase management model of nursing practice is used. The Neuman Systems Model was the conceptual framework used to guide the study. An experimental, two group design, with postintervention testing was used. Thirty men and women, aged 47 to 92 years, who had been hospitalized with congestive heart failure comprised the convenience sample.

The subjects were randomly assigned to either an experimental (case management) group or a control (noncase management) group. The independent variable was the implementation of case management with the experimental group. The dependent variables were the three subscale scores and the total satisfaction scores obtained on the La Monica-Oberst Patient Satisfaction Scale.

Independent group t tests were used to test the differences in subscale and total satisfaction scores of the two groups. The mean scores for the three subscales and the total satisfaction scores were higher for the case management group. However, a statistically significant difference was found only in the interpersonal support subscale scores (p = .023).

The findings of this study support the conclusions that patient satisfaction with nursing care is greater with case management than with noncase management, especially in the area of perceived interpersonal support shown to the patient by nurses. The Neuman Systems Model was found to be a useful framework for developing critical pathways and guiding the implementation of case management.

Abstract Approved by: **Committee Chairman** ____________

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CHAPTER I

Introduction

Health care reform provides both a challenge and an opportunity for hospitals and other health care organizations to compete for the health care business in this nation. One major factor in the viability of hospitals is and will continue to be cost-effective provision of services. Case management has been shown to assist hospitals to improve their bottom line through appropriate utilization of resources, enhanced continuity of care, and decreased length of stay and cost per patient day (Ethridge & Lamb, 1989; McKenzie, Torkelson, & Holt, 1989; Newman, Lamb, & Michaels, 1991; Sinnen & Schifalacqua, 1991; Trella, 1993; Zander, 1988b).

Another major viability factor that hospitals are including in their marketing strategies is a focus on patients as active consumers who choose providers of the services they may need based on the facility's ability to meet their expectations. Many hospitals routinely solicit feedback from patients regarding their satisfaction with services received through the use of questionnaires, follow-up telephone calls, or visits from patient care representatives. Nursing care has been identified as the most important contributing factor in the overall

satisfaction or dissatisfaction with a hospital stay (Abramowitz, Cote, & Berry, 1987; Doering, 1983; McDaniel & Nash, 1990).

Although there are references in the literature to nurses' and physicians' satisfaction with case management as a nursing practice model, there is a paucity of references to studies done in regard to patients' satisfaction with nursing care when case management is utilized (McKenzie et al., 1989; Trella, 1993). Therefore, the focus of this study is patients' satisfaction with nursing care in the acute care hospital setting when case management is used.

Statement of the Problem

Congestive heart failure (CHF) has emerged as a major public health problem in the world today. In the United States, CHF is the single most common reason for hospitalization of patients over the age of 65 years (Francis, 1991; Jessup, Lakatta, Leier, & Santinga, 1992a). Additionally, a survey of 1985 hospital discharge records listed CHF as a secondary diagnosis for 1.7 million patients (Wright, 1990).

During the past 20 years, mortality rates from stroke and coronary artery disease have declined by more than 40%, while the mortality rate from CHF in persons older than 45 years of age has increased by 30%. The most significant increase in deaths occurs in those 65 years of age and older, with only a slight increase for persons aged 55-64 years and a decline for persons less than 55 years of age.

Approximately 50% of patients diagnosed with CHF will die within 5 years of the onset of signs and symptoms. Of those individuals with severe symptoms, 50% will die within 1 year and 70% within 3 years (Ghali, Cooper, & Ford, 1990).

Two factors that have been identified as accounting for the growing prevalence of CHF are an increasing average age of the population and a longer survival of persons with chronic heart disease (Ghali et al., 1990). These factors, along with improving medical therapy, lead to an increasing demand on health care facilities and personnel to provide needed care to these individuals. The economic implications for hospitals are explicated by the results of a report that show an average hospital length of stay of 8.08 days, a mean charge of $6,022, and a mean reimbursement of $3,300 for a patient hospitalized with CHF (Wright, 1990).

In today's health care climate, patients are no longer considered passive recipients of services, but are active consumers who choose the providers of the services needed. Patient satisfaction can be a valuable marketing tool for hospitals in maintaining and expanding their patient base (Abramowitz et al., 1987). Doering (1983) defines patient satisfaction as "a measure of the degree to which health care providers have been successful in meeting patient-defined needs and expectations" (p. 291). According to Nelson et al. (1991), hospitals use patient satisfaction to "measure the 'voice of the customer',

monitor long-term trends in quality, identify high-priority areas for improvement, and benchmark their results against the best achieved" (p. 278).

Several studies investigated the influence of specific services and factors on patient satisfaction with a hospital stay. Of all services and factors studied, nursing care was the most directly related to overall satisfaction with the hospital stay (Abramowitz et al., 1987; Doering, 1983; McDaniel & Nash, 1990). Other contributing factors were food quality, noise, physical surroundings, and adequate communication of health care information.

With the increased competition for patients as consumers of health care services, providers of these services are very interested in identifying and promoting factors that increase patients' satisfaction with the facility and its offered services. Nursing service, as the major provider of patient care and the largest single component of a hospital's budget, is the vital element in the development and implementation of case management in the hospital setting. Additionally, the nursing shortage has necessitated the development of an alternative to the primary nursing care delivery system (Schmidt, 1992). While case management is readily adaptable to primary care nursing, it is also compatible with team nursing, which relies on care provision by registered nurses, licensed practical nurses, and nurse technicians or assistants (Del Togno-Armanasco, Olivas, & Harter, 1989; Loveridge,

Cummings, & O'Malley, 1988; Lulavage, 1991). Case management, in turn, provides nurses an opportunity for professional growth and accountability, additional and alternative career options in advanced and collaborative practice, and a means of empowerment through positive contribution to the facility's bottom line (Cronin & Maklebust, 1989). A finding of higher satisfaction ratings by patients who receive case management as compared to patients for whom a noncase management model is used would further validate case management as a beneficial and desirable practice model.

Purpose of the Study

The purpose of this study was to ascertain if there is a difference in patient satisfaction with nursing care when case management is utilized versus when a noncase management model of nursing practice is used.

Hypothesis

The study examined the following hypothesis and subhypotheses: There will be greater overall satisfaction for patients receiving nursing care utilizing case management as the nursing practice model than with a noncase management model--(a) there will be less patient dissatisfaction when case management is utilized versus when a noncase management practice model is used, (b) there is greater perceived interpersonal support shown by nurses toward patients with case management than with noncase management, and (c) patients' general impressions of nurses

are better when case management is utilized than when a noncase management nursing practice model is used.

Assumptions

Inherent in this study were the following basic assumptions held by the investigator: (a) the subjects understood and responded truthfully to the questions on the La Monica-Oberst Patient Satisfaction Scale (LOPSS); (b) the responses to the questions on the LOPSS were based only on the current hospitalization experience; (c) the La Monica-Oberst Patient Satisfaction Scale provided an accurate measurement of patients' satisfaction with their nursing care; (d) the critical pathway developed provided appropriate guidance for the provision of nursing care for the patients assigned to the case management group; (e) other members of the multidisciplinary care team followed the critical pathway in providing care for those patients in the case management group; and (f) nursing staff providing nursing care to the patients in the noncase management group were not influenced, positively or negatively, by the concurrent use of case management with the patients in the case management group.

Definition of Terms

Terms are defined as follows for the purpose of this study.

Case Management--patient-focused strategies to coordinate care while "maintaining a balance between outcome, cost, and process" (Bower, 1992, p.2). Operationally, case management is the nursing practice

model utilized with selected subjects throughout their hospitalization, from admission to discharge. The investigator functioned as the case manager and planned, implemented, coordinated, evaluated, and revised the care provided in collaboration with the physician(s), direct caregivers, appropriate ancillary personnel, and the patient and/or family. A critical pathway developed by the investigator for congestive heart failure and individualized to the specific patient was used as a guide for the care delivered.

Satisfaction (With Nursing Care)--"the degree of congruency between a patient's expectations of ideal nursing and his perception of the real nursing care he receives" (Risser, 1975, p. 46). Operationally, satisfaction with nursing care is the total score obtained on the La Monica-Oberst Patient Satisfaction Scale. The total score was obtained by adding the subscores for three factors of nursing care labeled dissatisfaction, interpersonal support, and good impression.

Patients Hospitalized With Congestive Heart Failure--Congestive heart failure is a complex clinical syndrome characterized by an "inadequate cardiac output that occurs when the heart is unable to pump enough blood to meet the metabolic requirements of body tissues" (Bousquet, 1990, p. 35). Operationally, patients hospitalized with congestive heart failure (CHF) are those patients admitted to the selected facility with either the primary diagnosis of CHF or with a secondary diagnosis of CHF plus one or more

symptoms indicative of CHF on admission. These symptoms include: (a) dyspnea, (b) orthopnea, (c) edema or ascites, (d) increased cardiac and/or respiratory rate, (e) jugular venous distention, or (f) fatigue.

Conceptual Framework

The conceptual framework for this study is based on the Neuman Systems Model. The Neuman Systems Model (NSM) was developed in response to graduate students at the School of Nursing, University of California, Los Angeles, who expressed a need for wider course content so they could understand the full extent of nursing problems before focusing on specific nursing problems (Fulbrook, 1991). The conceptual model was first presented in 1972 in an article entitled,"A Model for Teaching Total Person Approach to Patient Problems" (Fawcett, 1989). Although initially developed for curriculum application, the model has subsequently been applied to nursing practice, research, and administration.

In developing her nursing model, Neuman drew heavily on the concepts and principles of Ludwig von Bertalanffy's general systems theory. According to Bertalanffy (1968), systems are wholes composed of related parts, between which interaction occurs to a major degree. Furthermore, there are principles or laws that apply to all systems regardless of their specific elements and goals.

Neuman (1989) describes nursing as both a whole system and as a part of a larger whole. As a whole system, nursing has two major components: education and practice.

These can be further divided into levels of education and specialization in practice. As a part of a larger whole, nursing is a component of the health care system and is related to, affects, and is affected by other disciplines within the system, all of which have the common goal of maintaining the integrity of the client/client system.

The Neuman Systems Model is an open systems model that focuses on the "reactions of an individual to environmental stressors and the factors necessary to adapt to or reconstitute from these stressors" (Fulbrook, 1991, p. 31). According to Neuman (1989), the model components are specifically related to the four major concepts of nursing: client, environment, health, and nursing.

Client

The client, whether an individual, family, group, or community, is viewed as a dynamically organized system (Ross & Bourbonnais, 1985). The individual client is "viewed wholistically and described as a multidimensional composite of physiological, psychological, sociocultural, developmental, and spiritual variables" (Foote, Piazza, & Schultz, 1990, p. 302). The client or client system is depicted as a central core surrounded by concentric circles. The central core consists of the basic survival factors shared by all human beings, as well as unique features or characteristics of the individual.

The concentric circles surrounding the central core function as protective mechanisms against any assault to the integrity of the basic structure. The outermost circle

is the flexible line of defense, which acts as a protective buffer for the client's normal or stable state by attempting to prevent stressors from invading the client system. This defense mechanism has the greatest potential for change and can be strengthened by health-promoting behaviors, such as rest, nutrition, and exercise (Ross & Bourbonnais, 1985).

The normal line of defense lies within the flexible line of defense and represents the client's usual or steady wellness state that has developed over time. Invasion of this line by a stressor due to ineffectiveness of the flexible line of defense results in a stress reaction or symptomatology. Variables, such as coping and problem solving abilities, life-style, developmental and spiritual factors, intelligence, and socialization, are included in this mechanism (Neuman, 1989; Ross & Bourbonnais, 1985).

