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## Development of a Nursing Care Management Model for Community-Dwelling Individuals with Heart Failure

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# Development of a Nursing Care Management Model for Community- Dwelling Individuals with Heart Failure

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**Systems Change Project  
Submitted in Partial Fulfillment  
of the requirements for the Degree of  
Doctor of Nursing Practice**

**St. Catherine University  
St. Paul, Minnesota**

**Patricia A. Loeser Peschman**

**December 2010**

ST. CATHERINE UNIVERSITY

ST. PAUL, MINNESOTA

This is to certify that I have examined this  
Doctor of Nursing Practice systems change project  
written by

Patricia A. Loeser Peschman

and have found that it is complete and satisfactory in all respects,  
and that any and all revisions required by the final  
examining committee have been made.



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Kathleen A. Kalb, PhD. RN  
Name of Faculty Project Advisor

September 30, 2010  
Date

DEPARTMENT OF NURSING

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## Executive Summary

The aging of the population, with an increasing prevalence of chronic illness, contributes to the need for innovative approaches to delivery of care in the American health care system. Heart failure is the most common chronic illness leading to hospital admission in the United States for persons 65 years of age or older (Knox & Mischke, 1999). Multidisciplinary strategies for management of individuals with heart failure have been shown to reduce hospital readmission rates and mortality (McAlister, Stuart, Ferrua, & McMurray, 2004).

My systems change project focused on assisting a group of clinic-based, nurse care managers to develop a new model of care management for high risk, community-dwelling individuals with heart failure who receive care within a large, metropolitan health system. Utilizing a participatory action research process, the care managers were guided to identify needs and opportunities related to the model of care, review best practice evidence from the literature, and come to consensus about implementation of changes to improve the efficiency and effectiveness of their care delivery. Over the course of 11 months, this systems change project contributed to developments that improved systems, workflow, care manager competence, and outcomes for the care management program for individuals with heart failure.

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## Chapter One

### Introduction and Project Background

#### Project Background

The need for health care reform in the United States has been recognized for decades. The steadily rising cost of health care burdens individuals, families, and employers; and federal, state, and local governments (American College of Physicians, 2006). Despite spending more on health care than any other nation, the United States ranks poorly on multiple indicators of quality of care compared to other industrialized countries (Institute of Medicine, 2001; Mason, Leavitt, & Chaffee, 2007). Our current health care systems and reimbursement mechanisms are primarily focused on episodic, acute care. Yet, the drivers of the high cost of health care in the United States are primarily related to chronic illness (Bodenheimer, Wagner, & Grumbach, 2002).

Demographic trends show the continuing rise in the numbers of older adults (U.S. Census Bureau, 2008). Of adults age 65 and older, 88 percent have one or more chronic conditions and 25 percent of these have four or more conditions (Bodenheimer et al., 2002). These demographic numbers and estimates of the cost to the United States government and economy if current trends in medical expenses continue are staggering. Government reports, health care journal articles, news reports, and the popular press have all documented the recognition of a need for change.

I have been aware of the demographic trends and need to find solutions to these daunting issues in health care. While not possessing solutions to the larger issues related to

health care reform, I wanted to identify improvements I could contribute within the scope of my work. The focus of my nursing career for the past three decades has been the care of older adults with chronic conditions. Upon returning to school to complete my Doctorate of Nursing Practice, I wanted to continue to expand my knowledge of evidence-based systems for care of chronic illness. These influences lead me to seek a systems change project focused on chronic illness, self-management education, and the role of nursing in assisting individuals and their families to integrate self-management of chronic conditions into their lives.

With this as a backdrop, I began to seek out opportunities within my workplace. Because I was a new employee in a large, complex health care system; I interviewed a number of individuals to learn about planned and existing initiatives related to chronic illness care. I learned that a system-wide process improvement project focused on the care of heart failure patients was underway. As I described my interests, multiple people pointed me in the direction of this project.

The healthcare system began a process improvement project addressing the care of individuals with heart failure in 2006. I believe a number of factors influenced the organization to initiate this project. The Centers for Medicare and Medicaid Services of the United States government has developed a national set of core quality measures for several conditions, including heart failure. A hospital's results against these core measures become public information on the Centers for Medicare and Medicaid Services website. Results on these core measures provide evidence of the quality of care provided by a hospital or hospital system and my health system wanted to assure that the organization posted good results. In addition, beginning in 2012, Medicare will no longer pay for a hospital readmission within 30 days for

several admission diagnoses, including heart failure. My health system needed to learn to reduce the number of heart failure readmissions at its hospitals as a means to reduce episodes of uncompensated care in the future. Thirdly, the leadership within the health system also recognized the need for health care reform. The Institute of Medicine (2001) report, *Crossing the Quality Chasm: A New Health System for the 21<sup>st</sup> Century*, was widely read among my employer's leadership. The lead physician for the heart failure process improvement project had spent two years studying at the Institute for Healthcare Improvement. The heart failure project was a pilot project to allow the organization to learn better ways of delivering care to individuals with chronic conditions.

Prior to my involvement, the heart failure process improvement project was primarily focused on care of heart failure patients in the hospital and at the time of transition at discharge. They had a multi-pronged approach to management of these patients. Patient education about self-management of heart failure began in the hospital. Admission and discharge order sets were developed to increase the consistency with which best practices, such as the use of ace-inhibitors, were implemented. Usage of these order sets for heart failure patients was closely tracked. The Contact Center initiated calls to all heart failure patients after discharge to assess patients' knowledge, determine if patients had a follow-up appointment, and identify patients who seemed to be at risk for readmission. Heart failure home visit nurses were employed to conduct a one-time home visit to patients at highest risk of readmission. The hospitalists also developed a 30-day follow-up plan, which was provided to the primary physician, to guide optimal care in the first 30 days post-discharge.

In 2009, shortly after I began work at this health system, the focus of the heart failure process improvement project broadened to include outpatient management. Through the informational interviews I conducted, I learned that a new group of nurse care managers had been formed. These care managers were being assigned to the health system clinics as clinic-based care managers. They were being asked to play a role in heart failure care management for patients of their assigned clinics, both in the post-discharge period and as requested by providers in the clinic. These care managers were new in their role. The model of care delivery for heart failure patients was more of a concept than a reality. Few resources to assist the care managers were in place. Assisting the clinic-based care managers to develop a model of care for heart failure patients seemed like an ideal area for me to focus my systems change project. It fit with my personal objectives of increasing my knowledge of chronic illness care. It would be of benefit to my employer. And, finally, I believed that I could truly provide assistance to the clinic-based care managers because I could provide a resource they didn't have, someone with the time and interest to evaluate evidence in the literature and help them test it in their work setting.

### **Project Proposal**

My proposal for my systems change project was developed in the spring of 2009. Knowing that little structure existed for the clinic-based care managers, my proposal reflected a belief that I would be able to assist them in the development of multiple aspects of the model of care. I fully intended to help them establish a clear structure for care delivery, documentation systems, patient education tools, enhanced knowledge and expertise in self-management education, and a competency tool to guide new employee orientation and care

manager evaluation. For a variety of reasons, this wasn't a reasonable goal. Recognition of how to better determine scope of a project has been part of my learning over the past two years. The project proposal included a problem statement, description, purpose, research questions and objectives. These elements are addressed below.

### **Project Problem Statement**

The complex care management program for heart failure patients within my health system was in the initial development stages. To achieve the goals of the program, which include reduction in readmission rates and improved patient quality of life, the care management program would benefit from an evidence-based model of care. The care managers' knowledge and experience related to education and coaching for chronic condition self-management, telephonic care management, and advance care planning were variable. Improving the consistency and effectiveness of application of evidence-based nursing intervention with the heart failure population would increase the probability of achieving desired outcomes.

### **Project Description**

My project was designed to utilize a participative action research process to assist the nurse care managers to develop a model of care delivery for high risk, community-dwelling individuals with heart failure. Model development incorporated evidence from the literature, the care manager's own experience and patient preferences. The benefits to the nurse care managers and the health system of participating in this project were (a) access to resources to guide the design of a care delivery model through a participatory action research process, (b)

establishment of a consistent model of care delivery, which increased the opportunity to test interventions and identify efficiencies, (c) introduction of best evidence of successful strategies to address aspects of the care delivery process obtained through a thorough literature review, and (d) interaction of the nurse care managers with an advanced practice nurse to assist them in increasing their knowledge and competency in the care of individuals with chronic illness.

### **Project Purpose**

The purpose of this project was to design a model of nursing care management for a population of high risk, community-dwelling individuals with heart failure. To design this model engaged the nurse care managers in a participatory action research process, providing best evidence from the literature. The literature review was offered to the nurse care managers to guide development of the model and to ensure that the development of the model was evidence-based.

### **Project Research Questions**

Two research questions guided implementation of this project:

1. What do care managers believe about the impact of inconsistencies in processes of care delivery on outcomes for individuals with heart failure?
2. What model of care delivery would be structured by nurse care managers to meet the stated objectives of a care management program for high risk heart failure patients when guided through a participatory action research process?

### **Project Objectives**

Three objectives were identified for this project:

1. Design and implement an evidence-based model of care management for community-dwelling individuals with heart failure by engaging an identified group of nurse care managers in a participatory action research process.
2. Improve the competency of the nurse care managers in engaging with individuals with heart failure to increase their self-management capacity.
3. Improve systems to increase the consistency with which the care manager's practice patterns follow the newly designed model of care.

My systems change project proposal was approved by my academic advisor, my site mentor, and the clinic-based care manager group. The approval of both the St. Catherine University and my health system Institutional Review Boards was required, so application was made to these two bodies in sequence. Equipped with the necessary approvals, a preliminary literature review, and my own deep-seated enthusiasm, I set off on a journey of discovery to learn to create systems change within a large, complex healthcare organization.

### **Heart Failure Care Management and Social Justice**

I have attempted to provide evidence of the need for my project from the perspective of health care reform and the goals and objectives of my health system. It is also important to consider why this project is necessary from the perspective of social justice and Catholic social teaching. The importance of integrating principles of social justice and Catholic social teaching into healthcare program development and improvement of nursing process has been impressed upon me as a Doctor of Nursing Practice student at St. Catherine University.

The concept of social justice underlies Catholic social teaching. Catholic social teaching encompasses the doctrine, ideas, and theories related to political, economic and social issues developed throughout the history of the Catholic Church (Office for Social Justice, 2010). Catholic social teaching is centered on several key principles. The principles of Catholic social teaching most closely aligned with my systems change project were respect for human dignity, promotion of the common good, justice, rights and responsibilities, and a constructive role for government (Office for Social Justice, 2010). The relationship of these principles to my systems change project and the stated values of my employer will be explored.