The lines of resistance are represented by a series of broken lines surrounding the basic structure. This homeostatic mechanism determines the client's response to the particular stressor and attempts to stabilize the client system and return to the usual wellness state. Some of the internal factors comprising the lines of resistance include the immune response to infection, the clotting response to bleeding, and the psychological response to bereavement (Fulbrook, 1991; Neuman, 1989). If the lines of resistance are ineffective, intervention is necessary to prevent the deterioration and possible death of the client.

Environment

The environment is defined as all "internal and external factors or influences surrounding the identified client or client system" (Neuman, 1989, p. 31). The client is in constant interaction with the environment and this interaction may be either positive or negative in its effect on the client. Neuman identifies three categories of environment. The internal environment consists of all of the forces or influencing factors occurring or contained within the client or client system and equates with intrapersonal stress factors. The external environment consists of those forces or influencing factors that are located outside the boundary of the client or client system. Both interpersonal and extrapersonal stress factors are included in this environment. The created-environment is "dynamic and represents the client's unconscious mobilization of all system variables, including the basic structure energy factors, toward system integration, stability, and integrity" (Neuman, 1989, p. 32). Although unconsciously developed, the created-environment functions in a purposeful manner to protect the client system. It consists of intrapersonal, interpersonal, and extrapersonal stress factors.

Health

Neuman (1989) equates health with wellness and describes health as being on a continuum and dichotomous with illness. Neuman (1990) further defines health on a continuum as the "degree of client wellness that exists

at any point in time, ranging from an optimal wellness condition, with available energy at its maximum, to death, which represents total energy depletion" (p. 129). The primary source of power by which the client system achieves an optimal level of health or wellness is energy, which is innately or genetically acquired and can be generated and stored or expended for the purpose of maintaining system function (Neuman, 1990). Health promotion activities are, therefore, aimed at conservation and/or regeneration of the energy levels of the client.

Nursing

The goal of nursing is to assist the client to retain, attain, or maintain an optimal level of health or wellness and system stability through the use of purposeful interventions to strengthen adaptive mechanisms and decrease the number and effect of stressors on the client system (Foote et al., 1990; Ross & Bourbonnais, 1985). To achieve this goal, nurses use the nursing process with the client as an active participant. Three steps or components of the nursing process are delineated in the Neuman Systems Model: nursing diagnosis, nursing goals, and nursing outcomes (Fawcett, 1989).

Nursing diagnosis includes the acquisition of a data base through the identification of actual or potential stressors (intrapersonal, interpersonal, and extrapersonal) and their effect on the client with consideration of the five variables (physiological, psychological, sociocultural, developmental, and spiritual) and their

interactions. Formulation of a nursing diagnostic statement, which includes actual or potential variances from wellness, available resources, and hypothetical interventions to achieve stability or wellness, concludes the first step of the nursing process (Fawcett, 1989).

The second step is formulation of nursing goals that are negotiated with the client to correct any variances from wellness perceived either by the client or the nurse. Intervention strategies designed to achieve the formulated goals are also developed and negotiated with the client (Fawcett, 1989; Fulbrook, 1991).

The third step in the nursing process is implementation of the intervention strategies formulated in the previous step to achieve the desired goals. These intervention modalities include primary prevention, secondary prevention, and tertiary prevention as intervention. This final step is complete when the results of the interventions have been evaluated to determine if the goals have been achieved or if revisions in goals and interventions are needed (Fawcett, 1989; Foote et al., 1990).

Use of the Neuman Systems Model in This Study

The Neuman Systems Model was the conceptual guide for this study. The client is the patient hospitalized with congestive heart failure. Health for these patients is the reversal of cardiac decompensation and return to optimal cardiac functioning. Nursing is provided utilizing case

management as the nursing practice model to plan and guide the care of the patients during their hospitalization.

A critical pathway for patients with congestive heart failure was developed by the investigator to provide the structure for the implementation of case management with the selected subjects. Specific components of the Neuman Systems Model were utilized in the development of this critical pathway. The components used were: stressors, primary prevention, secondary prevention, and tertiary prevention.

Stressors are defined by Neuman (1989) as tension-producing stimuli or forces that may occur within both the internal and external environmental boundaries of the client/client system and have the potential for causing disequilibrium. The client may experience more than one stressor at any given time, and any stressor influences the client's reaction to all other stressors to some degree. Although stressors are considered neutral, the outcome of an encounter with a stressor may be either positive or negative, beneficial or noxious. Factors that affect this outcome include the time of stressor occurrence, past and present condition of the client, the nature and intensity of the stressor, and the amount of energy required by the client to adjust to the stressor (Fawcett, 1989; Neuman, 1989).

Neuman (1989) classifies stressors as intrapersonal, interpersonal, and extrapersonal in nature. Intrapersonal stressors are internal environmental interaction forces

that occur within the client/client system boundary. Interpersonal stressors are external environmental interaction forces that occur outside the client/client system boundary at proximal range. Extrapersonal stressors are external environmental interaction forces that occur outside the client/client system boundary at distal range.

Stressors for the patients hospitalized with congestive heart failure include factors that precipitated cardiac decompensation and the need for hospitalization, as well as those patient needs and problems identified throughout the hospital stay. Stressors that can precipitate decompensation include the following: (a) injury or concomitant disease processes; (b) changes in diet; (c) failure to properly take prescribed medications; (d) physical, emotional, or psychological stress; and (e) environmental factors. Intrapersonal stressors that may be identified as patient needs or problems include: (a) respiratory distress; (b) fatigue or activity intolerance; (c) varying degrees and sites of edema; (d) pain; (e) anxiety; (f) cardiac dysrhythmias; and (g) knowledge deficit related to heart failure causes, symptoms, and management.

The actions utilized by nurses within the Neuman Systems Model to decrease the stressors a client may experience or to reduce the deleterious effects of particular stressors on the client/client system are the primary, secondary, and tertiary preventions as

intervention. The interventions can be initiated at any point at which a stressor is suspected or identified.

Primary prevention as intervention is implemented when the risk of a stressor is present and known but a reaction has not yet occurred. The goal of primary prevention is wellness retention. This is achieved by strengthening the client's flexible line of defense so the normal line of defense can be protected from invasion by stressors. Specific nursing activities delineated in the critical pathway for use with patients in the case management group include health education, elimination of risk factors, and strengthening resistance by diet improvement, ensuring adequate rest and sleep, and utilization of effective stress management and coping mechanisms (Neuman, 1989; Ross & Bourbonnais, 1985).

Secondary prevention as intervention is initiated when a reaction to a stressor has occurred. The goal of secondary prevention is wellness attainment. This is achieved by strengthening the lines of resistance to protect the basic structure. Internal and external resources of the client, as well as the meaning of the experience to the client, are assessed and needs related to symptoms or treatment responses are prioritized. Specific nursing activities focus on strategies for reversing maladaptive responses by maximizing the internal and external resources of the client/client system and the situation (Fawcett, 1989; Ross & Bourbonnais, 1985). The critical pathway specified the implementation of the

following nursing actions according to the time line and the occurrence of specific symptoms: (a) medication administration, (b) dietary restriction, (c) monitoring of daily weights, (d) positioning, (e) assisting with activities of daily living, (f) skin care, and (g) continuation and reinforcement of patient/family education.

Tertiary prevention as intervention is initiated when some degree of client system stability and reconstitution has occurred following treatment. The goal of tertiary prevention is wellness maintenance. This is achieved by supporting existing strengths and conserving client system energy to prevent additional reactions to stressors or regression from the current wellness level. "Tertiary prevention tends to lead back, in a circular fashion, toward primary prevention" (Neuman, 1989, p. 37). Specific nursing strategies include motivation techniques, progressive goal setting, and assisting the client to learn how to adapt to a new lifestyle (Ross & Bourbonnais, 1985). Nursing activities that constitute tertiary prevention delineated in the critical pathway include referral for home health care, assistance for the patient/family in obtaining needed durable medical equipment, and reinforcement of previous education.

Significance of the Study

Knowledge gleaned from this research should have implications for nursing education, research, and practice. Nursing curriculum related to case management is

currently being developed and/or taught in only a few schools of nursing (American Nurses' Association [ANA], 1988). Determination of a positive effect of case management on patient outcome, such as satisfaction with care, may encourage the development of additional programs or the expansion of existing programs in schools of nursing.

There is a need for research in the areas of advancement of nursing practice and nursing's contribution to quality patient outcomes. The majority of existing research on case management and patient outcomes relates to financial considerations, such as length of stay, cost per patient day, and total charges. While these are certainly important factors for consideration, additional research is needed to identify and describe qualitative outcomes of care when case management is utilized.

Nursing case management can advance the practice of nursing by improving the status of nursing in the health care hierarchy through its positive effect on the facility's bottom line. Additionally, case management provides a means of empowerment for nurses and an opportunity for professional growth and career advancement in the role of the case manager.

CHAPTER II

Review of Literature

The focus of this study is the effect of case management on patients' satisfaction with their nursing care. Review of the literature will include historical and recent research on the concepts of case management and patient satisfaction. Additionally, current research on congestive heart failure will be reviewed to identify therapeutic strategies that can be utilized in the development of an appropriate critical pathway for use in the implementation of case management with the target population.

Congestive Heart Failure

Pathophysiology, Compensatory Mechanisms, Classifications, and Clinical Signs and Symptoms

Congestive heart failure is a complex clinical syndrome characterized by an "inadequate cardiac output that occurs when the heart is unable to pump enough blood to meet the metabolic requirements of body tissues" (Bousquet, 1990, p. 35). This inadequate cardiac output is a result of either a greatly reduced or increased blood supply to the heart, an obstruction of blood flow out of the heart, an injury to the heart, or a significant increase in the metabolic requirements of the individual (Feagins & Daniel,

1991). Although the most common underlying cause is compromised myocardial function related to coronary artery disease, other common clinical causes include hypertension, cardiomyopathy, congenital heart defects, valvular heart disease, and rheumatic heart disease (Letterer, Carew, Reid, & Woods, 1992).

Factors that determine cardiac output include preload, afterload, contractility, and heart rate (Keller & Lamberg, 1990). Preload is the end-diastolic volume in the ventricles and represents the stretch of the ventricles during diastole (Letterer et al., 1992). An increase in preload occurs when the volume of blood being returned to the heart increases. Afterload is the opposing pressure within the aorta and peripheral arteries the ventricles must overcome to pump blood out of the ventricles during systole (McCauley, Isacson, & Schulz, 1984). Both compensatory mechanisms and therapeutic strategies have as their goal the manipulation or alteration of the factors influencing cardiac output.

Three major compensatory mechanisms occur as a result of inadequate cardiac output in CHF: (a) the Frank-Starling mechanism, (b) neurohormonal responses, and (c) myocardial hypertrophy (Bousquest, 1990; Fukuda, 1990; Letterer et al., 1992). The Frank-Starling mechanism increases end-diastolic volume, or preload, in an attempt to increase the force of systolic contraction and the resultant cardiac output. A decreased stroke volume stimulates the sympathetic nervous system to release

catecholamines that increase contractility and heart rate. Additionally, vasoconstriction is triggered and blood flow is shunted from peripheral tissues to the vital organs to maintain perfusion. Myocardial hypertrophy occurs as a result of cell enlargement to augment the mass of contractile tissue and to increase cardiac output. This adaptive mechanism occurs at a slower rate and over a longer period of time than the previous compensatory mechanisms. While initially effective, the cardiac cells ultimately deteriorate and die and the heart fails as a pump. Elderly patients are especially susceptible to rapid cardiac decompensation triggered by seemingly minor illnesses and dietary indiscretions due to age-associated cardiac and renal changes (Jessup, Lakatta, Leier, & Santinga, 1992a, 1992b).

McCauley et al. (1984) describe one method of classifying CHF based on the site of heart failure--left-sided, right-sided, or both left- and right-sided failure. In left-sided failure, the left ventricle is dilated from the large volume of blood remaining in it and is unable to accept blood from the left atrium. Because the left atrium is unable to eject all of its blood, it becomes dilated and cannot accept the full volume of blood from the pulmonary veins. Pulmonary congestion results and causes dyspnea, the major clinical symptom of left-sided failure. In the early stages of CHF, the individual may complain only of orthopnea or exertional dyspnea. Other signs and symptoms include: (a) tachycardia, which occurs

as a compensatory sympathetic response; (b) fatigue; (c) muscle weakness; (d) decreased renal function, which can result in reduced urinary output and dark, concentrated urine; (e) edema and weight gain; and (f) neurological changes, such as a shortened attention span, memory impairment, depression, irritability, restlessness, and anxiety.

Right-sided heart failure often follows left-sided failure due to the heart having to pump against the increased resistance in the pulmonary system. Occasionally, right-sided failure results from cor pulmonale, which is hypertrophy of the right ventricle caused by primary pulmonary hypertension. Signs and symptoms of right-sided heart failure include: (a) dependent edema, which may progress to anasarca; (b) jugular venous distention; (c) hepatomegaly and splenomegaly; (d) anorexia, nausea, and abdominal pain caused by congestion of the viscera; (e) fatigue caused by low cardiac output; and (f) ascites from high systemic venous pressure or hepatic dysfunction.

Another method of classifying heart failure is according to the cardiac phase in which the dysfunction occurs (Fukuda, 1990; Keller & Lamberg, 1990; Smith & Kelly, 1991). Systolic dysfunction, or pump failure, is characterized by large, dilated ventricles, decreased myocardial contractility, and a diminished ejection fraction. Diastolic dysfunction, or filling failure, is characterized by smaller heart chambers and hypertrophied,

poorly compliant ventricles. Many patients, especially the elderly, have elements of both types of failure, either left- and right-sided failure or systolic and diastolic dysfunction, depending on the classification used.

Therapeutic Strategies

The ultimate goals of treatment of congestive heart failure are to improve the functioning of the ailing heart, to reduce morbidity, and to prolong life. More specific goals include: (a) eliminating or minimizing the underlying cause, if possible; (b) improving the heart's pumping ability by increasing myocardial contractility and controlling heart rate; and (c) decreasing the amount of workload on the heart by decreasing preload and afterload (Bousquet, 1990; Feagins & Daniel, 1991; Letterer et al., 1992). Management of CHF, especially in the elderly, requires careful elimination or control of factors that may precipitate decompensation, good patient education and promotion of patient cooperation with necessary life-style changes, and judicious use of medications with monitoring of therapeutic levels and side effects (Jessup et al., 1992b).

A combination of nonmedication and medication therapy is usually used as failure progresses. Nonmedication therapy includes limitation of physical activity, promotion of rest, reduction of anxiety and stress, and modification of diet. Maintaining physical activity or moderate exercise is both physically and emotionally beneficial. Education should focus on recognition of activity

limitations, conservation of energy, and development of a regular schedule of rest and exercise, such as a cardiac rehabilitation program.

Promotion of rest can be accomplished by elevating the head of the bed to prevent orthopnea, scheduling diuretic administration to minimize sleep disturbances due to nocturia, and teaching the patient relaxation techniques. These relaxation techniques, along with medication and biofeedback, are also useful in reducing stress and anxiety, which may precipitate or exacerbate decompensation or delay recovery. It is important for the individual to identify stressors and eliminate or minimize them. Education should focus on prevention, recognition, and management of CHF symptoms and development of appropriate mechanisms to effectively cope with necessary life-style changes.

The major diet modification utilized is restriction of sodium intake. Reduction of dietary sodium is usually initiated early in the management of CHF to help decrease total vascular volume, which decreases preload and reduces myocardial oxygen demand. Although the specific limit of daily sodium intake is dependent on the severity of the failure and the degree of myocardial dysfunction, the usual prescribed limit is 2 g/day in mild to moderate CHF (Bousquet, 1990; Feagins & Daniel, 1991). Maintaining adequate nutrition is important and may be more easily accomplished if the patient eats small amounts frequently. Eating small amounts at a time is less fatiguing, results

in less bloating, and requires less blood for digestion, which reduces the heart's workload (Letterer et al., 1992). Education should focus on assisting the patient to be aware of and avoid hidden salt in prepared foods and over-the-counter medications, to read and correctly interpret content labels, and to weigh daily and notify the physician of weight gains of more than a pound on each of 3 consecutive days (Bousquet, 1990).

Medications most frequently used in the treatment of CHF include diuretics, vasodilators, and inotropic and sympathomimetic agents. The primary action of diuretics is the reduction of the left diastolic filling pressure, or preload, by restriction of the amount of fluid entering the left ventricle. Reduction of preload allows the heart to function more effectively as a pump and may slow the rate at which dilation of the cardiac chambers progresses (Feagin & Daniel, 1991; Smith & Kelly, 1991). Diuretics may be ordered singularly or in combination, but are almost always used concomitantly with sodium restriction.

Vasodilators decrease both preload and afterload by relaxing vascular smooth muscle. This action results in an improvement of the heart's pumping ability. Inotropic drugs also improve the effectiveness of the heart's pumping ability by reducing the diastolic pressure in the left ventricle and increasing contractility of the myocardium. As a result, cardiac output is increased. Education related to pharmacologic intervention should focus on the importance of adhering to the prescribed medication

regimen, potential side effects or toxicity signs and symptoms that necessitate notification of the physician, and avoidance of self-medication with over-the-counter products which may interfere with or potentiate the actions of the prescribed medications.

Revisions in drug therapy may be necessary when drug resistances occur, when the patient develops concomitant illnesses or age-asscciated changes in organ functioning, or when the failing heart further deteriorates. Therapeutic strategies used in the management of CHF, whether generic nonpharmacologic therapy or specific and individualized pharmacologic therapy, have as their goal the optimization of the ability and effectiveness of the heart to function.

Patient Satisfaction

Descriptions and Dimensions of Patient Satisfaction

Patient satisfaction has been used both as a dependent variable and as an independent variable in different studies. As a dependent variable, patient satisfaction is a measure of the outcome of care or services provided. As an independent variable, patient satisfaction has been used as a predictor of specific health behaviors, including the choice of a particular provider, the intent to continue the use of that provider's services in the future, and even the patient's level of compliance with prescribed therapies (Abramowitz et al., 1987; Linn, 1975; Zastowny, Roghmann, & Hengst, 1983).

Ware, Davies-Avery, and Stewart (1978) conducted a review of 111 articles on patient satisfaction published between 1951 and 1976 to ascertain the following: (a) definition and identification of dimensions of patient satisfaction, (b) evaluation of the state of the art of patient satisfaction measurements, and (c) assessment of the usefulness of patient satisfaction as an independent and dependent variable in health care research. Based on the review, a taxonomy of patient satisfaction was proposed that identifies and defines the major characteristics of health care providers and services that influence patient satisfaction.

Eight dimensions constituting the primary sources of satisfaction and dissatisfaction are included in the taxonomy: (a) art of care, (b) technical quality of care, (c) accessibility and convenience, (d) finances, (e) physical environment, (f) availability, (g) continuity, and (h) efficacy and outcomes of care. The art of care pertains to the amount of caring demonstrated by the care provider and includes attributes such as concern, sincerity, and patience. Technical quality of care refers to the skills and abilities of the providers and includes accuracy, experience, thoroughness, level of training, and adherence to high standards. Accessibility and convenience include all of the factors involved in arranging to receive medical care, such as proximity, waiting time, convenience of location, and hours of operation. Finances include the cost of treatment, flexibility of payment plans, and

acceptance of insurance coverage. Physical environment refers to the general pleasantness and comfort of the environment in which the care is delivered. Availability focuses on the adequacy of the number of providers and facilities in the area. Continuity of care is the delivery of care by the same facility or provider on an ongoing basis. Efficacy and outcomes of care refer to the perception that specific care providers or treatment regimens are useful or helpful in improving or maintaining health status (Megivern, Halm, & Jones, 1992; Ware et al., 1978).

An analysis of the correlation of demographic and socioeconomic variables with patient satisfaction was included in the study by Ware et al. (1978). Significant findings include the following: (a) older persons were more satisfied with the care provided; (b) less educated persons were less satisfied with care in general and the conduct of the provider; (c) women were generally more satisfied with care received than men; (d) persons at higher occupational levels were more satisfied with medical care; (e) family size was inversely related to satisfaction with access to care; and (f) there were no trends identified with marital status, race, or social class.

Patient Satisfaction With Nursing Care

Risser (1975) conceptualizes patient satisfaction with nursing care as the "degree of congruency between a patient's expectations of ideal nursing and his perception of the real nursing care he receives" (p. 46). Key

components of patient satisfaction with nursing care identified by Risser include the personalities of the nurses, nurse-patient interpersonal relationship, the professional competence of the nurse, and the patient's perception of the quality of nursing care received. Data from measurements of patient satisfaction with nursing care have been utilized as follows: (a) to reinforce positive staff behaviors; (b) to identify opportunities to improve care and prevent problems from recurring; (c) to delineate patient teaching priorities in clinical practice; (d) to assist nurses in identifying areas of practice that warrant further investigation; (e) to justify changes in care delivery systems; and (f) to evaluate the effectiveness of structure and process changes or improvements in nursing practice, including staffing patterns, unit design, and teaching programs (Megivern et al., 1992).

Studies have shown that, of all factors considered, nursing care was the one most directly related to overall satisfaction of the patients with their hospitalization. The fact that nursing care has a greater impact on inpatient satisfaction than medical care is thought to be due to the following factors: (a) nurses spend a much greater period of time with the hospitalized patient than the physician does; (b) patients often do not associate their physician with the hospital, while the nurse is viewed as an employee of the hospital; and (c) patients usually choose their physicians and have a strong loyalty and commitment to them, but very seldom have a choice of

nurses assigned to them. Unfortunately, many times the nurses are held responsible for factors that have little or nothing to do with nursing care, such as noise levels, cleanliness, and unpleasantness of exams or therapies (Abramowitz et al., 1987; Doering, 1983).

Measurements of Patient Satisfaction

The increased focus on patient satisfaction as an outcome indicator of care and a predictor of health care provider choices has precipitated the development of instruments to measure patient satisfaction with specific aspects of care and services in a variety of settings. Risser (1975) developed an instrument to measure patient satisfaction with nurses and nursing care in primary care settings outside the hospital. The dimensions selected as appropriate divisions of nursing behavior included: (a) technical-professional behavior of the nurse, such as nurse knowledge, physical care for the patient, and expertise in implementing medical care; (b) intra-interpersonal attributes and function of the nurse, which included personality characteristics (intrapersonal) and social aspects of nursing (interpersonal); (c) trusting relationship, which referred to the nurse's communication of interest in the patient, sensitivity to people and their feelings, and listening to patient problems; and (d) educational relationship or the exchange of information between the patient and nurse.