The principle of respect for human dignity refers to the inherent dignity of the human person and the sacredness of life (Office for Social Justice, 2010). Catholic social teaching informs us that each person deserves to be respected for their intrinsic value and uniqueness as humans. This principle is also expressed in the *Code of Ethics for Nurses with Interpretive Statements* (American Nurses Association, 2001). In addition, this principle is reflected in my employer's value statement under the heading of respect. My employer's statement of the value of respect refers to treating everyone with dignity despite variation in the beliefs, culture and traditions of others. The nurse care managers working with individuals with heart failure encounter people from a wide variety of cultures, socioeconomic groups, religions, ethnic groups, and belief systems. As we worked together to build a model of care, it was important to acknowledge that these variations existed and to design accommodations that accounted for the differences in individuals. The principle of human dignity also calls us to partner with individuals with heart failure to identify goals of care and to respect their choices to either accept or decline treatment. Part of respecting the dignity of the person and the sacredness of

life is respecting individual decisions to forego treatment and assisting individuals to plan for end-of-life. The care managers work with some of the sickest heart failure patients and recognize the need to include this work as part of their model of care.

The principle of promotion of the common good refers to the importance of considering the needs of the larger society over the needs of the individual as we make decisions (Office for Social Justice, 2010). My health system refers to this within the health system value of stewardship by acknowledging health care as essential to the common good and committing to wise distribution of resources. As a health care organization, they demonstrate commitment to this principle in a variety of ways. In particular, they have committed healthcare resources to address the needs of individuals living in the inner cities of Minneapolis and St. Paul via health screening and education programs. In this way, the leadership of the health system has demonstrated they value improving the health of the community over utilizing resources in ways that only benefit the organization. How might the work of the nurse care managers address this principle? The focus of the nurse care managers is on partnering with individuals with heart failure to enhance their self-management skills. By assisting these people to learn how to take their medications, recognize signs of changes in their condition, make choices about what to eat, and monitor their own health the nurse care managers are helping them to take control of their chronic condition and increase their likelihood of staying well. Preventing a hospitalization can benefit the common good by avoiding a high cost event, often paid by a public payer. Heart failure patients who achieve stability may return to work or allow family members to be at work, which increases productivity within society. Even though this program

currently focuses on a small segment of the population, there are potential benefits for society at large.

Catholic social teaching helps us to distinguish between works of charity and works of justice. Works of charity are focused on acts of direct service to meet an immediate need (Office for Social Justice, 2010). Examples of works of charity would include donating clothing to a clothing drive, giving food to a food shelf, and sending money to an organization that helps people meet basic needs. Works of justice, on the other hand, are focused on solving the underlying causes that led to a person or persons having the need for acts of charity (Office for Social Justice, 2010). Examples of works of justice might be changing segregation laws to allow all people to have access to a good education to help eliminate structural causes of poverty. In many ways the commitment of resources by my health system to the heart failure care management program and the work of the care managers are acts of justice. The entire focus of the heart failure care management program is on helping individuals with heart failure to obtain the resources they need to remain as healthy as possible and continue to be productive members of society. Without this support, the person with heart failure often experiences repeat admissions to the hospital, impacting their quality of life and consuming health care resources that might have been used for another person.

The principle of rights and responsibilities addresses fundamental human rights including food, shelter, clothing, employment, health care, and education (Office for Social Justice, 2010). Related to these rights are the responsibilities we have to each other and to society at large. Failure to respect human rights or to live up to our responsibilities to each

other violates human dignity. My health system addresses rights and responsibilities within the health system value statement regarding integrity in which it instructs its employees to hold themselves accountable to each other and the communities served by the system. If we believe that health care is a right then we must also accept the responsibility to our patients to provide effective health care. The intent of the nurse care manager's partnership with individuals with heart failure is to provide effective care in terms of increasing these individual's self-management skills. While heart failure is a progressive illness, effective self-management offers the individual with this chronic condition the best opportunity to return to a state of wellness and the potential to contribute to their family and the community. Incorporating evidence-based interventions into the heart failure care management model should increase the competence of the nurse care managers in achieving this goal.

The principle of a constructive role for government addresses the role of government to function in a manner that protects human rights, promotes human dignity, and enhances the common good (Office for Social Justice, 2010). My health system has actively engaged in the work of health care reform by implementing changes that meet recommendations outlined in *Crossing the Quality Chasm: A New Health System for the 21<sup>st</sup> Century* (Institute of Medicine, 2001). They have built changes into the care of heart failure patients that address patient-centeredness, efficiency, and effectiveness. This work has been labor intensive and costly, but it has resulted in improved outcomes. The development of an effective model of nursing care management for community-dwelling individuals with heart failure is an important component of the process improvement. My employer has learned a tremendous amount during their work around heart failure. They are ready to address other chronic conditions from a system-

wide, care continuum perspective. The government has a role to play in supporting organizations that take on this work through grant programs or payment systems that reward results of care instead of quantity of care. The government also has a role to play in helping to share knowledge gained through successes and failures of health systems like my employer who engage in health care reform.

### **Summary**

My systems change project was selected primarily to address my educational objectives. However, it was important to me, knowing the time and effort required to complete the project, that the focus of my work be important, useful, cutting-edge, and integrated with the work of my employer. I believe the development of a model of care for community-dwelling individuals with heart failure, as a component of the heart failure process improvement project, met those requirements. This work was important as a testing ground for new models of chronic illness care. It was useful because it was work that clearly needed to be done. It was cutting-edge because there were no clear road maps to guide the development of this model of care. It was integrated with the work of the Heart Failure Steering Committee as they guided the health system in process improvement for the care of heart failure patients across the continuum of care.

Throughout the next four chapters I will share detailed information about my systems change project. Chapter two summarizes information I gathered from the literature over a 2-year period that guided the development and implementation of this project. Chapter three presents the methodology of my systems change project in a step-by-step fashion. Chapter

four highlights a summary of the data collected to evaluate the project. Finally, in chapter five I will share my thoughts about the value of this project to my employer, the clinic-based care managers, and myself.

## **Chapter Two**

### **Literature Review and Theoretical Framework**

#### **Introduction**

Completion of course and practicum work during my Doctor of Nursing Practice program required continual review of current literature. Where possible, I utilized these opportunities to further my knowledge related to aspects of my systems change project. Curriculum design and course requirements encouraged focus and deep exploration of topics directly and indirectly related to the systems change project. At times, this exploration shifted the direction of the project. At other times, the needs of the project necessitated that I delve into subject matter previously unfamiliar to me. Over the past 2 years, I have extensively reviewed the literature related to the following topics: health care reform, chronic illness care, standards of care for non-pharmacologic management of heart failure, disease management programs for heart failure, transitional care, risk factors for poor post-hospital discharge outcomes, collaborative action research, and patient self-management. A summary of findings from the literature will be presented. Theoretical underpinnings for the project will also be discussed.

#### **Health Care Reform and Chronic Illness Care**

Health care reform has been a common topic of discussion and debate during the period surrounding my doctoral studies. Debate culminated around the time of passage of the Patient Protection and Affordable Care Act in March of 2010. The need for reform has been

recognized within the American health care community for decades as organizations, systems, and individuals identify gaps in patient care; safety concerns; poor continuity; and inferior patient, quality, and financial outcomes. The need for reform has also been identified by payers, both public and private, as the costs of our health care system continue to increase. The literature is replete with articles outlining causes and recommending solutions to the current problems facing the American health care system. A significant factor identified as contributing to the need for reform is the aging of the population and the increase in the prevalence of chronic illness (Institute of Medicine, 2001). Improving our systems for managing chronic illness care is seen by many as key to transformation of the American health care system (Bodenheimer et al., 2002; Institute of Medicine, 2001).

Recently, information about health care reform in the popular press and within political circles has primarily addressed access to care and payment mechanisms for health care. Health care payment reform has not been a focus within my systems change project. My research has focused on understanding the background and underlying causes of current issues in the American health care system as well as models for improving health care delivery systems to improve quality of care and reduce costs.

A historical review is often helpful to understanding present day problems. Hegyvary (2007) presents a summary of major influences on the development of the American health care system. Hegyvary describes factors leading to the development of the American health care system as an open system. Key among these factors is the American culture, which tends to prefer a decentralized, individualized approach over a centralized, generalized solution. As

an open system, the American health care system has great diversity in the organization of delivery systems and payment mechanisms. This diversity creates complexity. Complexity interferes with efficient and effective operation of systems creating increased likelihood that the system will fail to adapt to change successfully (Hegyvary, 2007). According to Hegyvary, many analysts believe the United States health care system is experiencing this level of complexity and is thus struggling to adapt.

**Institute of Medicine Report.** The Committee on Quality of Health Care in America of the Institute of Medicine published a landmark report entitled *Crossing the Quality Chasm: A New Health System for the 21<sup>st</sup> Century* in 2001. The committee was charged with developing a strategy that would substantially improve the quality of health care in the United States within a ten year timeframe. To begin, the committee conducted an extensive review of the literature related to quality of care and established a communications network to tap into the perspectives of key stakeholders of the American health care system. The committee outlined four primary areas contributing to poor quality of care: the rapid growth and increasing complexity of science and technology, the increase in chronic conditions, a poorly organized delivery system, and constraints on exploiting the revolution in information technology (Institute of Medicine, 2001, p. 25).

The growth in the volume and complexity of science and technology is a direct result of significantly increased investment in biomedical research (Institute of Medicine, 2001). While significant advances in pharmaceuticals, devices, knowledge, and care processes have occurred as a result of this growth, the speed with which information comes to an individual health care

provider has outpaced our ability to absorb, learn, and apply that information (Institute of Medicine, 2001). As a consequence, new knowledge often takes years to become incorporated in practice. On the other hand, new technologies or drugs may be applied in practice earlier than our knowledge of how to do so safely and appropriately (Institute of Medicine, 2001). We will require new methods of disseminating and accessing information if health care providers are to improve the safe and effective application of new information in clinical practice.

The increase in the number of chronic conditions is a result of the aging of the United States population (Institute of Medicine, 2001). As medical science and technology have advanced, the average life expectancy has also increased. Given that the prevalence of chronic illness increases with increasing age, the aging of the population has also resulted in an increase in the number of people with chronic conditions, often multiple chronic conditions (Institute of Medicine, 2001). The United States health care system is organized to deliver high quality, acute care (Bodenheimer et al., 2002). Our access to emergency services, hospitalization, urgent care, and same day office appointments allows us to receive care for health problems which arise suddenly. These systems were appropriate when the primary causes of disability and death were the result of infections and acute illness. Health care for individuals with chronic conditions requires a different set of care delivery systems (Bodenheimer et al., 2002). Effective chronic condition management requires a collaborative relationship between the patient, and/or their family, and their health care providers. Actual management of chronic conditions is done by the patient. The Institute of Medicine (2001) report found that often patients were not receiving current, evidence-based interventions or the self-management support they required to effectively manage their care. To improve quality, patient, and

financial outcomes in the United States, health care reform will need to continue to define the most effective means of organizing and financing health care for individuals with chronic conditions.

The final two areas identified by the Committee on Quality of Health Care in America of the Institute of Medicine (2001) contributing to poor quality of care in the United States were poorly organized care delivery systems and insufficient use of information technology. According to the Institute of Medicine report, patients experience the U.S. health care system as confusing, disconnected, duplicative, and often contradictory. People often find the system difficult to navigate. Communication between specialty providers and primary care providers is often lacking. Payment systems have not been designed to support the additional support services needed for patients to self-manage their chronic conditions, such as care management or education. Until recently, health information was stored in paper charts which made retrieval and sharing of information extremely difficult. Poorly organized systems lead to poor quality, inefficiencies, safety issues, and increased cost. The Committee on Quality of Health Care in America also identified significant opportunities for improvement in quality of care through the expanded use of information technology. Capitalizing on web-based information for patients, clinical decision support systems for clinicians, electronic medical records, and electronic communication between patients and their health care providers were some of the recommendations offered as ways to improve quality of care through information technology resources (Institute of Medicine, 2001).