In the initial trial, 58 items were assigned to one of the four content dimensions and compiled into a

questionnaire using the Likert method for attitudes measurement. After responses were analyzed, a revised questionnaire was developed for the second trial. This questionnaire consisted of 27 items assigned to one of three subscales: (a) technical-professional, with 8 items; (b) educational relationship, with 8 items; and (c) trusting relationship, with 11 items. Omission of two items after data analysis resulted in a final 25-item questionnaire. Respondent scores indicated more satisfaction with nurses and nursing behavior in the professional-technical area than in the trusting relationship area. The most dissatisfaction with nurses and nursing behavior was expressed in the area of educational relationship. A recommendation made by Risser (1975) for future development and use of the instrument was the expansion and redefinition of the content dimensions and their respective items as the nursing role is broadened and nurses function more independently and with greater responsibilities.

Hinshaw and Atwood (1982) developed the Patient Satisfaction Instrument (PSI) to measure patient satisfaction with inpatient nurses and nursing care. The instrument was basically Risser's (1975) patient satisfaction instrument with revision of one item. The conceptual framework, dimensions of patient satisfactions, and instrument structure remained the same. The PSI was tested using successive samples of four different inpatient, medical-surgical sets of subjects. Data

analysis from the four studies suggests acceptable levels of both validity and reliability of the PSI and, therefore, illustrates precision by replication.

A study conducted by Ventura, Fox, Corley, and Mercurio (1982) used patient satisfaction as a dependent variable to evaluate primary nursing. A secondary purpose of the study was to determine the appropriateness of the Risser Patient Satisfaction Scale, with the revisions by Hinshaw and Atwood (1982), for assessing the effectiveness of primary nursing. The results of the study failed to show significant differences between the primary nursing unit and the control (team nursing) unit on any of the subscales or the total scale at the 0.05 level. A recommendation made for future study was the need to develop an appropriate measure of patient satisfaction that is capable of detecting potential differences between nursing units utilizing different nursing care models.

La Monica, Oberst, Madea, and Wolf (1986) developed an instrument to measure hospitalized patient satisfaction with nursing care in an oncology setting. Risser's (1975) definition of satisfaction with nursing care, conceptual framework, and dimensions of nursing care were maintained during the initial tool development. Items from the Risser scale were revised and additional items generated in the three dimensions to reflect nursing behaviors expected in an acute care setting. The initial instrument contained a total of 50 items.

Results of the first study led to the deletion of 8 of the 50 original items, leaving 42 total items: 14 technical-professional behaviors, 18 items in the trusting relationship category, and 10 education behaviors. Additional studies were performed utilizing the La Monica-Oberst Patient Satisfaction Scale (LOPSS). As a result of these subsequent studies, the original three dimensions of nursing care were replaced with three factors that emerged from factor analysis procedures. These factors were designated as follows: (a) dissatisfaction, with 17 items; (b) interpersonal support, with 13 items; and (c) good impression, with 11 items. Although the LOPSS was developed for use with cancer patients, the instrument may also be valid for other populations of hospitalized patients due to the absence of specifically cancer-related content in the items (La Monica et al., 1986).

Because of the tremendous increase in the development of instruments to measure patient satisfaction with nursing care (PSNC), McDaniel and Nash (1990) developed a Compendium on Instruments Measuring Patient Satisfaction With Nursing Care. Instruments included in the compendium were limited to tools for adult populations, covering the years from 1970 through 1989, published in U.S. journals and unpublished theses and dissertations, and containing specific items about the patient's satisfaction with nursing care. Of the 21 instruments meeting the established criteria, 5 contained items that measured only nursing care, whereas the remaining contained items that

addressed nursing care in the context of health care and included other personnel. Components of the compendium include the following: (a) the name of the tool, date developed, and developer; (b) purpose for which the tool was developed; (c) a brief description of the tool, including number of items, administration time, item type, method of administration, and number of subscales; (d) psychometrics, restricted to reliability and validity; and (e) availability and copyright information.

Case Management

Historical Perspective, Definitions, and Descriptions

References to case management are not new in health care literature. According to Kelly (1992), the concept of case management stems from public health nursing, social work, and community mental health services. Since the early 1900s, the focus of public health nursing has been community service coordination. Following World War II, the concept of a continuum of care was used to describe the extended community services that were necessary to provide care for discharged psychiatric patients. The term case management first appeared in social welfare literature in the 1970s and was followed closely by articles in nursing literature (ANA, 1988).

Case managers from a variety of disciplines have been utilized in different settings to accomplish specific goals, including modification of hospital and nursing home use in the elderly, provision of appropriate transitional care from hospital to home, and improvement of quality of

care in community settings. Lamb (1992) identifies three distinct models of case management at present: (a) hospital-based models in which care and services are coordinated for high-risk individuals within the hospital, (b) hospital-to-community models in which coordination extends across acute care and long-term settings, and (c) community-based models in which nurse case managers provide coordination of care and services in the individual's home and community setting. The current emphasis on case management in the community setting is a consequence of a rapidly growing elderly population (many with multiple chronic disabilities), dramatic increases in health care and long-term costs, efforts to control these escalating costs, and demands for viable alternatives for preventing institutionalization of the elderly (McIntosh, 1987; Parker et al., 1990).

Case management in the hospital setting has been developed in response to "increased complexity and severity of illness, constraints of prospective reimbursement systems and competition within health care communities" (Robinson, Robinson, & Lewis, 1992, p. 182). To remain competitive in the health care marketplace, hospitals have to develop a bottom-line management orientation that focuses on the difference between the costs of providing services and the return received. Case management, utilizing a collaborative and multidisciplinary approach, is proposed as the care delivery model that can best assist hospitals in their quest for continuous improvement and

achievement of cost-effective accountability (Brockopp, Porter, Kinnaird, & Silberman, 1992; Olivas, Del Togno-Armanasco, Erickson, & Harter, 1989a, 1989b).

A review of the literature reveals not only a number of definitions for case management, but also a variety of synonymous concepts. These concepts include service coordination, service management, service integration, case coordination, care coordination, continuity coordination, coordinated care, care management, resource management, and utilization management. Managed care is the concept most frequently found in the literature in conjunction with case management. Some authors use case management and managed care interchangeably (Del Togno-Armanasco et al., 1989; Dunston, 1990; Sinnen & Schifalacqua, 1991). Others clearly differentiate the two concepts (Fondiller, 1991; Kelly, 1992; Marr & Reid, 1992; Zander, 1988c, 1990a, 1990b).

The Managed Care/Case Management model proposed by Del Togno-Armanasco et al. (1989) is defined as a "methodology for organizing patient care through an episode of illness so that specific clinical and financial outcomes are achieved within an allotted time frame" (p. 27). According to Marr and Reid (1992), managed care is a "method of managing or guiding a patient's care through a hospital stay," while case management is a

> patient care delivery model that encompasses the essence of managed care but necessitates appointment of a case manager to be accountable for the activities and outcomes of a specific case type or patient population. (pp. 2-3)

Zander (1990b) differentiates the two concepts as follows, "simply stated, Managed Care provides continuity of plan by linking tasks, shifts, and departments. Case Management provides continuity of provider by linking people across clinical settings" (p. 1).

Nursing Case Management

The purpose of nursing case management is the simultaneous enhancement of quality patient care and promotion of cost effectiveness (Smith, 1993). Trella (1993) defines nursing case management as the "systematic process of assessment, planning, service coordination and/or referral through which the multiservice needs of the client are met" (p. 20). Nursing case management is defined by Zander (1988b) as "attempts to connect previously unconnected parts of the health care system to form a continuum of care" (p. 1).

The Nursing Case Management Model was developed at Boston's New England Medical Center Hospitals (NEMCH) and formally implemented in 1985 following a 13-year history of primary nursing and a 2-year investigation of nursing and physician practice as they relate to clinical outcomes of care (Fondiller, 1991; Giuliano & Poirier, 1991; Zander, 1988b). The four essential components of the model are delineated by Zander (1988b, 1988c, 1990a) as:
(a) achievement and accountability for clinical and financial outcomes within the allotted diagnosis related group (DRG) timeframes, (b) the use of the caregiver (the nurse) as the case manager, (c) episode-based

nurse-physician group practices that transcend units, and (d) active participation by patients and their families in goal setting and evaluation. The major difference between the Nursing Case Management Model and traditional case management models is the decentralization of accountability for specific clinical and financial outcomes by patient to the individual nurse-physician group practice level (Zander, 1988a).

Data from the utilization of Nursing Case Management at NEMCH indicate that five goals are achievable utilizing the model. These goals are: (a) expected outcomes based on standardized case management plans; (b) well-coordinated continuity of care through collaborative practice patterns; (c) appropriate use of resources to reduce wasted time, energy, and material; (d) timely discharge within the DRG-based length of stay; and (e) promotion of nurses' professional development and satisfaction (Giuliano & Poirier, 1991; McKenzie et al., 1989; Zander, 1988c).

According to Zander (1988b), the Nursing Case Management Model "links structure, process, and outcome along three dimensions: work design, clinical management roles, and concurrent monitoring as feedback" (p. 25). The work design is composed of case management plans (CMP) and critical paths/pathways. These are the tools that have been developed to map, track, evaluate, and adjust the patient's course of hospitalization.

The case management plan is a comprehensive protocol that is used for the entire episode of care. Included in

the CMP are the nursing diagnoses or patient problems for the specified DRG, clinical outcomes that are achievable within the DRG-allotted length of stay, intermediate goals and estimated dates for each outcome, and nursing and physician interventions that are implemented in an effort to achieve the desired outcomes and goals (Zander, 1990a). The CMP frequently replaces the nursing care plan.

The critical pathway, when used in conjunction with the CMP, is an abbreviated version of the CMP, which functions as a time line and is used to monitor and plan the flow of care every shift. The critical pathway may be used in the Kardex for case consultation and shift reports. Included in the critical pathway are the processes or tasks to achieve a predetermined outcome of care, time lines for achieving the outcome, and resource use (Zander, 1988b). The critical pathway is usually divided into eight functional areas: consults, diet, activity, tests, medications, treatments, teaching, and discharge planning (Marr & Reid, 1992; Zander 1991). The critical pathway describes the typical course of care for 75% of the patients in a specified DRG (McKenzie et al., 1989). Any deviation of the patient care activity from that prescribed by the pathway is a variance and may be either positive or negative (Marr & Reid, 1992). The nurse who identifies a variance documents it on the pathway, analyzes it, justifies it, or implements actions to rectify it (Dunston, 1990; Giuliano & Poirier, 1991; Zander, 1988b). There are three major variance categories: patient/family, caregiver

related, and hospital system (Sinnen & Schifalacqua, 1991; Zander, 1990a).

CareMaps^{tm} are the most recently developed tool for management of cost and quality (Zander, 1991, 1992a, 1992b). CareMaps^{tm} are described as "cause and effect grids" with the additional step of "including patient/family actions in terms of responses to staffs' interventions" (Zander, 1991, p. 1).

The second dimension of the Nursing Case Management Model is the clinical management role. According to Zander (1988b), case management "must include professionals skilled as both clinicians and managers who are committed to the welfare of both patients and the institution" (p. 27). The ANA (1988) recommends a baccalaureate in nursing with 3 years of appropriate clinical experience as the minimum preparation for a nurse case manager. Many facilities utilizing case management prefer master's-prepared nurses who are experienced clinical specialists in areas related to the target population.

Cronin and Maklebust (1989) describe a study of BSN-prepared nurses in the role of case manager with associate degree nurses as care associates. The BSN case managers reported frustration, lack of confidence in their ability to collaborate and delegate, and inability to institute change at the systems level. As a result, the facility now uses master's-prepared nurses as case managers.

The University of Kentucky's (UK) model of case management also utilizes nurses prepared at the master's level as case managers because of the emphasis on collaboration/consultation skills, clinical expertise, and knowledge of evaluation and the increased likelihood of master's-prepared nurses possessing these attributes (Brockopp et al., 1992). Functions of the nurse case manager at UK include: (a) identification and resolution of problems across patient groups utilizing the problem-solving process; (b) collaboration and consultation with physicians, financial personnel, administrators, nursing and allied health providers, and the patient/family; and (c) evaluation of both the clinical and financial impact of case management strategies at the case manager level. These functions are consistent with those identified by Brault and Kissinger (1991), which include assessment, planning, linking, monitoring/reassessment, and advocacy.

The responsibilities of master's-prepared case managers at Harper Hospital in Detroit, Michigan, are identified by Robinson et al. (1992) as "the coordination of services of all health team members to prevent fragmentation of care and promote high quality, outcome-oriented, cost-effective care" (p. 182). Key activities include case finding, goal setting, coordination, and evaluation. The following benefits of nursing case management at this facility have been identified: (a) facilitation of decision-making, (b) decrease in recidivism and manager preventable

complications by providing concurrent and retrospective monitoring of treatment, (c) promotion of effective use of human and material resources, and (d) maintaining quality care through monitoring of variances. These benefits support the concept of case management as the link between quality of care and cost effectiveness.

The third dimension of the Nursing Case Management Model is feedback. The primary focus is concurrent monitoring, such as ongoing assessments, regular case consultations, collaborative monitoring, and patient education in groups. Other methods of feedback include retrospective audits and problem-focused quality assurance programs (Zander, 1988b). With the current emphasis on total quality management (TQM) and continuous quality improvement (CQI), nursing case management, with its multidisciplinary collaborative approach and focus on variance analysis and resolution, is the ideal vehicle for achieving these goals.

Theoretical and Research Support for Nursing Case Management

Del Togno-Armanasco et al. (1989) describe two theories utilized in developing and implementing nursing case management at Tucson Medical Center. Change theory was applied to accomplish the team building and group consensus necessary for achieving changes in the patient care delivery model and in the systems and processes used. The team approach, in turn, enhances professional communication and collaboration. Orem's Self-Care Deficit

Theory of Nursing is used to promote patient involvement in their care. The self-care orientation is implemented at or before admission, continues with patients' involvement with their care throughout their hospitalization, and is completed when patients achieve self-care at their discharge.

A link between theory and practice was established by Newman et al. (1991) through the examination of the relevance of Newman's theory of health as expanding consciousness to the nursing case management practice at Carondelet St. Mary's Hospital and Health Center in Tucson. The dimensions of the nurse-client relationships described by the nurse case managers in their practice were found to be congruent with the characteristics of nursing and the nurse-client relationship in Newman's theory.

Research data demonstrate both qualitative and quantitative findings. Zander (1988b) reports the following changes after only 6 months of case management for ischemic stroke patients at NEMCH: (a) 29% decrease in the average length of stay, (b) 47% decrease in the average number of Intensive Care Unit days, and (c) transfer to rehabilitation services 7 to 10 days sooner than before case management.

Sinnen and Schifalacqua (1991) report a significant financial impact after the first year's experience with case management at St. Michael Hospital in Milwaukee. On specific patients within identified case types, the

hospital realized a 22% decrease in average length of stay and a 6% decrease in total hospital charges.

Nursing case management at Hillcrest Medical Center in Tulsa was initiated in 1987. In 1988, approximately $960,000.00 of billed charges and 430 patient days were saved through the nursing case management program (McKenzie et al., 1989). Additionally, increased patient and nurse satisfaction, as reflected in questionnaires and interviews, were significant positive outcomes of the program.

According to Ethridge and Lamb (1989), patients at Carondelet St. Mary's Hospital in Tucson with DRG #88 (Chronic Obstructive Pulmonary Disease) progressed from being the greatest financial loss to the hospital of all Medicare patients to being one of the highest revenue generators for the hospital of all DRG categories. In 2 years, utilization of case management resulted in a decrease of 8.1 days and a savings of $1,552.00 per case.

To determine the effectiveness of the nursing case management model at Lutheran General Hospital in Park Ridge, Illinois, Trella (1993) measured length of stay, cost per patient day, and physician, nurse, and patient satisfaction for case managed versus noncase managed patients. Length of stay and cost per patient day were measured both before and after implementation of case management on an 18-bed geriatric acute care medical unit and compared with length of stay for another medical unit without case management in place. Six months after case

management was implemented, the length of stay decreased by 2 days with no increase in cost per patient day. In comparison with a medical unit without case management, the case managed unit reported a 0.7 day decrease in length of stay and $50.00 per day lower cost per patient day, which resulted in approximately $40,000.00 per month savings for the case managed unit.

Physician satisfaction rated higher on four out of eight questionnaire items regarding the quality of nursing care for the case management unit as compared to the other medical unit. Nursing staff satisfaction was measured by a questionnaire completed by all registered nurses in the unit 2 years after implementation of case management. All nurses reported that they felt case management had improved the quality of care on the unit, and 80% felt nursing case management had improved their own nursing practice. Patients receiving case management reported more satisfaction with pain control, better preparation for discharge and care at home, and higher ratings of nursing care and overall quality of care than patients in the control group.

Lamb (1992) makes the following recommendations for future nursing case management research: (a) include both qualitative and quantitative research designs, (b) improve sampling techniques, (c) incorporate theoretical explanations for the outcomes of nursing case management, and (d) design and use valid and reliable instruments that capture the full domain of nursing case management. The

survival of nursing case management may well depend on clear and convincing evidence that this model of nursing practice provides both quality and cost effectiveness.

Summary

A review of the literature revealed that the number of patients with congestive heart failure is steadily increasing and that a large majority of these patients require hospitalization for treatment of congestive heart failure as the primary or a secondary diagnosis. The increased incidence and severity of illness seen in these patients place a tremendous burden on health care facilities. Methods to provide quality, cost-effective care are continually being sought. Additionally, competition for consumers of health care has motivated hospitals to develop and market strategies to capture the health care business. Case management has been found to have a positive financial impact on delivery of health care in the hospital setting. The literature reviewed supports the notion that case management can also be the practice model that best promotes positive patient outcomes, such as satisfaction with care provided.

CHAPTER III

Methodology

Design of the Study

An experimental two group design, with postintervention testing, was used for this study. All three properties of an experimental design--manipulation, control, and randomization--were utilized (Polit & Hungler, 1991). Control was achieved through the use of a control (noncase management) group and an experimental (case management) group. Subjects meeting the selection criteria were assigned to the control or experimental group on a random basis. Manipulation involved the implementation of case management as the independent variable to those subjects in the experimental group. The dependent variable was the total satisfaction score of each of the subjects in the experimental and control groups as measured by the La Monica-Oberst Patient Satisfaction Scale.

The Sample

A convenience sample was used for this study. The sample consisted of two groups, a case management (CM) group and a noncase management (NCM) group. Initially, 60 subjects were to be included in the study, 30 in the CM group and 30 in the NCM group. Thirty slips of paper with CM and 30 slips of paper with NCM were placed in separate

envelopes and sealed. The envelopes were shuffled and placed in random order and numbered from 1 to 60. As subjects meeting the selection criteria were admitted to the hospital, the investigator withdrew envelopes in ascending numerical order. On opening the envelope, if the paper was marked NCM, the patient was placed in the control group. If the paper was marked CM, the patient was placed in the experimental group and case management was initiated. Subjects selected for inclusion in the sample met the following criteria: (a) admitted to the selected hospital with the primary diagnosis of congestive heart failure (CHF) or with a secondary diagnosis of CHF plus one or more CHF symptoms, that is, dyspnea, orthopnea, edema or ascites, increased cardiac and/or respiratory rate, jugular venous distention, or fatigue; (b) conscious, alert, and able to participate in and respond appropriately to interactions with staff; (c) English speaking; (d) 18 years of age or older; and (e) able and willing to complete the La Monica-Oberst Patient Satisfaction Scale.

Based on a review of primary and secondary diagnoses of patients admitted to the selected facility, it was expected that 6 months would be an adequate time frame for obtaining the 60 subjects and completing the data collection. However, at the end of 7 months, only 30 subjects who met the inclusion criteria were able to complete the patient satisfaction survey. Of these 30 subjects, 15 were in the CM group and 15 in the NCM group. During the 7 months, there were 23 readmissions involving members of the sample,

including 7 readmissions of 1 subject during that time frame. Four subjects originally included in the study were unable to complete the study due to deterioration of their conditions to the point they became unable to respond appropriately to questions and participate in their care. Additionally, approximately 20 other subjects with an admitting diagnosis of congestive heart failure had to be excluded from the sample due to concomitant conditions, such as Alzheimer's disease or senile dementia. With sample sizes of 15 subjects in each of the two groups, a post hoc power analysis indicated that for alpha = .05 and 80% power, a difference of slightly more than 1 standard deviation between groups would be necessary to achieve statistical significance.

Setting

This study was conducted in a 100-bed, acute care, for-profit hospital in a rural area of North Alabama. Hospital units utilized were a 5-bed intensive/coronary care unit (ICCU), a 26-bed medical unit, and a 27-bed medical unit. Attending physicians of subjects included three internists and two family practitioners. Nursing care was provided using a noncase management practice model for subjects in the control group and case management for those subjects in the experimental group.

Limitations

The following limitations of the study were identified:

1. The study was restricted to a convenience sample.

2. The sample was limited to 30 patients under the medical supervision of a small number of physicians in one hospital in North Alabama. Thus, the results may not be generalizable to other geographic areas or to the total population.

3. The subjects' reading and comprehension skills may have altered their ability to understand and accurately respond to the questions on the patient satisfaction instrument.

4. This study did not examine satisfaction according to age, sex, occupation, or socioeconomic level.

5. No attempt was made to control for concomitant disease entities (i.e., severe chronic obstructive pulmonary disease, myocardial infarction, etc.), which may have negatively affected the course and outcome of care.

6. The subjects' prior hospitalization experiences at that facility or others may have positively or negatively affected their responses.

7. The subjects' satisfaction with the overall care provided by all personnel may have biased the scores applied as satisfaction with nursing care.

8. The care provided by any individual may have positively or negatively influenced the overall patient satisfaction scores with nursing.

9. The investigator's position as the chief nursing executive of the facility may have influenced the care provided by the nurses to the subjects in the study.

Procedure

Permission to conduct the study was obtained from the Chief Executive Officer of the hospital (Appendix A). An expedited review application form for the protection of human subjects was submitted and approved by the Institutional Review Board (IRB) of the University of Alabama at Birmingham (Appendix B). A critical pathway for congestive heart failure (CHF) was developed by the investigator based on literature review, chart review, and interviews with nurses, physicians, and other health care personnel involved in providing care for patients with CHF at the selected hospital (Appendix C). Selected physicians were contacted by the investigator and written consents obtained to include those patients who were identified by the investigator as meeting the criteria in the study (Appendix D). Permission was obtained from Dr. La Monica to reproduce and use the La Monica-Oberst Patient Satisfaction Scale (LOPSS) in the study.