Over the past two decades, with recognition of the growth in the numbers of individuals with chronic conditions, a large amount of literature has been generated addressing models for improving care delivery for individuals with chronic illness. More than 125 million people in the United States, or almost half of the population, had a chronic condition in 2002. By 2020 that number is expected to increase to 157 million people (Partnership for Solutions, 2002). Half of all people with chronic conditions have more than one chronic condition (Bodenheimer et al., 2002). Increasing numbers of chronic conditions result in more physicians involved in an individual's care, more prescription drugs, and increased cost (Partnership for Solutions, 2002). In addition, higher numbers of chronic conditions also increase the risk for poor coordination of care, medication adverse reactions, adherence issues in patients, and care giving burden in families (Partnership for Solutions, 2002).

**Chronic Care Model.** Literature about chronic condition management often refers to the Chronic Care Model. The Chronic Care Model was developed at the MacColl Institute for Healthcare Innovation at the Group Health Cooperative in Seattle, Washington (Wagner et al., 2005). Researchers at the MacColl Institute recognized that chronic illness care is fundamentally different than acute illness care. Not only does chronic illness vary in time course and severity, it places unique demands on the patient and family. Patients and their families must manage continuous decision making related to the care of the illness and make continuous course corrections in their patterns of care to adapt to the changing demands of the chronic condition (Wagner et al., 2005).

The Chronic Care Model was the result of an extensive literature review on the topic of practice innovations and interventions associated with improvements in care and outcomes for patients with chronic conditions (Wagner et al., 2005). The Chronic Care Model is a visual depiction of the elements identified in the literature review which were found to improve patient outcomes. Developers of the Chronic Care Model identified chronic illness care falling into three levels of organization – the community with its imbedded resources, policies, and services; the health care system which includes payment structures; and the provider organization where health care is actually delivered (Bodenheimer et al., 2002). The Chronic Care Model highlights six essential elements. The availability of community resources and strong linkages between community resources and provider organizations are the first element. Community resources may include things such as senior centers, health clubs, and self-management education classes. The second element is health care organizations. This refers to their structure, goals, and values. It incorporates their leadership and the vision the leadership has to foster development of systems to support chronic illness care. It also refers to the relationship between the health care organization and purchasers of services including payers. The next element, and often considered the most essential, is self-management support. The model recognizes the fact that patients self-manage their chronic conditions. There is growing evidence that knowledgeable, activated patients have better health outcomes (Wagner et al., 2005). Self-management education is aimed at assisting patients and families to set goals, develop action plans, and make decisions with the support of an accessible team of health care providers and people to offer social support. The fourth element is delivery system design. This involves creating a different delivery model for persons with chronic illness.

Wagner et al. (2005) describe a proactive, prepared practice team who has a planned approach to delivering evidence-based care to persons with chronic illness. This most often involves a multidisciplinary team, longer appointment times, and strong communication systems. The fifth element is decision support systems accessible to the provider which deliver reminders of essential elements of care and allow access to specialists' knowledge when it is needed. Finally, the sixth essential element is a clinical information system. A clinical information system may cue the provider to elements of a clinical practice guideline which are due, provide feedback to the provider on quality of care, allow electronic interaction between patients and providers, and create registries of patients with a common chronic condition for population management strategies.

The National Chronic Care Consortium operated from 1991-2003 to advocate for chronic care reform. The consortium focused on improved policies, structures, and clinical methods to serve the needs of individuals with chronic illness (National Chronic Care Consortium, 2003). The consortium served as a catalyst for change within healthcare systems, seeking innovative redesign to address the needs of this population, and with public and private payers. The National Chronic Care Consortium developed the "Checklist for Chronic Care Reform" (Bringewatt, 2003). The checklist is a summary of evidence, beliefs, and experience from the staff of the National Chronic Care Consortium intended to assist payers, providers, and consumers to utilize what is known about chronic condition management to develop new, more effective policy, payment, information, and delivery systems for individuals with chronic illness. The recommendations in the "Checklist for Chronic Care Reform" are similar to those incorporated in the Chronic Care Model. In addition, the checklist strongly emphasizes

screening and prevention activities, policy development, and changes to payment methodologies.

### **Standards of Care for Nonpharmacologic Management of Heart Failure**

My health system utilized the Heart Failure Practice Guideline developed by the Heart Failure Society of America (Adams et al., 2006) as the basis for evidence-based recommendations for their process improvement initiative. The guideline contains a comprehensive set of recommendations for evaluation, prevention, management at various stages of heart failure, surgical intervention, and management of co-morbidities. Included in the guideline are a set of recommendations for nonpharmacologic and disease management of patients with heart failure. These recommendations created the core of the self-management education provided by the clinic-based care managers in my project.

The Heart Failure Practice Guideline (Adams et al., 2006) utilizes the following definition of heart failure:

Heart failure is a syndrome caused by cardiac dysfunction, generally resulting from myocardial muscle dysfunction or loss and characterized by left ventricular dilation or hypertrophy. Whether the dysfunction is primarily systolic or diastolic or mixed, it leads to neurohormonal and circulatory abnormalities, usually resulting in characteristic symptoms such as fluid retention, shortness of breath, and fatigue, especially on exertion. In the absence of appropriate therapeutic intervention, heart failure is usually progressive at the levels of cardiac function

and clinical symptoms. The severity of clinical symptoms may vary substantially during the course of the disease process and may not correlate with changes in underlying cardiac function. Although heart failure is progressive and often fatal, patients can be stabilized, and myocardial dysfunction and remodeling may improve, either spontaneously or as a consequence of therapy. In physiologic terms, heart failure is a syndrome characterized by elevated cardiac filling pressure and/or inadequate peripheral oxygen delivery, at rest or during stress, caused by cardiac dysfunction. (p. 14)

The Heart Failure Practice Guideline (Adams et al., 2006) includes recommendations for comprehensive education and counseling for patients with heart failure and their families. The guideline recommends inclusion of family in education as the patient often has barriers to learning such as fatigue, depression, cognitive impairment, or other co-morbid conditions. The guideline describes key areas for initial assessment when beginning an educational program including literacy, cognitive status, culture, psychological state, preferences, perceived barriers to learning, and current knowledge related to heart failure (Adams et al., 2006). The following elements are considered essential in an educational plan to promote self-management: definition of heart failure, symptoms of heart failure, the specific cause of the patient's heart failure if known, recognition of escalating symptoms, response to escalating symptoms, indications for and use of medications, risk factor modification, dietary recommendations and meal planning, exercise and activity, and the importance of treatment adherence (Adams et al., 2006). The guideline specifically addresses the importance of advance care planning in this

population due to the progressive nature and high mortality rate of the disease. Evaluation of learning through teach back or demonstration has also been shown to be a component of an effective education plan.

### **Disease Management Programs for Heart Failure**

The Centers for Disease Control and Prevention (CDC) at the United States Department of Health and Human Services Heart Failure Fact Sheet (2010) states that 5.8 million people in the United States have heart failure. The incidence of heart failure is approximately 670,000 people per year in the US (CDC, 2010). One in five people will die within one year of diagnosis (CDC, 2010). In addition, heart failure is the number one diagnosis-related group for admissions to hospitals across the United States for people over the age of 65 (Knox & Mischke, 1999). As such it is the most expensive diagnosis group for older adults in the Medicare program.

These statistics document the significance of the problem of heart failure. As a result, the volume of literature reviewing research studies, randomized controlled trials, systematic reviews, and meta analyses on the topic of interventions producing improved outcomes for heart failure patients is extensive. My focus has been on outpatient management of heart failure patients to reduce hospitalizations, in particular the use of nurses to partner with patients for education and care management. A summary of findings from the some of the literature on this particular topic follows.

Knox and Mischke (1999) describe the design and implementation of a comprehensive disease management program for congestive heart failure patients at Evanston Northwestern Healthcare. The Evanston Northwestern Healthcare program was designed as a process

improvement project and not as a clinical trial. While the program showed positive results over time, the value of the article is in the description of the processes utilized to design the program and the specific components which were implemented to achieve positive patient and financial outcomes. Knox and Mischke provide a thorough review of the literature including factors that contribute to high readmission rates in this population. The national 30-day readmission rate for heart failure patients in the early 1990s was 23%. Recent data from the American Heart Association indicate that the current 30-day readmission rate has not improved overall (Ross et al., 2009). Knox and Mischke identify poor medication compliance, poor social support, and failure to seek medical attention for onset or worsening of symptoms as key patient factors contributing to these high readmission rates. They also emphasize that people do not learn effectively when they are in the hospital. Often they are too ill or too distracted by the environment to retain much of the information shared with them. Shorter lengths of stay also make provision of effective education in the hospital very difficult.

Krumholz et al. (2002) conducted a randomized controlled trial of an education and support intervention with heart failure patients. They conducted the trial at Yale-New Haven Hospital between October 1997 and September 1998. The study intervention was based on five sequential care domains for chronic illness, including patient knowledge of the illness, the relation between medications and the illness, the relation between health behaviors and the illness, knowledge of early signs and symptoms of change in the illness, and where and when to call for help. An initial assessment identified the patient's knowledge in relationship to each domain. A summary of gaps in knowledge was shared with the nurse educator. Educational sessions reviewed the information in the care domains sequentially and provided support to

patients and families as they applied the information to their own management. The initial educational session was conducted face-to-face by an experienced cardiac nurse within two weeks of discharge from the hospital. These visits were either in the clinic or at home and employed a teaching booklet. The patient was then contacted by phone at specified intervals for a period of one year. A total of 44 patients participated in the intervention group and 44 patients in the control group. The findings of this study showed a 39% reduction in all-cause readmissions and a 47% decrease in heart failure readmissions. The costs of care were also significantly reduced in the intervention group where the costs were \$6985 per patient per year less than in the control group. They did find that this intervention took 180 days to show a significant difference between the two groups as compared to other studies employing more comprehensive interventions which achieved a positive difference in 90 days. The authors emphasize that the focus was on long term behavioral change.

Duffy, Hoskins, and Chen (2004) conducted a systematic review to synthesize available evidence regarding nonpharmacologic strategies which impact readmission rates and quality of life measures for heart failure patients living in the community. A total of 15 studies met the inclusion criteria which included that they were a randomized clinical trial and achieved a score of 13 on the Heart Failure Study Assessment Scale developed by the authors to evaluate the studies. The systematic review findings suggest that improvements in hospital readmission rates and quality of life scores for patients can be achieved by both multidisciplinary disease management and nonpharmacologic nurse-led interventions. Common interventions utilized in the clinical trials were education, close monitoring, support, and collaboration among team members. The authors emphasize the importance of establishing a trusting relationship with

patients based on this review. The authors suggest that a close, trusting relationship with a consistent case manager may contribute to patient success in lifestyle modification and thus improved outcomes.