An assistant was chosed by the investigator to administer the LOPSS to all patients in the study. Training of the assistant consisted of instructing the assistant to: (a) read the prepared introduction and brief explanation of the study to the subjects (Appendix E), (b) obtain signed consents from all subjects (Appendix F), and (c) administer the LOPSS according to the written instructions (Appendix G).

The investigator reviewed all patients within 24 hours of admission and identified those patients who met the

criteria for inclusion in the study. A random assignment to one of the two groups, CM group or NCM group, was made by the investigator by taking the first envelope and opening it to see if the patient should be in the CM or the NCM group. Thereafter, as patients were admitted who met the criteria for inclusion in the study, envelopes were withdrawn in sequential ascending numerical order and opened to determine if the patient would be in the CM or the NCM group. For subjects assigned to the NCM group, nursing care was provided using a noncase management model of nursing practice. On the day the subjects in the NCM group were scheduled for discharge, the assistant approached them on an individual basis and read the prepared introduction to them. Consent for participation was obtained and the subjects were then asked to complete the questionnaire according to the instructions. The assistant remained with the subjects during the completion of the questionnaires. No time limit was set for completion. The subjects were told by the assistant that there were no right or wrong answers. If the subjects were unable to read or expressed the desire that the survey be read to them, the assistant read the questions and marked the subjects' responses. The questions were not discussed with the subjects, and the subjects were instructed to base their responses on their own interpretation of the questions. When meanings of words were requested, dictionary definitions were provided.

For subjects assigned to the CM group, the investigator initiated the case management process within 24 hours of the patient's admission. The investigator functioned as the case manager and worked collaboratively with the physicians, nurses, ancillary personnel, and the patient and family throughout the hospitalization of the CM group subjects. The initial responsibility of the case manager was to implement the critical pathway that had been individualized to the specific patient based on an interview with and assessment of the patient. Alterations to the generic congestive heart failure critical pathway were made for each patient in the CM group based on such factors as the individual's stage of illness, physical limitations, support systems, and presence of other illnesses or conditions requiring additional or alternative diagnostic and therapeutic modalities. Ongoing responsibilities of the case manager included: (a) conferences with the patient's physician and the nurses and ancillary personnel providing care to the patient to discuss the patient's progress and assure the interventions were being implemented as planned; (b) routine visits with the patients/families to discuss their progress with them, provide patient education, and determine home health needs after discharge; (c) documentation of variances to the critical pathway; and (d) revision of the critical pathway as needed during the hospitalization.

On the day the CM group subjects were scheduled for discharge, the assistant approached them in an identical

manner to the subjects in the NCM group and followed the same procedure for obtaining consents, demographic data, and questionnaire completion. A log for subject demographic data was maintained for descriptive purposes (Appendix H). Information in the log included: (a) identification number, (b) age, (c) sex, (d) occupation, (e) attending physician, (f) dates of hospitalization, (g) first time or repeat hospitalization at selected or any hospital, and (h) whether congestive heart failure was the primary or a secondary diagnosis.

Protection of Human Subjects

Several measures were used to assure the protection of the rights of the subjects participating in this study. The participation of the subjects was strictly voluntary with freedom to withdraw from the study at any time without any consequences The purpose of the study and procedures to be followed were explained to the subjects prior to obtaining their written consents. Confidentiality of the subjects' responses was maintained in that the questionnaires were coded by sequential numbers. No names or other identifying information were used in the data analysis or discussion of the results of the study. No known physical or psychological risks to the subjects were inherent in the study.

Instrumentation

The La Monica-Oberst Patient Satisfaction Scale (LOPSS) consists of 41 items that describe nursing behaviors in the hospital that are used to measure patient satisfaction with

the nursing care delivered. The LOPSS was adapted from the Risser Scale and developed over a series of three clinical studies with a total of 849 patients (La Monica et al., 1986).

In the first of the three clinical studies, an instrument with 50 items, 25 adapted from the Risser Patient Satisfaction Scale (1975) and 25 added by a panel of experts in nursing practice, nursing education, and psychometrics, was used to measure satisfaction scores of 75 adult patients hospitalized for cancer treatment. Items were scored on a 5-point rating scale. Results of the study included the retention of 42 items, 14 of which were related to technical-professional behaviors, 18 were in the trusting relationship category, and 10 items were education behaviors. Based on patient suggestions, several items were reworded for clarity. Additionally, 17 randomly selected items were reworded negatively to "reduce the likelihood of an acquiescence response set in subsequent studies" (La Monica et al., 1986, p.45).

The second study was designed to assess the internal consistency of the refined instrument prior to using it as a criterion outcome measure in a planned experimental study (La Monica et al., 1986). The 42-item instrument, with 17 negatively worded items and 25 positively worded items, was used with 100 patients hospitalized for cancer treatment. A 7-point, Likert-type scale was used, with possible responses ranging from strongly agree (7) to strongly disagree (1). A 7-point scale was used to achieve greater

sensitivity to small differences than that possible with the 5-point scale used with the Risser scale. Analysis revealed acceptable alpha coefficients for the three subscales: (a) Technical-professional, alpha = .81; (b) Education, alpha = .80; and (c) Trust, alpha = .84. The alpha coefficient for the total instrument as a single scale was .92.

The third study was an experimental study with 710 patients hospitalized for cancer treatment (La Monica et al., 1986). Six hundred and sixty-four usable tests were obtained. The LOPSS was scored by reversing all negative items and summing the responses. Possible total scores ranged from a low of 42 to a high of 294. Items that were not scored or were scored multiply were coded as 4, which was the midpoint or neutral scale value. Construct validity of the LOPSS was tested using Pearson product-moment correlations to test the discriminant validity and factor analysis procedures (principal axes) to examine the underlying structure of the instrument.

Coefficient alpha was used to examine the internal consistency of the LOPSS and its subscales. Coefficient alpha for the total scale was .95. Alpha coefficients for the subscales were : (a) Technical-professional, alpha = .85; (b) Education, alpha = .84; and (c) Trust, alpha = .90. Factor analysis resulted in a three-factor matrix, which explained 93.7% of the total variance. The three factors were labeled as follows: (a) dissatisfaction (17 items), explaining 73.6% of the scale variance;

(b) interpersonal support (13 items), explaining 13.8% of the scale variance; and (c) good impression (11 items), explaining 6.3% of the scale variance. One item failed to load on any factor and was eliminated.

The resultant 41-item, 7-point scale LOPSS is the instrument used for this study. The three subscales are those identified by factor analysis in the third study and labeled dissatisfaction, interpersonal support, and good impression. The instrument is a paper and pencil, self-administered questionnaire. Scoring involves reversing the scaling of the negatively worded items and then summing all of the item scores to yield an overall satisfaction score.

Data Analysis

Descriptive analysis of the data was done at all levels. Poststratification of the data for the subscales of dissatisfaction, interpersonal support, and good impression was conducted, and a thorough descriptive investigation of all patient satisfaction outcome variables was completed. Tests of distributional assumptions (i.e., variance homogeneity and normality), linearity, and independence were carried out. Univariate *t*-test procedures were used to analyze the quantitative data across the two primary study groups.

Summary

An experimental design was used for this study, with case management as the independent variable and patient satisfaction scores as the dependent variable. The sample

was composed of 30 subjects, a CM group and a NCM group, each with 15 subjects. The La Monica-Oberst Patient Satisfaction Scale was used to measure patients' satisfaction scores of their nursing care while hospitalized. An independent group *t* test was used to test the difference in satisfaction scores of the two groups.

CHAPTER IV

Findings

The purpose of this study was to ascertain if there is a difference in patient satisfaction with nursing care when case management is utilized versus when a noncase management model of nursing practice is used. A description of the sample and the results obtained from testing the hypothesis and subhypotheses will be presented.

Description of the Sample

The sample consisted of 30 subjects, with 15 subjects in each of two groups, a case management (CM) group and a noncase management (NCM) group. Only one subject in each group was employed at the time of the hospitalization. All other subjects were either retired or disabled. The previous occupations were so varied it was not beneficial to examine the data for correlations or differences. Table 1 exhibits the demographic data of the subjects by gender and age.

Twelve of the subjects had a primary admitting diagnosis of congestive heart failure (CHF), while 18 had CHF as a secondary diagnosis. For those subjects with CHF as a secondary diagnosis, the most frequently listed primary diagnosis was chronic obstructive pulmonary disease (44%). Twenty-seven of the 30 subjects had been

hospitalized prior to this admission, with 24 subjects having been in hospitals other than this facility. Nine of the 30 subjects were initially admitted to the intensive/coronary care unit (ICCU) and later transferred to one of the two medical units. Three of these nine were in the CM group and six in the NCM group. Lengths of stay (LOS) for this admission ranged from 1 to 10 days, with the NCM group having a slightly longer LOS. The *t* value for the LOS of the two groups was computed as *t* = .469. The means of the two groups were not significantly different at the .05 level (*p* = 0.642). Table 2 exhibits the demographic data related to diagnosis, previous hospitalization, and LOS.

Table 1

Demographic Data of Subjects by Gender and Age

Factors	CM group (*N* = 15)	NCM group (*N* = 15)
Gender		
Male	8	10
Female	7	5
Age		
Range	47-84	47-92
Mean	73	75
SD	10.64	11

Note. CM = case management. NCM = noncase management.

Table 2

Demographic Data Related to Diagnosis, Previous Hospitalization, and Length of Stay

Factors	CM group (N = 15)	NCM group (N = 15)
CHF diagnosis		
Primary	9	3
Secondary	6	12
Previous hospitalization		
Yes, at other facilities	13	11
Yes, only this facility	1	2
No	1	2
Length of stay (days)		
Range	2-7	1-10
Mean	3.9	4.3
SD	1.58	2.25

Note. CM = case management. NCM = noncase management.

Hypothesis and Subhypotheses

Analysis of differences of total scores and subscale scores between the two groups was done both manually (Polit & Hungler, 1991) and by computer using the SYSTAT Version 5.03 for Windows (SYSTAT, 1992). Subject 10 in the NCM group had a total score and 2 of 3 subscale scores greater than 2 standard deviations from the mean. When this subject was deleted as an outlier and the data reanalyzed, the same results were achieved. Therefore, all subjects were retained for the data analysis. Data related to the

total and subscale scores of the two groups are reflected in Tables 3 and 4.

Table 3

Data Related to Total Scores and D, IS, and GI Subscale Scores for Case Management Group

Factors	Total score (N = 15)	D score (N = 15)	IS score (N = 15)	GI score (N = 15)
Minimum	211.000	74.000	67.000	59.000
Maximum	270.000	115.000	85.000	77.000
Range	59.000	41.000	18.000	18.000
Mean	246.800	97.800	77.600	71.400
SD	17.969	11.98	4.405	4.517

Note. D = dissatisfaction. IS = interpersonal support. GI = good impression.

Hypothesis

The research hypothesis examined by the study was that there would be greater overall satisfaction for patients receiving nursing care utilizing case management as the nursing practice model than with a noncase management model. An independent group t test was used to test the difference of the mean overall satisfaction scores of the two groups as measured by the total scores obtained on the La Monica-Oberst Patient Satisfaction Scale (LOPSS). The t value was computed as t = 1.703. The means of the two groups were not significantly different at the .05 level (Table 5). Therefore, the hypothesis was rejected.

Table 4

Data Related to Total Scores and D, IS, and GI Subscale Scores for Noncase Management Group

Factors	Total score (N = 15)	D score (N = 15)	IS score (N = 15)	GI score (N = 15)
Minimum	173.000	56.000	63.000	50.000
Maximum	267.000	108.000	82.000	77.000
Range	94.000	52.000	19.000	27.000
Mean	233.133	90.667	73.467	69.000
SD	25.357	16.387	5.012	6.793

Note. D = dissatisfaction. IS = interpersonal support. GI = good impression.