McAlister, Stewart, Ferrua, and McMurray (2004) conducted a systematic review of multidisciplinary strategies for the management of heart failure patients. This review included randomized clinical trials published between 1966 and 2003. Studies were selected if they reported the impact of outpatient, multidisciplinary interventions on mortality or hospital readmission rates for heart failure patients. Studies were then assigned to one of four groups based on the type of intervention: (a) multidisciplinary heart failure clinics, (b) multidisciplinary teams providing outpatient follow-up outside a hospital or clinic, (c) telephone follow-up or telemonitoring paired with enhanced communication with the primary physician, or (d) educational programs designed to enhance patient's self-care abilities. Patient education was a key component in all four of the types of interventions. In all 29 randomized controlled trials were reviewed. Results of pooled data indicated that outpatient multidisciplinary management for patients with heart failure is associated with a 27% reduction in heart failure hospitalization rates and a 43% reduction in total heart failure hospitalizations. Those interventions that incorporate specialized follow-up by a multidisciplinary team or heart failure clinic also reduced all-cause mortality by approximately 25%. The results of these multidisciplinary team interventions compare favorably with results for established drug treatment protocols for heart failure. Overall, the results of this systematic review indicated that patient self-care education, close follow-up monitoring by specially trained staff, and access to heart failure clinics appear to be the most efficacious interventions. Telephonic follow-up alone appeared to be the least

efficacious. The authors believe that three elements are crucial to the success of these programs: (a) specially trained heart failure nurses, (b) education of patients and their caregivers about self-care, and (c) ready access to clinicians trained in the management of heart failure.

While the evidence demonstrates a positive effect of outpatient, nonpharmacologic interventions delivered by a multidisciplinary team in reducing readmission rates for patients with heart failure, the evidence is not substantive enough to identify which specific interventions or combinations of interventions are actually responsible for these results. Hebert and Sisk (2008) looked at the question of which interventions utilized in heart failure disease management protocols were most effective. Hebert and Sisk were unable to identify which specific interventions contributed to the outcomes of the various clinical trials because of the variability in the development and implementation of interventions over multiple clinical trials. They also found that intermediate variables, such as what percentage of patients took prescribed medications as directed, were not reported. As a result, it was impossible to learn much about which patient self-management behaviors were affected by the intervention and to what extent and how those behaviors ultimately influenced the final outcomes studied, namely readmission rates and mortality. Hebert and Sisk recommend that a standardized taxonomy of disease management protocols for heart failure be utilized in future research and that intermediate variables be evaluated as a solution to this issue.

Sochalski et al. (2009) also looked at the question of which specific interventions in chronic care management programs were effective in improving outcomes for heart failure

patients. This group pooled and reanalyzed data from ten randomized clinical trials, conducted by this group of authors, to answer the question of whether the delivery methods utilized in care management programs for heart failure patients contribute to differences in hospital readmission rates. They looked at two specific outcome measures: hospital readmission rates and total readmission days. The authors noted that the care management programs in these studies primarily served individuals with advanced heart failure; in fact, 46% of the patients in these trials had New York Heart Association Class IV heart failure. These patients are known to be at highest risk of rehospitalization. The results of this study demonstrated a significant reduction of 25% in hospital readmissions and a decrease of 30% in readmission days among patients in the intervention groups over patients in control groups. A regression analysis was performed to differentiate whether the use of a multidisciplinary team approach to care showed any benefit over the use of a single heart failure expert. Their findings indicated that programs that utilized a single heart failure expert to deliver the intervention did not show any difference in readmission rates or total readmission days over routine care. In contrast, interventions that utilized a multidisciplinary team did show a significant reduction in readmission rates and readmission days. Another key finding from this study was the impact of the method of communication. The authors found that in-person communication resulted in significant reductions in readmissions and readmission days of 2.5% and 5.7% respectively. Programs that utilized telephonic care management only did not show any benefit in terms of improvement on these specific outcomes.

To summarize, the state of our knowledge related to outpatient disease management programs for heart failure patients supports the value of nonpharmacologic interventions as an

adjunct to other pharmacological and technical interventions for this population.

Nonpharmacologic interventions have the potential to decrease hospitalizations and mortality for patients with heart failure on a scale that compares favorably with established medication protocols (Krumholz et al., 2002). To achieve these results, disease management programs should incorporate the use of a multidisciplinary team, education designed to enhance patient's and caregiver's self-management abilities, close monitoring, and a component of face-to-face interaction. Researchers in the field of disease management for heart failure acknowledge that significant gaps in our knowledge remain. In particular, evidence regarding the benefit of specific interventions, timing of interventions, length of time of the team interaction with the patient and the balance between face-to-face and telephonic intervention are areas for further study.

### **Transitional Care**

The focus of outpatient disease management programs for heart failure, reviewed above, is on the management and support of patients after they leave the hospital. Research into transitional care addresses the needs of patients during the critical period between hospitalization and the immediate post-discharge period. In my health system's experience with heart failure patients, hospital readmission tends to be the highest within the first 30 days post-discharge; in fact, it is often highest during the first week after discharge. There were many factors contributing to these high readmission rates including poor communication between providers in the hospital and the outpatient setting, poor medication reconciliation,

patients and caregivers who are poorly prepared to manage their care at home, as well as patients being discharged to home in unstable condition.

During the course of my project, the work of the care managers shifted from an open-ended relationship with the patient, that continued until the care manager determined that the patient had the skills necessary to self-manage their heart failure, to a 30-day transition coach-type intervention. A transition coach is an individual employed to partner with patients and their family during the period of transition from hospital to home to coach the patient in the skills needed to successfully integrate new self-care activities. I was asked to help design the components of the 30-day intervention and to educate staff in preparation for a pilot of this briefer intervention. As a part of that work, I reviewed the current literature relevant to transitional care. Common features of research studies in this area were a focus on assuring continuity between hospital and home and provision of support during the initial post-discharge period.

Naylor et al. (2004) studied an intervention addressing the transitional care of older adults with heart failure. In their review of the literature they identified a series of patient and system factors that contributed to poor discharge outcomes. Patient factors included multiple co-morbid conditions, cognitive and functional deficits, emotional problems, and poor health behaviors. System factors included communication breakdowns between inpatient and outpatient providers, ineffective or insufficient patient education, issues with continuity of care, and lack of access to needed services. Naylor et al. designed an intervention to address the factors contributing to poor discharge outcomes utilizing advanced practice nurses (APNs).

Components of the study intervention included extensive training for the APNs on management of heart failure, initiation of discharge planning within 24 hours of admission to the hospital, a home visit within 24 hours of discharge from the hospital, frequent home visits in the three months post-discharge, and the availability of telephone access to the APN 12 hours per day, seven days per week. The APN actively managed the patient's heart failure care as well as educated the patient in self-management over the course of the intervention. Results of this intervention included a 19% reduction in hospitalizations for the intervention group over a one year period as compared to the control group. The greatest difference in hospitalization rates occurred during the intervention period. In the six months following the intervention, the intervention group continued to have fewer hospitalizations than the control group. At the end of the year, overall hospitalization rates continued to be lower in the intervention group; however, the differences between intervention group and control group were not as great. These results do demonstrate persistence of the intervention effect over time, though the effect lessened as the post-intervention time increased. Naylor et al. also documented a cost savings of \$4845 per patient.

Harrison et al. (2002) conducted a randomized clinical trial of a transitional care intervention from hospital to home. What was interesting about this study was that the intervention did not add any additional personnel, existing hospital and home care staff were utilized to deliver the intervention. The authors designed an intervention that focused on closing gaps in usual processes of care through clearly delineated, organized, and strengthened processes during the transition period. Patients in the control arm received usual care which included discharge planning, referral to home care, as well as education about self-

management and monitoring of the patient's status by the home care nurse. Patients in the intervention arm received usual care plus the addition of a comprehensive program to enhance transitional care. This program addressed three areas: (a) self-management support, (b) linkages between hospital nurses, home care nurses and patients, and (c) the balance of care between the patient and family and professional providers. The transitional care program was centered on an evidence-based protocol for counseling and education of heart failure patients. In addition, there was planned contact by the hospital nurse to the patient within 24 hours of discharge and a letter from the hospital nurse to the home care nurse detailing the patient's clinical status and self-management needs. Outcome measures for this intervention were health-related quality of life, symptom distress, and function as measured by the Minnesota Living with Heart Failure Questionnaire and the Short Form-36 (Harrison et al., 2002). Numbers of all-cause emergency room visits and hospital readmissions were also measured. Findings reported by the authors demonstrated a significant difference in quality of life scores at 6 and 12 weeks between the control group and intervention group. The intervention group had improved quality of life scores from baseline at each measurement period whereas the control group's scores increased at the 2-week measurement period and then remained stable or declined after that. This simple intervention also resulted in significantly fewer emergency room visits in the intervention group (rate of first visits: 29%) as compared to the control group (rate of first visits: 46%). No statistically significant differences were found in hospitalization rates, however. I found this study interesting from the perspective that it evaluated a rather low cost, simple intervention added to usual care. It did not impact hospitalization rates, however, which is a key quality measure for hospitals related to heart failure diagnoses.

The work of Coleman and his colleagues at the University of Colorado Health Sciences Center to develop the care transitions intervention is often referred to by groups seeking strategies to improved transitional care between hospital and home. Coleman, Parry, Chalmers, and Min (2006) report the results of a randomized controlled trial of the care transitions intervention. The overall objective of the intervention is to encourage older adult patients and their caregivers to take a more active role in their care during periods of transition from hospital to home to decrease the rate of rehospitalization. The intervention is built around four pillars: (a) medication reconciliation and self-management, (b) a personal health record maintained by the patient or caregiver, (c) follow-up appointments with the patient's primary care provider or a key specialist within a short period of time following hospitalization, and (d) making certain the patient/caregiver has knowledge of red flags or signs of a worsening of their chronic condition and knows how to respond should they occur. In this study the intervention was delivered by an APN. The APN met the patient in the hospital, conducted a home visit within 48-72 hours post-discharge, and then telephoned the patient three times over the 28 day post-discharge period. The home visit was utilized to conduct thorough medication reconciliation and to coach the patient on communication with the physician at their follow-up appointment. Goals for self-management were also set during the home visit. Subsequent phone calls evaluated any follow-up appointments, progress toward goals, and reinforced the patient's self-management skills. Hospital readmission rates were tracked for intervention group and control group members at 30, 90, and 180 days. Intervention group members had lower hospital readmission rates than the control group at each time interval.

Differences in readmission rates for all-cause readmissions were statistically significant at 30 and 90 days, and at 180 days for the same diagnosis that resulted in the index hospitalization.

Information from each of these studies was beneficial in the design of the pilot of a 30-day intervention post-discharge for the care management group at my health system. This information helped to guide timing of contact between patients and the care manager. It also guided the focus of the care manager's work during the 30-day intervention period. There are some significant differences between my health system's care management program for heart failure patients and these studies as well. The care managers within my health system do not routinely visit patients in the hospital prior to discharge. In our system, there are identified hospital-based staff that are responsible for discharge planning and referring patients to care management. The care managers in my health system are not APNs. If they identify a need for a change in a patient's medication regimen, for example, they must access the primary physician or cardiologist to initiate the change. Lastly, the care managers in my health system do not routinely provide the patient with a personal health record other than a weight record.

### **Risk Factors for Poor Post-hospital Discharge Outcomes**

As a part of my work with the clinic-based care managers, I was asked to participate on a work group known as the Care Continuum for Heart Failure Work Group. The focus of the group was to improve processes of care for heart failure patients during the transition from hospital to home and following discharge from the hospital. I was asked to participate on a subgroup of the larger work group focused on reliable decision making at the time of discharge. The objective of the subgroup was to identify the most reliable and efficient tools and

processes to guide decision making regarding an effective discharge plan to direct heart failure patients hospitalized at hospitals in my health system to the right level of care post-discharge. My contribution was a review of available literature on this topic.

An initial search of the literature failed to identify valid and reliable discharge planning tools specific to heart failure. There were a several tools available that focused on screening for discharge planning needs. The Blaylock Discharge Planning Risk Assessment Screen (Blaylock & Cason, 1992) helps to identify patients at risk for long lengths of stay and in need of discharge planning resources. This screen is administered on admission. It is a valid and reliable tool. It has actually been used within the hospitals in my health system in the past. The tool is fairly comprehensive, looking at age, living situation, functional status, cognitive status, behaviors, mobility, sensory deficits, previous hospital admissions, number of active medical problems, and number of medications. The Probability of Repeated Admissions (PRA) tool was tested as a predictor of the need for nonroutine discharge planning by a group at Mayo Clinic (Holland et al., 2003). The PRA was not specifically designed as a screen for discharge planning; however, the authors wanted to test if it might be helpful in this setting because its primary use was similar; predicting older adults who require community services to avoid repeat hospitalizations or nursing home placement. Patients were randomized into the study. For those consenting to participate, the PRA was administered on admission and each patient was followed until discharge. PRA scores were then correlated with three end-points: use of nonroutine discharge planning resources, prolonged length of stay, and nonroutine discharge disposition. The authors found that the PRA score, while significantly associated with use of nonroutine discharge planning resources and nonroutine discharge disposition, was not predictive of these

areas. The full PRA includes eight self-report questions regarding age, sex, health status, caregiver availability, history of diabetes mellitus, history of coronary artery disease, and history of utilization of hospital services in the past year. Using logistic regression models, the authors found that four items from the PRA were predictive of the need for nonroutine discharge planning. These items were self-reported health status, age, sex, and caregiver availability.

Unable to find an existing tool which met the requirements of the subgroup's objective, I began to look at evidence in the literature of patient factors that were predictive of poor post-discharge outcomes. Naylor (2000) identified self-health rating, emergent versus planned admission, number of co-morbid conditions, number of previous hospitalizations, number of medications, functional status, medication nonadherence, absence of a social support network, and lack of motivation as predictors of poor discharge outcomes. Tanaka, Yamamoto, Kita, and Yokode (2008) developed a tool looking at seven items to be screened for at admission to predict the need for nonroutine discharge planning. The seven items were age 75 or greater, readmission within one month, living alone or with a spouse 75 or older, absence of a caregiver, and impairment of basic or instrumental activities of daily living. Bowles, Naylor, and Foust (2002) completed an extensive review of the literature to identify patient characteristics associated with the need for home care, the likelihood of a post-discharge referral, or the development of poor post-discharge outcomes. In addition to the characteristics already mentioned, these authors found evidence that educational level less than grade 12, cognitive impairment, prior home care use, home bound status, depression or a history of psychological problems, need for skilled nursing care, complications or the need for surgery during the

hospital stay, and a history of falls were associated with the need for nonroutine discharge planning.

After synthesizing the review of the literature, it became clear that there was a set of criteria consistently identified as predictive of the need for nonroutine discharge planning. These criteria were age 75 or older, fair or poor self-rating of health, multiple co-morbid conditions, impaired functional status, impaired cognition, absence of a social support network or caregiver, readmission within the previous 30 days or multiple admissions within the last 6 months, and a history of nonadherence to the prescribed therapeutic regimen. These common characteristics were shared with the hospital discharge planning staff involved in the care of heart failure patients.

### **Collaborative Action Research**

I was introduced to collaborative action research during my Doctor of Nursing Practice program. The concept of the individuals, who are doing the work, utilizing a defined process to take action to improve their own work, made sense to me and seemed to be a good fit for the project I envisioned. My review of the literature in this area was not extensive; however, I read enough to allow me to understand and explain the principles and process of action research to the care managers involved in my project. Much of the information written about collaborative action research comes out of the field of education. The collaborative action research process adapts well to address workplace issues in the field of health care.

Collaborative action research is a systematic, participatory approach to inquiry that enables people to explore problems or issues and identify actions designed to resolve those

problems or issues (Sagor, 1992; Stringer & Genat, 2004). Traditional experimental research focuses on setting up a very structured, controlled process to test an intervention to establish evidence of the effects of that intervention, such as in a drug study. It may test a theory or establish new information. Action research is less formal. Action research is utilized to acquire information having practical application to the solution of problems related to our work (Sagor, 1992; Stringer & Genat, 2004). Action research is very similar to the process improvement cycle often utilized to continuously improve workplace systems and processes.

Action research proceeds in a sequential and cyclical manner through a series of steps. It is sequential in that there is a prescribed progression of phases utilized to explore problems, test solutions and evaluate the effects of those piloted solutions. It is cyclical in that the group may proceed through some or all of the steps of the process multiple times to arrive at the most effective solution. Literature on collaborative action research describes a five-step process: (a) problem formulation and research design, (b) data collection, (c) data analysis, (d) communicating results, and (e) action planning (Sagor, 1992; Stringer & Genat, 2004).

The decision to engage in collaborative action research typically begins with identification of a problem requiring solution or from the desire of an individual or group to improve some aspect of their work. The issue of concern is often ill defined initially. Those with the desire to address the issue may recognize that they need to bring others into the discussions that either have experience or information that may benefit their work or who will also be impacted by the decision to make a change. There is often recognition that additional information is required to address the issue in a scholarly manner. A thoughtful, systematic

approach to defining the problem, engaging key stakeholders, and planning for the action research process is the first step action researchers must take (Sagor, 1992; Stringer & Genat, 2004). In this stage the group concentrates on establishing a focused, clear description of the issue to be addressed that is within the scope of the resources available. An initial literature review is conducted and ideas from the literature are summarized. Individuals with experience related to the issue, decision making authority, or a vested interest in the outcome of the research project are approached to seek engagement in the process. Discussion of underlying principles and ethical considerations occur (Stringer & Genat, 2004). In addition, careful thought is given to data collection that will yield valid and reliable results.

The second phase of the collaborative action research process is data collection. During this phase the researchers gather as much information in as much depth as they can to fully understand the issue of concern and gather ideas for improvement. Information comes from many sources. Completion of a more thorough literature review in the specific area of focus should occur (Stringer & Genat, 2004). A variety of techniques are available to gather information from key stakeholders. These include interviews, focus groups, and surveys (Stringer & Genat, 2004). Direct observation of current practices may also be helpful. Another source of information is documents and case files related to the issue of concern. Information may be recorded using field notes, tape recording, video recording, and photographs (Stringer & Genat, 2004).

Once the research team has gathered information from all of the relevant sources they had identified, the information must be sorted and analyzed. The team must identify the

recurring themes from data collection. They must catalogue and categorize information to make sense of it. Stringer and Genat (2004) talk about the importance of recognizing and decoding epiphanies described by the participants who shared personal experiences with the research team. Stringer and Genat define epiphanies as defining or clarifying moments as well as life changing events. They caution us to pay particular attention to these descriptions as they provide insight into the meaning of information to individuals as they apply it in their workplace. According to Stringer and Genat, epiphanies move the researchers away from objective data and facts and provide them a glimpse into the individual's life experience giving voice to the participant's perceptions. Deconstructing these events provides the action researchers with key elements pertinent to the issue of concern. These qualitative data are then blended with other data collected and organized into a conceptual framework to guide the team in identifying solutions (Stringer & Genat, 2004).

As with all scholarly endeavors, communicating elements of the research process, key findings, and the final action steps, is a crucial element of action research. Documentation of the process and outcomes in a final report is strongly recommended (Sagor, 1992; Stringer & Genat, 2004). Sharing those results with others through a variety of media allows others to participate in the action and learn from the experience. Some ideas for communicating the process and results of the research include publication in journals, poster sessions or presentations at conferences, creation of multimedia presentations such as videotaped or interactive learning products, or even through dramatic or dance performances (Stringer & Genat, 2004).

Collaborative action research is named as such because the intent is that the action researchers apply what they have learned in their workplace. The final step is to take action. If all involved parties are in agreement that a change is needed and there is concurrence about what the change should be, the team should proceed with making an action plan to implement the change. Making the action plan as detailed as possible, including the purpose, goals, intermediate steps, timeframe, and persons responsible will improve the likelihood of success (Stringer & Genat, 2004). When there is disagreement about the need for change or the specific change that should be implemented, the individuals supporting change will need to engage in some additional prework to increase the chances for successful implementation. Understanding factors that favor change as well as factors that create barriers to change is crucial. The action research team should identify methods to enhance features supportive of the change and minimize those opposed. Communicating the results of the data collection and analysis should also be helpful in changing the hearts and minds of those opposed to change (Sagor, 1992). Conducting a pilot project may be beneficial before implementing extensive change to enlist the support of those who are skeptical.

### **Patient Self-Management**

My systems change project focused on engaging with nurse care managers in support of their work with heart failure patients living in the community. To a large extent, the focal point of the nurse care managers partnership with these patients was self-management education. The nurse care managers would describe their involvement with patients at various stages of activation to self-manage their care. They felt pressured to identify the magic approach to

engage individuals to activate to self-manage their care. As a result, they often sought out training and resources related to patient self-management to supplement their knowledge. Because patient self-management is such an important aspect of the care of individuals with chronic illness, I completed a fairly extensive review of the literature in this area.

The Chronic Care Model was discussed previously (Wagner et al., 2005). The ultimate goal of the Chronic Care Model is an informed, activated patient interacting with a prepared, proactive healthcare team to self-manage their care resulting in satisfying encounters and improved outcomes (Bodenheimer, Wagner, & Grumbach, 2002). A wide variety of factors influence this dynamic. From the patient's perspective, successful self-management is a complex phenomenon that results from the interaction of factors in several different aspects of their lives including their acceptance of their diagnosis, knowledge of their underlying condition, personal beliefs, health beliefs, and goals of care (Scotto, 2005; van der Wal & Jaarsma, 2008). Social and economic factors also play a significant role in patient's decisions and motivation to follow a treatment plan or integrate a chronic condition into their lives. Lack of resources to follow a healthy diet or purchase prescribed medications, lack of social support systems, and health literacy issues may all be factors influencing adherence and activation (van der Wal & Jaarsma, 2008). Finally, the patient's overall condition as a result of their chronic illness and the complexity of the treatment plan for that illness have a strong influence on people's ability to successfully self-manage their care. As discussed previously, the availability of a prepared health provider team, in a setting that provides the required time and tools to partner with chronically ill patients is also essential.