Table 5

Independent Group t Test for Differences in Total Satisfaction Scores

	M	SD	df	t value	p
CM group (N = 15)	246.800	17.969	28	1.703	0.100
NCM group (N = 15)	233.133	25.357			

Note. CM = case management. NCM = noncase management.

Subhypothesis 1. The study examined the subhypothesis that there would be less patient dissatisfaction when case management is utilized versus when a noncase management practice model is used. An independent group t test was used to test the difference of the mean dissatisfaction

scores of the two groups as measured by the dissatisfaction (D) subscale scores obtained on the LOPSS. Scores on the D subscale were reversed prior to totaling so the higher the score the lower the general dissatisfaction. The *t* value was computed as *t* = 1.361. The means of the two groups were not significantly different at the .05 level (Table 6). Therefore, subhypothesis 1 was rejected.

Table 6

Independent Group t Test for Differences in D Scores

	M	SD	df	t value	p
CM group (N = 15)	97.800	11.983	28	1.361	0.184
NCM group (N = 15)	90.667	16.387			

Note. CM = case management. NCM = noncase management.

Subhypothesis 2. The study examined the subhypothesis that there would be greater perceived interpersonal support shown by nurses toward patients with case management than with noncase management. An independent group *t* test was used to test the difference of the mean interpersonal support scores of the two groups as measured by the interpersonal support (IS) subscale scores obtained on the LOPSS. The *t* value was computed as *t* = 2.399. The means of the two groups were significantly different at the .05 level (Table 7). Therefore, subhypothesis 2 was accepted.

Table 7

Independent Group t Test for Differences in IS Scores

	M	SD	df	t value	p
CM group (N = 15)	77.600	4.405	28	2.399	0.023
NCM group (N = 15)	73.467	5.012			

Note. CM = case management. NCM = noncase management.

Subhypothesis 3. The study examined the subhypothesis that patients' general impressions of nurses are better when case management is utilized than when a noncase management nursing practice model is used. An independent group t test was used to test the difference of the mean impression scores of the two groups as measured by the good impression (GI) subscale scores obtained on the LOPSS. The t value was computed as t = 1.139. The means of the two groups were not significantly different at the .05 level (Table 8). Therefore, subhypothesis 3 was rejected.

Table 8

Independent Group t Test for Differences in GI Scores

	M	SD	df	t value	p
CM group (N = 15)	71.400	4.517	28	1.139	0.266
NCM group (N = 15)	69.000	6.793			

Note. CM = case management. NCM = noncase management.

Summary

Thirty subjects were tested for total satisfaction scores and scores on three satisfaction subscales of dissatisfaction, interpersonal support, and good impression. Case management, as the nursing practice model, was utilized for 15 of the subjects; noncase management was used for the remaining 15 subjects. Independent group *t* tests were used to test the differences in the total satisfaction scores and the three subscale scores of the two groups. A significant difference was found only in the interpersonal support subscale scores. Therefore, only subhypothesis 2 was accepted--there is greater perceived interpersonal support shown by nurses toward patients with case management than with a noncase management model of nursing practice.

CHAPTER V

Discussion, Conclusions, Implications, and Recommendations

Discussion

The purpose of this study was to ascertain if there is a difference in patient satisfaction when case management is utilized and when a noncase management model of nursing practice is used. The findings of this study will be discussed as they relate to the review of literature, the research tool and data collection, and the conceptual framework.

Findings Relevant to the Review of Literature

An experimental, two group design, with a postintervention test was used. Thirty patients admitted with congestive heart failure (CHF) were randomly assigned to either an experimental group (case management) or a control group (noncase management). The independent variable was the implementation of case management with the experimental group. The dependent variables were the three subscale scores and the total satisfaction scores obtained on the La Monica-Oberst Patient Satisfaction Scale (LOPSS). Independent group *t* tests were used to test the differences in subscale and total satisfaction scores of the two groups. Although the mean scores for all three of

the subscales and the overall satisfaction scale were higher for the case management group, a statistically significant difference was found only in the interpersonal support subscale scores.

One possible explanation for this finding is the content of the items in the LOPSS subscales. Compared to the items in the dissatisfaction and good impression subscales, a higher percentage of items in the interpersonal support subscale relates to behaviors that are a function of the case manager's responsibilities, such as explanation of illness, treatments, and medications and assisting the patient to plan, follow, and understand the plan of care. The additional attention provided to the patient by the case manager during the daily interventions may have contributed to higher satisfaction scores on the items related to these activities.

No other studies were found in the literature that specified the use of the LOPSS to measure patient satisfaction with nursing care when case management was used as the patient care delivery model. Bethel and Ridder (1994) used Risser's (1975) Patient Satisfaction Instrument to measure the difference in patient satisfaction before and after a work redesign to patient-centered care utilizing a Patient Care Manager to replace the traditional head nurse role. The functions of the Patient Care Manager were very similar to those of the case manager in a case management model of nursing practice. Although the mean scores for the technical-professional subscale of the

instrument was lower after the patient-centered care was implemented, the mean scores for the education and trust subscales, as well as the overall score, were higher with the model utilizing the Patient Care Manager. However, no statistically significant changes in patient satisfaction were shown.

The findings of this study were also consistent with several other studies that made anecdotal mention of enhanced or improved patient satisfaction with the implementation of case management. However, no quantitative data or instrument identification was documented in these studies (Cronin & Maklebust, 1989; Lulavage, 1991; McKenzie et al., 1989; Ritter, Fralic, Tonges, & McCormac, 1992; Smith, Pass, Pounovich-Stream, & Jones, 1992; Wimpsett, 1994).

The Research Tool and Data Collection

The La Monica-Oberst Patient Satisfaction Scale (LOPSS) was used in this research to measure the patients' satisfaction with the nursing care they received. The subjects were approached by the assistant on the day of or the day before they were to be discharged and asked if they would participate in the study by answering a questionnaire to rate their satisfaction with specific aspects of the nursing care they recieved during the current hospitalization. If they agreed to participate, the assistant informed them that they could read the questionnaire and mark their answers or, if they preferred, she would read the statements and choices and mark their

responses for them. All 30 subjects requested that the assistant read the questionnaire to them and mark the responses.

Although anticipated completion time for the LOPSS was 15-20 minutes, actual completion time was 40-45 minutes, with an additional 15 minutes for obtaining demographic data and concluding the interview. All 30 subjects who were approached by the assistant agreed to participate and were able to complete the survey. In responding to the items on the survey, all subjects stated they were unable to make a choice on a few of the items. Subject responses included the following: (a) "That's never happened to me," (b) "I don't really know how to answer that," and (c) "My family has been here, so I didn't need the nurse." When the subject was unable to verbalize one of the given choices, the assistant marked the response as 4 or neutral, which was an equivalent value to an item left blank if the subject had been personally marking the survey.

The items comprising the LOPSS describe a wide variety of behaviors expected of a nurse in providing care for the patient. Although every item makes a reference to <u>the nurse</u>, the instrument does not define who <u>the nurse</u> is that is being referenced. The majority of the behaviors described are more consistent with behaviors expected from the nurses' aide, the licensed practical nurse, or the registered nurse providing direct patient care than with those expected from a case manager. Only one item mentioned a plan of care. Inclusion of items that more

clearly describe behaviors expected of a nurse acting as the case manager or as a member of the case management team might better differentiate satisfaction scores between the two types of nursing practice, case management and noncase management.

The Conceptual Framework

The Neuman Systems Model (NSM) was the conceptual framework used to guide this study. The major concepts of nursing were addressed based on the model. The client was the patient hospitalized with congestive heart failure. The environment consisted of all of the internal and external factors affecting the client, including the patient's coping mechanisms and response to treatment, concomitant disease processes and current state of health, and any positive or negative influences on the patient's ability to regain an optimum level of wellness. Health was considered to be the return to the prehospitalization level of function and wellness. Nursing care was provided either by case management in the experimental group or noncase management in the control group.

The Neuman Systems Model was very useful in providing a flexible structure for the critical pathway, which could be modified as needed to address the multiple concurrent illnesses and conditions found in the subjects. Specific components of the model, such as stressors and preventions as interventions, were used to develop the critical pathway to plan and guide the care of the patients in the case management group.

The framework was useful in delineating the stressors of the individual patients, which were the specific problems and needs that either precipitated the hospital admission or were identified during the hospital stay. The model was also used to identify appropriate primary, secondary, and tertiary preventions as interventions, which were the activities to be implemented and monitored by the various case management team members according to the timelines on the critical pathway.

Conclusions

Conclusions derived from the findings and discussion are as follows: (a) patient satisfaction with nursing care is similar with case management and with a noncase management model of nursing practice, (b) patients' perception of interpersonal support shown by nurses is significantly greater when case management is utilized than when a noncase management model is used, and (c) the Neuman Systems Model is a useful framework for the development of critical pathways and for implementing the case management model of nursing practice.

Implications

The findings of this study provide implications for nursing practice, education, and research. Escalating health care costs and growth of the managed care industry make it imperative that nurses be recognized as cost-effective contributors to quality patient outcomes with a positive impact on the facility's bottom line. Too often, there are those who propose decreasing health care

costs by replacing nurses with lesser trained, lower paid technicians. Knowledge of a patient care delivery model developed and implemented by nurses acting in collaboration with physicians and providing leadership to other health care team members, which not only decreases the cost and length of stay, but also improves patient satisfaction, can advance the practice of nursing by improving the status of nursing in the health care hierarchy. Case management also provides nurses with a means for empowerment and an opportunity for professional growth and career advancement in the role of the case manager.

Appropriate nursing education is needed to prepare nurses for their role as case managers or participants in case management as a nursing practice model. Currently, there are very few schools of nursing that include case management as part of their curriculum. Since the minimum educational preparation recommended by the American Nurses' Association (1988) for a nurse case manager is a baccalaureate in nursing and many facilities prefer master's-prepared nurses who are clinical specialists, the nursing education regarding case management that is available is largely limited to baccalaureate and graduate nursing programs. The majority of registered nurses employed in rural facilities are associate degree or diploma nurses. Research studies that show positive effects of case management on patient outcome and satisfaction may encourage the development of additional

programs or the expansion of existing programs in schools of nursing.

The findings of this study support the need for additional research on case management's effect on quality of care, patient outcomes, and patient satisfaction. There is also a demonstrated need for the development of instruments that can appropriately delineate nursing activities and attributes and accurately measure their impact on quality, care processes, and patient outcomes, including satisfaction.

Recommendations

Based on the findings of the study, the following recommendations are offered: (a) consider the use of case management as a viable nursing practice model in the acute care setting, (b) use the Neuman Systems Model as the conceptual framework for the development of critical pathways and the implementation of case management, (c) include case management and the role of the nurse case manager in all levels of nursing educational programs, (d) replicate the study with a larger sample of subjects, (e) replicate the study using patients with other admitting diagnoses, and (f) revise existing instruments or develop new instruments to include nursing activities and attributes specific to nurses as case managers and case management as the nursing practice model.

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APPENDIX A

Hospital Consent Form

Judy Bittinger, CRNP, a graduate student at the University of Alabama at Birmingham, School of Nursing, has been granted permission to interview, implement case management, and administer a paper-and-pencil test (satisfaction rating form) to selected patients as part of a graduate research study. Anonymity will be maintained and no physical or psychological risk to the subjects is expected. Neither the hospital nor the patients will be identified in reports of the research.