A number of different terms are prominent in the literature related to patient self-management. These terms include compliance, adherence, readiness for change, and activation. These concepts, while related, describe different phenomenon. Much of the research in this area comes out of the fields of psychology and sociology (Granger, Moser, Harrell, Sandelowski, & Ekman, 2007). I would like to think that the term compliance is no longer actively utilized to describe patient's behavior; however, I believe that is not the case. Compliance refers to the extent to which a patient's behavior corresponds with the health care provider's advice (van der Wal & Jaarsma, 2008). Compliance views the patient in a passive, dependent manner. It doesn't account for the patient's needs or wishes. The term adherence introduces the idea of a collaborative approach to creation of a treatment plan. According to the World Health Organization, adherence refers to the degree to which a patient's self-care behaviors correspond to an agreed upon treatment plan between the provider and patient (van der Wal & Jaarsma, 2008). The decision to adhere to a treatment plan is not a one-time, all or nothing decision. Scotto (2005) completed an ethnographic study of the lived experience of patients with heart failure in relationship to their decisions around adherence. What Scotto found was that patients make daily decisions about adherence. Factors such as personal beliefs, temptation, and unusual circumstances all affected whether the patient followed the treatment plan on a given day (Scotto, 2005).

Clinicians attempting to influence the self-care behaviors of patients often integrate aspects of the Transtheoretical Model (Prochaska, DiClemente, & Norcross, 1992). Assessment of readiness for change helps to guide the clinician in the most effective way to approach a patient. Prochaska et al. (1992) studied change behaviors in people with chemical dependency.

They describe five stages of change: precontemplation, contemplation, preparation, action, and maintenance (Prochaska & Velicer, 1997). In the precontemplation stage people are really not thinking about making a change. If they have thought about it they have decided they do not wish to make a change in the near future. In the contemplation phase people are beginning to think about making a change. They may recognize that the change they are contemplating is in their best interest; however, they don't have the resources or the motivation at this point to actually initiate the change. In the preparation phase people are actively engaged in getting ready to make the change. They may be telling others about their desire to change, beginning to research what they will require to actually make the change, or doing some trial runs. Stage four is the point where people actually take action to make the change. At this point they are committed to the change and are actively working to stay on track. The final phase is known as maintenance. This begins once the lifestyle change has been in place for 6 months. People have more confidence at this point that they will be able to maintain the change and resist temptation but are still working on staying motivated and continuing the behavior. They also must figure out how to respond to setbacks, should they occur, so they can get back on course. Most people don't progress in a linear fashion from one stage to the next (Sneed & Paul, 2003). Rather, they tend to move back and forth between stages for a period of time, testing different approaches, resetting their motivation, before they are able to successfully sustain the change in which they were engaged. Asking patients where they see themselves on a readiness ruler, whether it is 1-3, not ready to contemplate change, or 8-10, trying to change, provides a visual reference for both the patient and the person working with them on change. The clinician guiding the patient adapts their approach depending on where the patient falls on the

readiness ruler or where the clinician assesses the patient to be in the phases of the Transtheoretical Model.

Another research-based approach to intervening to assist patients with behavioral change is motivational interviewing. Motivational interviewing is a style of health coaching that is directed at helping the patient to resolve ambivalence and increase their motivation to change (Linden, Butterworth, & Prochaska, 2010). It was originally described by Miller in response to his study of factors that trigger resistance and conflict between clients and therapists in the setting of chemical dependency (Emmons & Rollnick, 2001). Miller found that patients were likely to become more resistive and actually perpetuate the behavior the therapist was attempting to have them change if the therapist used a confrontational style (Emmons & Rollnick, 2001). Several principles are foundational to motivational interviewing. The health coach or therapist needs to exhibit an empathetic attitude to the patient (Borrelli, 2006). There should be no confrontation between the patient and the coach. There is an assumption that the decision to change belongs to the patient, not the coach (Emmons & Rollnick, 2001). The process of motivational interviewing utilizes reflective listening and objective feedback to try to create mental dissonance for the patient between their current behavior and what they state their goals or beliefs are (Borrelli, 2006). The patient is asked to identify the area of concern. An assessment is made of their understanding of the factors motivating them to continue the behavior as well as the factors that might influence them to change (Borrelli, 2006). The patient's readiness to change is also assessed. Depending on where they patient rates their readiness the health coach utilizes different questions and reflections to try to help patients focus on the reasons they shared that would motivate them

to change. Patients are supported through any movement toward the change and to strengthen their belief that they are capable of making the change (Emmons & Rollnick, 2001). The underlying belief is that if people can talk themselves out of changing behavior they can also talk themselves into changing behavior (Borrelli, 2006).

Research tells us that the most successful chronic illness self-management occurs when a patient is highly activated (Mosen et al., 2007). Helping patients to become engaged in their chronic illness and active self-managers is an essential part of the Chronic Care Model (Bodenheimer et al., 2002). The activated patient is one who has the knowledge, skills, and confidence to accomplish the complex set of activities required to manage one or more chronic conditions on a daily basis. It is not uncommon for patients visiting their primary or specialist provider to be asked to make several major lifestyle changes for prevention or treatment of a chronic condition. This can leave the patient feeling discouraged and overwhelmed. How successfully they are able to implement the changes depends in large part on their activation level (Hibbard & Tusler, 2007). A patient's ability to self-manage accounts for 70-80% of health outcome results (Delaney, 2010). Yet, currently 40-45% of the Medicare population has been assessed to be at a very low activation level.

A large body of work addressing patient activation has been developed by Hibbard and her colleagues at the University of Oregon. The Patient Activation Measure (PAM) is a valid and reliable tool measuring patient knowledge, skills, and confidence related to self-management of chronic illness which is a result of their work (Hibbard, Stockard, Mahoney, & Tusler, 2004). In essence, it measures the extent to which a patient understands their role and feels up to the

task (Delaney, 2010). Hibbard believes that activation is developmental (Hibbard & Tusler, 2007). Chronic illness self-management presents a number of complex skills and decision making challenges for the individual with the illness or their caregiver. Much of what is required to be successful calls for a high level of activation, the requisite knowledge, abilities, motivation, and belief that implementing the complex regimen is possible. Many disease management programs operate with the belief that if they simply provide information to patients, the patient's behavior will change (Hibbard & Tusler, 2007). They tend to take a one-size fits all approach. With this approach patients are asked to engage in behaviors they are not ready for from a developmental perspective.

Hibbard and colleagues advocates for tailoring our interventions and coaching with persons with chronic illness to their level of activation (Hibbard, Greene, & Tusler, 2009). They have identified four stages that individuals progress through in the process of becoming competent managers of their own health care (Hibbard & Tusler, 2007). In stage one, patients do not yet grasp that they must be active participants in managing their own care; they tend to view themselves as passive recipients of care from their providers. In stage two, patients are realizing the need to participate but may lack information about their condition needed to self-manage or may not have put together the big picture of how their activities impact the pathophysiology of their illness. In stage three, patients have the key information they require and are beginning to take action; however, they may lack confidence or some of the required skills to be successful all of the time. By stage four, the patients have made significant progress and have implemented a set of behaviors that allow them to be successful most of the time.

They may still struggle to maintain those behaviors at times, especially when temptation, stress, or unusual circumstances present themselves.

By measuring the patient's activation level, the health coach or clinician gets a clear picture of where this patient is with respect to their knowledge, skills, and ability to self-manage their illness. Armed with this knowledge, the health coach or clinician should tailor their approach to the level of activation of the patient (Hibbard & Tusler, 2007). The goal is to identify a behavior change that the patient would be able to manage with the level of knowledge, skill, and confidence they possess (Hibbard & Tusler, 2007). By taking a slow, step-by-step approach, the patient builds a series of small successes in self-care. It is the experience of being successful that leads to the patient having a sense of mastery and self-efficacy (Hibbard & Tusler, 2007). For patients in stage one, it is recommended that the health coach focus on helping the patient build self-awareness of how their behaviors affect their illness as well as offering basic information about their chronic conditions (Hibbard et al., 2009). For patients in stage two, the health coach is encouraged to use motivational interviewing techniques to help the patient set short term goals and begin to make small changes in behavior, providing lots of support and encouragement (Hibbard et al., 2009). Stage three interventions build on the successes of stage two to continue to add additional behavior changes to the patient's repertoire and assist them in developing problem solving skills (Hibbard et al., 2009). Stage four interventions are focused on maintaining behavior change and dealing with novel situations (Hibbard et al., 2009).

Research evaluating the measurement of activation level and adaptation of health coaching approach to the patient's level of activation has demonstrated positive effects on health outcomes and the costs of care. Hibbard et al. (2009) studied the use of the PAM Tool and a tailored approach to coaching within a disease management program focused on patients with diabetes. The study was a quasi-experimental, pre-post design. They compared data from one year of usual coaching practices against data from patients coached based on their activation level. Their finding indicated an improvement in the intervention group in biometric measurements (BP, LDL cholesterol, and A1C) and adherence to medications over the control group. They also found a statistically significant reduction in utilization of hospital days and emergency room visits for the experimental group compared to the control group resulting in reduced cost.

### **Theoretical Underpinnings of the Nursing Care of Adults with Chronic Illness**

My Doctor of Nursing Practice program provided an opportunity to update and expand upon my knowledge of nursing theory. My initial exploration into the world of nursing theory occurred during my master program in nursing. My master's education occurred between 1978 and 1980. A foundational class for the program was entitled Conceptual Framework. The objective of the course was to explore and analyze the existing theories of nursing and to develop our personal conceptual framework of nursing. It was an era of systems theory in nursing knowledge development. We studied Dorothy Johnson's Behavioral Systems model (Johnson, 1980), Dorothea Orem's Self-Care Deficit Theory (Orem, 1990), and Sister Callista Roy's Adaptation model (Roy, 1974). The worldview presented to us at that time framed

wellness and illness on a continuum. Other common aspects of systems theories were that humans were bio-psycho-social beings who react continually to stressors in their environment, the whole person was greater than the sum of its parts, and systems strive to maintain equilibrium and homeostasis (Tourville & Ingalls, 2003). The role of the nurse was to help the individual or group of individuals react or adapt in a healthy way to the continually changing environment in which they lived (Tourville & Ingalls, 2003).

Dorothea Orem's Self-Care Deficit Theory was the most consistent with my personal conceptual framework of nursing. Orem's (1990) concepts of self-care agency, therapeutic self-care demand, self-care deficit, and nursing agency created a framework I could understand and apply in practice at that point in my development. While nursing's knowledge development has continually developed over the past thirty years, aspects of Dorothea Orem's Self-Care Deficit Theory provide a useful conceptual framework for nursing care of individual's with chronic illness.

Dorothea Orem's Self-Care Deficit Theory originally developed out of her need to create a curriculum for a practical nursing program (Fawcett, 2000). Orem highlighted an extensive set of philosophical claims underlying the Self-Care Deficit Theory. Philosophical claims pertinent to the care of chronically ill individuals include: (a) men, women and children are unitary beings who embody biological and psychobiological features, (b) human beings attain perfection through differentiation of the whole during processes of development, (c) self-care is learned behavior through interpersonal relations and communications, (d) adults have the right and responsibility to care for themselves in ways that maintain their life and health, and

(e) nursing is a creative effort of one human being to help another human being (Fawcett, 2000). Orem's Self-Care Deficit Theory is framed around four concepts. The first concept is that of self-care which is defined as those activities performed independently by an individual to maintain their life, health and well-being (Fawcett, 2000). The second concept is self-care agency which refers to the individual's ability to perform self-care activities (Fawcett, 2000). The third concept is therapeutic self-care demand, meaning the set of actions or measures that individuals are required to perform to maintain their human functioning and development (Fawcett, 2000). This includes everything from basic human needs such as food and water, to developmental needs and needs that present themselves when the individual has changes in their health status. The last concept is that of self-care deficit. A self-care deficit occurs when therapeutic self-care demands exceed the individual's self-care agency (Fawcett, 2000). The existence of a self-care deficit implies the need for nursing.

Orem's Self-Care Deficit Theory provided a framework from which to conceptualize the work of the clinic-based care managers as they interact with heart failure patients. Orem's philosophical claims emphasize the importance of viewing each person with whom the care managers interact as a unique human being who is in the process of developing to fully express their uniqueness. These individuals have the responsibility to care for themselves but need the care manager's support and guidance as they bridge the gap between their self-care deficit and their self-care agency.

As a part of my coursework for my Doctor of Nursing Practice program, I was exposed to the work of Margaret Newman. Margaret Newman's Theory of Health as Expanding

Consciousness was developed in the 1980s, after I had completed my master's program (Fawcett, 2000). While I do not claim to fully understand Newman's theory, the aspects I have grasped have helped to transform my thinking about the concept of health. Newman promotes the idea of health encompassing all aspects of the person, including any disease if it exists (Newman, 2008). Newman believes that a person with a chronic condition is not necessarily ill.

Two key concepts in the Theory of Health as Expanding Consciousness are consciousness and pattern (Newman, 2008). Newman defines consciousness as the quantity and quality of the interaction between the systems of the person and the environment. Consciousness should always be expanding. The theory asserts that every person, in every situation, no matter how disordered it may seem, is part of a process of expanding consciousness (Newman, 2008). Through this process the person becomes more of themselves, finds greater meaning in life and increases their connectedness with others in the world around them (Newman, 2008). Health is then defined as expansion of consciousness. Pattern is identified as the unique, evolving wholeness of the person (Fawcett, 2000). Behavior is a reflection of the pattern. In this way pathological conditions can be viewed as an expression of the pattern of the individual (Newman, 2008). The work of nursing is not to prevent illness or eliminate illness when it occurs but to recognize the pattern and accept what meaning it had for the individual (Fawcett, 2000). The nursing role is to help the person utilize the power they have within themselves to evolve towards higher levels of expanding consciousness (Newman, 2008). Caring for the patient is uppermost in nursing's mission (Newman, 2008).

Newman (2008) recommends interviewing patients to identify the most meaningful people and events in their lives as a means of recognizing the key patterns that are representative of the person's consciousness. In the process, the nurse helps the patient to recognize their own patterns, such that both the nurse and patient may experience insights into significant patterns contributing to illness and health. During the course of my work with the clinic-based care managers, we talked about Margaret Newman's theory and the intervention of taking time to ask their heart failure patients about the most meaningful persons and events in their lives. The importance of forming relationships with patients in this way as well as identifying patterns in the patient's lives was seen as useful by the care managers. Their major concern was time constraints as they felt they had a lot to cover in a few precious interactions with the patient. The idea of recognizing patterns and how that might help or hinder a person's ability to self-manage made sense to them and some of the care managers indicated willingness to at least trial the process in the course of their interactions with patients.

### **Summary**

The broad scope of my project resulted in a rather wide ranging review of the literature. My exposure to current literature in the areas reviewed above has significantly broadened my knowledge base in the area of chronic illness, particularly in the area of heart failure. Completion of this review has helped me continue the process of synthesizing this wealth of information into usable information I may apply in practice. I anticipate this will continue to be an area of exploration as chronic illness continues to be a major focus of my work.

## **Chapter Three**

### **Project Design and Methodology**

#### **Introduction**

The heart failure process improvement project at my health system met all of the requirements I had outlined for my systems change project. It involved a health system-wide change focused on improving care delivery to a population of patients with chronic illness. It presented an opportunity to conduct a project that would make a meaningful contribution to my employer. Lastly, it included a strong emphasis on supporting patients to be better self-managers of their care. Not only did multiple people direct me to focus on some aspect of this project, it felt like an excellent fit right from the start. This chapter will describe the progression of events involved in the design of my systems change project. It will also describe the methodology utilized to implement the project. Finally, this chapter will address ethical considerations and return on investment.

#### **Identification of Project Focus**

As I was learning about the heart failure process improvement project, I conducted a series of informational interviews to help me identify a specific area of focus for my systems change project. My first interview was with my supervisor. She had responsibility for the clinic-based care management program, in addition to the program in which I am employed. She was strongly in support of my participation in some aspect of the heart failure project and believed she could benefit from my involvement. She had me invited to the System-Wide Heart Failure

Steering Committee. Participation on this group gave me a stronger understanding of the approaches the committee was engaged in. It quickly became apparent that the focus of their work was on systems change during hospitalization and at discharge for the heart failure patients. An integral member of the System-Wide Heart Failure Steering Committee was a woman who has the role of Performance Improvement Consultant. I met with her for my second informational interview to learn more details about the history of the project and to understand data sources utilized to build outcome reports shared at committee meetings. Again, she was very welcoming of my participation and offered to help me in any way she could. I also met with the Director of Nursing Research at one of the hospitals in my health system. She was a friend and former colleague of mine who had great perspective on the heart failure project, experience in completing doctoral work, and knowledge of the Institutional Review Board. She was able to provide valuable insights in each of those areas and has been a wonderful touchstone throughout the project. My final informational interview was with the Director of Palliative Care at my health system. She provided helpful background regarding the long range goals and financial incentives driving my health system to engage in process improvement for chronic illness management. She encouraged me to read *Crossing the Quality Chasm: A New Health System for the 21<sup>st</sup> Century* (Institute of Medicine, 2001) because the book provided a framework for my employer's strategic objectives related to health system reform and improvement. She was actually the person who pointed me in the direction of the work of the clinic-based care managers, sharing that they had recently transitioned into a new role focused on supporting heart failure patients post-discharge. It was

that piece of information that seized my attention and my passion for this project: it was a perfect fit for what I had in mind.

Before making a final decision to focus on helping the clinic-based care managers develop a model of care for community-dwelling heart failure patients, I needed approval from three entities: my academic advisor, my supervisor, and the care managers. My academic advisor was very supportive of my project concept and had wonderful suggestions for how to approach it. My supervisor, who also happened to be the care manager's supervisor, was also supportive of this area of focus. She quickly agreed to be my site mentor. I requested an opportunity to explore the idea with the clinic-based care managers and was able to join them at one of their regularly scheduled meetings. The clinic-based care managers were also welcoming and supportive of my idea for my systems change project. With the approval and support of these key stakeholders I solidified my project purpose and moved on to literature review and formal approvals.

### **Project Proposal**

As stated previously, my initial project concept was quite broad in scope. I envisioned building multiple aspects of the model of care for community-dwelling patients with heart failure in collaboration with the clinic-based care managers. With this in mind, my review of the literature was equally broad and seemingly endless. As spring semester approached the mid-point, my academic advisor coached me to stop reading and begin writing. She advised that through the process of writing I would more effectively narrow the information I required from the literature. In addition, I needed to work around the deadlines of the St. Catherine

University Institutional Review Board to be able to continue my work during the summer months. This was an excellent piece of advice.

The process of writing my applications to the Institutional Review Boards forced me to clarify and solidify the research questions, purpose, methodology, participants, and data management related to my systems change project. At this stage, based upon my preliminary discussions with key stakeholders and intended methodology, I purposely left the scope of the project fairly broad. I was not completely certain where the needs of the clinic-based care managers or the needs of the heart failure population might lead me during the course of the systems change project.

The stated purpose of my systems change project was to design a model of nursing care management for a population of high risk, community-dwelling individuals with heart failure. To design the model I planned to engage the clinic-based care managers in a participatory action research process, providing best evidence from the literature. This literature was offered to the nurse care managers to guide development of the model and to ensure that the development of the model was evidence-based. Key objectives of the project were to (a) design and implement an evidence-based model of care management for community-dwelling individuals with heart failure by engaging an identified group of nurse care managers in a participatory action research process, (b) improve the competency of the nurse care managers in engaging with individuals with heart failure to increase their self-management capacity, and (c) improve systems to increase the consistency with which the nurse care manager's practice patterns follow the newly designed model of care. I identified the following research questions:

(a) What do nurse care managers believe about the impact of inconsistencies in processes of care delivery on outcomes for individuals with heart failure? and (b) What model of care would be structured by nurse care managers to meet the stated objectives of a care management program for high risk heart failure patients when guided through a participatory action research process?

The planned methodology for my systems change project was in large part based upon a participatory action research process. I had not utilized participatory action research methodology previously; however, I had read two books on the topic and the methodology seemed comparable to other training I'd had in process improvement. I felt confident utilizing a participatory action research approach in the design of my project methodology. One of my initial planned steps, after obtaining consent from the clinic-based care managers, was to educate them about a participatory action research process. To narrow the scope of the project, I planned to conduct a needs assessment involving key stakeholders, including the clinic-based care managers and administrators responsible for decision making about the value of the care management program. As a part of the needs assessment, I planned to develop a detailed outline of the care delivery model. I assumed the needs assessment and description of the current state of the care management model would help the clinic-based care managers and me to identify gaps and opportunities in the current model of care.

The next phase of my planned methodology was to engage the clinic-based care managers in a dialogue about priorities for action. Following selection of priorities, a structure would be planned to address each priority area. I envisioned both large group and small group

activity to clarify the specific priority the group was addressing, set objectives, conduct a review of available literature, seek out resources within our health system, identify alternative approaches to address the priority area of the model, utilize criteria to select the preferred approach, and plan for implementation. To complete the process, the methodology also included determining an evaluation process; revising the intervention when necessary; communicating to other areas of the organization and potentially outside the organization; and documenting best practices in policies, procedures, workflows, or competency descriptions.

I proposed a purposive sample of clinic-based care managers involved in the care of heart failure patients at my health system to be the participants of my systems change project. A consent form was developed to assure informed consent (see Appendix A). A plan was developed to protect the confidentiality of data collected during the project. The investigator was the only person with access to individual data. Any data shared from the project was aggregated to maintain the participant's anonymity.

### **Project Approval**

As a student at St. Catherine University conducting my systems change project at my health system, I required approval from both organization's Institutional Review Boards. I first applied to the St. Catherine University Institutional Review Board. I applied for an exempt review of my systems change project based upon the fact that my project involved very minimal or no risk to my participants, who are the clinic-based care managers. I received approval of my study from St Catherine University as an exempt study.