_____

Chief Executive Officer

_____

Date

_____

Researcher

APPENDIX B

University of Alabama at Birmingham
Institutional Review Board Approval Form

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM
Office of the Institutional Review Board for Human Use

FORM 4: IDENTIFICATION AND CERTIFICATION OF RESEARCH PROJECTS INVOLVING HUMAN SUBJECTS

THE INSTITUTIONAL REVIEW BOARD (IRB) MUST COMPLETE THIS FORM FOR ALL APPLICATIONS FOR RESEARCH AND TRAINING GRANTS, PROGRAM PROJECT AND CENTER GRANTS, DEMONSTRATION GRANTS, FELLOWSHIPS, TRAINEESHIPS, AWARDS, AND OTHER PROPOSALS WHICH MIGHT INVOLVE THE USE OF HUMAN RESEARCH SUBJECTS INDEPENDENT OF SOURCE OF FUNDING.

THIS FORM DOES NOT APPLY TO APPLICATIONS FOR GRANTS LIMITED TO THE SUPPORT OF CONSTRUCTION, ALTERATIONS AND RENOVATIONS, OR RESEARCH RESOURCES.

PRINCIPAL INVESTIGATOR: JUDY BITTINGER

PROJECT TITLE: CASE MANAGEMENT AND SATISFACTION WITH NURSING CARE OF PATIENTS HOSPITALIZED WITH CONGESTIVE HEART FAILURE

____1. THIS IS A TRAINING GRANT. EACH RESEARCH PROJECT INVOLVING HUMAN SUBJECTS PROPOSED BY TRAINEES MUST BE REVIEWED SEPARATELY BY THE INSTITUTIONAL REVIEW BOARD (IRB).

__X__2. THIS APPLICATION INCLUDES RESEARCH INVOLVING HUMAN SUBJECTS. THE IRB HAS REVIEWED AND APPROVED THIS APPLICATION ON 3-18-94 IN ACCORDANCE WITH UAB'S ASSURANCE APPROVED BY THE UNITED STATES PUBLIC HEALTH SERVICE. THE PROJECT WILL BE SUBJECT TO ANNUAL CONTINUING REVIEW AS PROVIDED IN THAT ASSURANCE.

__X__ THIS PROJECT RECEIVED EXPEDITED REVIEW.

____ THIS PROJECT RECEIVED FULL BOARD REVIEW.

____3. THIS APPLICATION MAY INCLUDE RESEARCH INVOLVING HUMAN SUBJECTS. REVIEW IS PENDING BY THE IRB AS PROVIDED BY UAB'S ASSURANCE. COMPLETION OF REVIEW WILL BE CERTIFIED BY ISSUANCE OF ANOTHER FORM 4 AS SOON AS POSSIBLE.

____4. EXEMPTION IS APPROVED BASED ON EXEMPTION CATEGORY NUMBER(S)_____.

DATE: 3-18-94

Russell L.

RUSSELL CUNNINGHAM, M.D.
INTERIM CHAIRMAN OF THE
INSTITUTIONAL REVIEW BOARD

The University of Alabama at Birmingham
212 Mortimer Jordan Hall • 1825 University Boulevard
Birmingham, Alabama 35294-2010 • (205) 934-3789 • FAX (205) 975-5977

APPENDIX C

Critical Pathway for Congestive Heart Failure

CRITICAL PATHWAY

DRG 127: Congestive Heart Failure

Case Mgr.: _____

(Addressograph)

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Date:							
Consults	Social Worker	Dietitian					
Diet	Low sodium Fluid restriction, as ordered	---------->	---------->	---------->	---------->	---------->	
Activity	Bedrest with BRP Total Bath Feed self with assistance	Up in chair BID Bath with Assistance Feed self	Ambulate ----------> ---------->	Up ad lib Self care ---------->	----------> ----------> ---------->	----------> ----------> ---------->	
Tests	SMA 18 CBC CXR ABGs EKG Cardiac Profile	Pulse oximetry	Electrolytes Pulse oximetry Dig level (if on Dig.)	Pulse oximetry	Electrolytes CXR		
Meds	IV Diuretic Antiarrhythmic &/or Digoxin, as ordered Antihypertens., as ordered IV to KVO	----------> ---------->	P. O. Diuretic IV to heparin lock	----------> ---------->	----------> dc IV heparin lock	---------->	
Treatments	Cardiac monitor I&O q 8h Daily weights HOB elevated 30 degrees O2 at 2L/min. VS q 4h	----------> ----------> ----------> ----------> ----------> ---------->	----------> ----------> ----------> ----------> O2 prn ---------->	----------> ----------> ----------> ----------> ----------> ---------->	----------> ----------> ----------> ----------> dc O2 VS q shift	dc monitor ----------> ----------> ----------> ---------->	
Teaching	Orientation to Hosp. & unit S/S to report to nurse Tests/lab work/ telemetry use	Teach re: heart failure, S/S, causes, treatment Symptoms to report to Dr.	Reinforce prev. teaching Diet therapy Drug education	Reinforce prev. teaching Coping mechanisms & stress management	Teach re: importance of daily wts., activity restrictions, risk factors, S/S to report	Dischg. instructions: diet, meds, S/S to report, follow-up appts.	
Discharge Planning	Assess for anticipated needs at discharge				Arrange for HHC & DME		

DRG 127: CONGESTIVE HEART FAILURE

Pt. Needs/Problems	Day 1 Date:	Day 2 Date:	Day 3 Date:	Day 4 Date:	Day 5 Date:	Day 6 Date:
Respiratory distress (SOB, dyspnea, orthopnea)		Pt. able to assist with feeding & bath & sit in chair without SOB	Pt. able to ambulate without SOB	Pt. able to perform self care without SOB	---------->	Pt. without S/S of resp. distress at discharge
Knowledge deficit	Pt. demonstrates understanding of S/S to report to nurse	Pt. will be able to state S/S, causes, treatments of CHF & when to notify nurse	Pt. demonstrates understanding of diet (verbalizes appropriate dietary choices) Pt. verbalizes understanding of meds: when, why & how to take	Pt. verbalizes appropriate coping mechanisms and stress reduction techniques	Pt. verbalizes understanding of risk factors, activity restrictions, & importance of daily wts.	Pt. can restate discharge instructions
Fatigue/Activity Intolerance		Pt. will be able to feed self, assist with bath, & sit up in chair	Pt. will be able to ambulate with assistance	Pt. will be able to perform self care & be up ad lib	---------->	Pt. will be able to perform ADLs
Anxiety	Pt. can verbalize fears & concerns related to hospitalization	---------->	---------->	Pt. displays appropriate coping mechanisms	---------->	Pt. can identify appropriate resources & support systems
Peripheral edema	Pt's edema improves with IV diuretics	Pt. will have no pitting edema	Control of edema will be maintained with P.O. diuretics	---------->	---------->	Pt. will have no edema at discharge
Pain	Pt. will verbalize pain/ discomfort appropriately to nurse	---------->	Pt. will be pain free	---------->	---------->	Pt. will be pain free at discharge
Potential for impairment of skin integrity	Pt's skin integrity will be maintained	---------->	---------->	---------->	---------->	Pt's skin integrity intact at discharge
Potential for cardiac dysrhythmias	Pt's cardiac rate/ rhythm will be maintained with or without intervention	---------->	Pt's cardiac rate/ rhythm will be maintained without intervention	---------->	---------->	Pt. will be discharged without cardiac dysrhythmias

APPENDIX D

Physician Consent Form

I hereby grant Judy Bittinger, CRNP, a graduate student at the University of Alabama at Birmingham, School of Nursing, permission to interview, implement case management, and administer a paper-and-pencil test (satisfaction rating form) to selected patients currently under my care as part of a graduate research study.

I understand that my identity, the identity of the subjects, and the information derived will be kept confidential. No physical or psychological risk to my patients is expected as a result of their participation in this study.

_____

Physician

_____

Date

_____

Researcher

APPENDIX E

Introduction to Subjects

My name is _____. I am assisting a graduate student at the University of Alabama at Birmingham, School of Nursing, in the conduction of a research project on patients' satisfaction with their nursing care while hospitalized. You have been identified as meeting the criteria to be included in the study. Your participation is voluntary and you will receive no monetary compensation. You may withdraw from this study at any time. No physical or psychological harm is expected as a result of your participation.

Your participation will consist of the completion of a brief questionnaire. The questionnaire is a method for rating your satisfaction with specific aspects of the nursing care you received during this hospitalization. The questionnaire can be completed within 15 to 20 minutes. The information obtained from this study will remain anonymous and confidential. All questionnaires will be coded by number. No names or other identifying information will be used in any reports or publications. A signed consent form will designate your willingness to participate in this study.

APPENDIX F

Subject Consent Form

I agree to be a voluntary subject in a research project conducted by Judy Bittinger, CRNP, a graduate student at the University of Alabama at Birmingham, School of Nursing. I understand that no monetary compensation will be provided and that I may withdraw from the study at any time.

I understand that my participation will consist of a brief interview and completion of a questionnaire. No physical or psychological harm is expected as a result of my participation.

_____

Subject

_____

Date

_____

Researcher

APPENDIX G

Instructions for Completion of the La Monica-Oberst Patient Satisfaction Scale

La Monica-Oberst Patient Satisfaction Scale

Instructions to the Client:

The following are forty-one statements about nurses. In the columns next to the statements are seven possible responses. For each statement, decide how much you agree or disagree with the view expressed and circle the number under the response that comes closest to your opinion. "Strongly Disagree" and "Strongly Agree" are reserved for those opinions on which you have no exceptions. "Neutral" means equally "yes" and "no."

There are no right or wrong answers. Since people differ in their views, your response should be your personal opinion. Form your opinions based upon your general impression of all the nurses with whom you have been in contact during this hospitalization. It is extremely important that your responses are honest.

The staff at this hospital know that I am asking for your help and they support this study. However, the information you give will be strictly confidential and under no circumstances will your responses be shared with the nursing staff.

Thank you very much for your time and your help. You have had a part in making nursing care more satisfactory for your needs.

APPENDIX H

Demographic Data Log

DEMOGRAPHIC DATA LOG

ID #	AGE	SEX	OCCUPATION	PHYS. #	HOSP. DATES	PREV. HOSP./WHERE	1 OR 2 CHF	OTHER DX
CM1								
CM2								
CM3								
CM4								
CM5								
CM6								
CM7								
CM8								
CM9								
CM10								
CM11								
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CM13								
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CM26								
CM27								
CM28								
CM29								
CM30								

DEMOGRAPHIC DATA LOG

ID #	AGE	SEX	OCCUPATION	PHYS. #	HOSP. DATES	PREV. HOSP./WHERE	1 OR 2 CHF	OTHER DX
NCM1								
NCM2								
NCM3								
NCM4								
NCM5								
NCM6								
NCM7								
NCM8								
NCM9								
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NCM29								
NCM30								

GRADUATE SCHOOL
UNIVERSITY OF ALABAMA AT BIRMINGHAM
DISSERTATION APPROVAL FORM

Name of Candidate Judy P. Bittinger

Major Subject Adult Health Nursing

Title of Dissertation Case Management and Satisfaction with Nursing Care of Patients Hospitalized with Congestive Heart Failure

Dissertation Committee:

Anne G. Foote, Chairman

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Judy Halcombe

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Director of Graduate Program Carol J. Barkauskas

Dean, UAB Graduate School

Date 6/15/94