I next applied to my employer's Institutional Review Board. The Director of Nursing Research at one of the health system hospitals was tremendously helpful in reviewing my application and making recommendations regarding content and formatting prior to this submission. My employer's Institutional Review Board did not deem the study to be exempt and reviewed it under expedited review. They responded that approval was granted pending submission of additional supporting documents and clarification of time requirements for the participants. I obtained a letter of approval from the clinic-based care manager's supervisor and my academic advisor. I also developed a document which outlined the estimated time requirement for the clinic-based care managers based upon the proposed methodology. These supporting documents were submitted to my employer's Institutional Review Board. I received final approval from my employer's Institutional Review Board under expedited review.

### **Thirty Day Transition Coach Pilot**

Inclusion in the work of the heart failure process improvement project at my health system was never a problem. Almost as soon as I selected heart failure care management as my area of focus, I began to receive invitations to participate on committees, workgroups, and related projects. These opportunities were sometimes related to my systems change project and sometimes not related. While I awaited approval of my project, I participated in completing this peripheral work without crossing the boundary into work that was part of my project. The 30-day transition coach pilot was such a project.

Prior to the start of my project there were two separate roles involved in the care management of heart failure patients in the immediate post-discharge period. In addition to

the clinic-based care managers, there were also heart failure home visit nurses employed by my health system. The clinic-based care managers saw patients who received care in clinics within the health system, were involved as long as they believed necessary, and accomplished much of their work telephonically. The heart failure home visit nurses saw primarily patients who received primary care in clinics outside of my health system but who had been hospitalized in one my health system's hospitals. Their services focused on self-management education and were normally delivered as part of a one-time visit in the home. Home visits by the heart failure home visit nurses were offered by my health system's Contact Center staff during follow-up phone calls to heart failure patients in the first couple of days post-discharge. Initially, heart failure patients had to meet specified criteria to receive a visit. Eventually these visits were offered to all heart failure patients, when additional strategies were needed to address a continued high readmission rate. As the clinic-based care managers entered their roles and became established in clinics within my health system, they took over the role of the heart failure home visit nurses for patients of those clinics.

At the start of my project, heart failure readmission rates were not at the target rate. Review of readmissions indicated that many of the patients returning to the hospital within 30 days were patients from primary care clinics outside my health system. In addition, patients who were readmitted were often already back in the hospital within the first seven days post-discharge. The Heart Failure Steering Committee believed that the inability to influence the actions and systems in clinics outside our health system was one factor creating higher rates of readmission for these patients. They also believed that there was too long a lag between discharge and connection with a care manager. The Director of Care Management was asked

to quickly establish a pilot project to test implementation of a transition coach program for all heart failure discharges from two of our health system's hospitals. The structure of the pilot was to be based on the work of Coleman and his colleagues from the University of Colorado Health Sciences Center (Coleman, Parry, Chalmers, & Min, 2006). I was asked to participate in the design and implementation of the pilot. I had previous training in the Care Transitions Intervention, an evidence-based approach to assisting patients to learn and manage the important tasks placed upon them in the immediate post-hospital period (Coleman et al., 2006).

Initiation of this pilot involved (a) selecting elements of the Care Transitions Intervention (Coleman et al., 2006) we wanted a nurse care manager to implement, (b) working out systems for identification and referral of patients to the pilot, (c) communicating with the heart failure inpatient team, and (d) designing a process for outcome reporting. I was involved with the initial design. The Director of Care Management selected two of the heart failure home visit nurses to implement the pilot. I shared information from the literature about the Care Transitions Intervention with them. We set up a protocol which involved the heart failure home visit nurse seeing the patient in the hospital, contacting the patient by phone within 48 hours of discharge, completing a home visit within seven days, and then scheduling follow-up phone calls or visits based upon their assessment of patient need. The focus of their work during phone conversations and visits was medication reconciliation and assessment of adherence to the treatment protocol; self-management support for administering medication, weight monitoring, identifying warning signs and responding to their appearance; and preparing for primary care visits. We then met with key members of the heart failure teams at

the two hospitals selected for the pilot. The focus of these meetings was to explain the purpose and methodology of the pilot and to work out a system for referral of patients. I also assisted with communicating details about the pilot to the Contact Center staff, who were responsible for making outbound calls to all heart failure discharges within the first 72 hours post-hospitalization, and to the Heart Failure Steering Committee. All of this occurred over approximately a 2-week period prior to go-live of the pilot.

I remained involved through the first month of the pilot. During this month there were weekly phone conferences with all the key stakeholders to review the events of the week, identify problems with our process, make decisions regarding next steps, and review the data about readmission rates. It quickly became clear that having the heart failure home visit nurses see patients during their hospital admission wasn't going to be possible. The team identified short lengths of stay, delay in establishing a diagnosis of heart failure, and involvement of the inpatient heart failure team late in the patient's admission as barriers to notifying the heart failure home visit nurses of a patient who would be referred to the pilot. These barriers resulted in patients being identified for the pilot on either the day prior to or the day of discharge in many instances. The team decided to eliminate the expectation that the heart failure home visit nurse would visit the patient while they were still in the hospital. At the end of the first month outcome measures indicated a reduction in readmission rates for patients in the pilot. It was decided to continue the pilot for another month because there were still systems issues to resolve. I ended my involvement in the pilot at this point when my systems change project was approved and I needed to focus my attention there.

## **Systems Change Project Begins**

With Institutional Review Board approvals in hand, I moved quickly to get my systems change project underway. I was on the agenda of the clinic-based care managers' next regularly scheduled bi-monthly meeting. I used that meeting to provide the care managers with background about the project and to obtain their informed consent (see Appendix A). All of the clinic-based care managers employed at that time by my health system gave consent to participate in the project except one care manager who was on vacation. That care manager was contacted by phone and mailed the consent form. She returned the signed consent form within one week of her return to work. Over the 10-month period I interacted with the clinic-based care managers, two care managers left the group to seek other employment and one new care manager was added to the group. Informed consent was obtained from the newly hired care manager at the first meeting we attended together.

At my first official meeting with the care managers, we also discussed how we would work together. The care managers expressed they were busy with work responsibilities and preferred that I fit as much interaction into their regularly scheduled meetings as possible. The group felt they could spare about a half-hour out of each meeting initially. There were times when other agenda items took precedence, interfering with my opportunity to meet with them. Sometimes I would still attend the meetings if the agenda items were pertinent to my project. Other times weeks went by with no forward progress. This became a barrier to my ability to effectively meet the objectives of the project. They were agreeable to small group meetings when necessary but asked that these be kept to a minimum.

Early in our work together I also introduced the care manager team to collaborative action research. I acquainted them with the framework of collaborative action research through a power point presentation. The care managers had the opportunity to ask questions; however, they seemed to find the information fairly straight forward.

### **Needs Assessment**

The first step of collaborative action research is problem formulation and research design. To begin the process of problem formulation I led the care managers through a short process to identify what they perceived to be the top areas for process improvement. I began by asking them to think about their work life. I asked them to think about their primary roles as clinic-based care managers, including the heart failure patient population as well as other roles they fulfill. I asked them to mentally review their last week at work, focusing on frustrations, barriers to getting work done, and time wasters. I asked them to think about areas of their work where they felt they lacked knowledge or skills to competently care for patients. I also asked them about ideas they had for resources that might help them to improve their performance at work. After giving them a few minutes to think about these questions, I provided them with a piece of paper on which was written: Top things I would like to see us focus on in the next 4-6 months for process improvement. The care managers were given time to complete their thoughts, respond to the question, and turn the responses back to me.

Responses from the care managers were summarized under five categories: (a) model of care, (b) systems, (c) care manager practice, (d) measures, and (e) marketing and communications (see Appendix B). I added several areas based upon previous discussions with

key stakeholders. I also highlighted items that were actively being addressed in workgroups. To facilitate discussion with the care managers, I also grouped their responses into major themes. To establish priorities, I led the group in a discussion regarding where to begin our work. Several priorities arose from this discussion. The care managers raised time management as their top priority; however, their supervisor intervened to suggest that this was an area that care managers should focus on with their leadership. Workflow was a second area of concern. The care managers were still struggling with getting referrals on a consistent basis, knowing when and how frequently to contact patients, and when to disengage. Lastly, the care managers raised documentation as a major concern. At this point, they were doing most of their documentation electronically. They were finding that the documentation templates they had did not always fit the situation of the patient. For example, if the patient was discharged to a transitional care unit, the assessment templates didn't fit. There was also a need for an electronic plan of care to be incorporated into the electronic medical record. As a group it was decided that we would focus on workflow as our first priority and then move to documentation.

### **Workflow Design**

Building systems that automate the workflow for a process is one means of stabilizing a process to assure that it happens consistently each time it is required. The clinic-based care managers were quite clear that the system that was not working for them and what most affected their productivity and effectiveness was the process of referral of patients to the care manager. As the work of the Heart Failure Steering Committee began to shift from inpatient

processes to outpatient processes, this became a priority and was identified as one of the key strategies for 2009. I was initially identified as the person responsible for leading the work addressing referral of heart failure patients during the discharge period to the clinic-based care managers.

At the beginning of our work together, the care managers were identifying heart failure patients to add to their caseload by reviewing reports, in the electronic medical record, of all patients from their assigned clinics who were hospitalized. For some care managers this meant reviewing reports from multiple clinics in multiple hospitals. For each person from their clinic, identified as an inpatient, the care manager scanned the problem list and inpatient notes to determine if the patient had heart failure. If they had heart failure they were added to the care manager's list of potential caseload members. The care managers also had to make certain the patient wasn't open to home care or being admitted to a skilled nursing facility. If those factors were true, the clinic-based care manager didn't get involved until the patient was discharged from home care or the skilled nursing facility. Occasionally the care manager received a referral from a provider in the primary care or cardiology clinic, home care nurse, or the Contact Center. At one point in their evolution, the clinic-based care managers were spending 1-2 hours per day creating lists of patients they needed to contact to determine if they should be entered onto their caseload. This inefficient process kept them from spending as much time with patients as they potentially could have.

The second step of collaborative action research is data collection. To facilitate improvement in the referral process for the clinic-based care managers, I needed to understand

what was in place, what was possible, and what a good solution should look like. This work went through several phases before a solution was implemented.

I initially gathered information from the care managers to understand their current process, what they required as a solution, and barriers they saw in the way of getting to a solution. In the beginning, I struggled to know how to approach this problem. I didn't know the electronic medical record or the personnel within my health system who might understand the systems well enough to assist me in problem solving. I also didn't understand the processes that were in place for heart failure patients as they transitioned out of the hospital. My site mentor, who happened to be both the care managers' and my supervisor, was very helpful in steering me to the right people. I put together a small workgroup with representation from the inpatient heart failure teams, home care, clinic-based care management, and the Contact Center. The Referral to Care Management Workgroup began by mapping out all of the existing processes that potentially could result in a referral to the clinic-based care managers (see Appendix C). As it turned out, there were multiple routes by which this could occur. We discussed barriers standing in the way of referrals to the care managers. We also brainstormed potential or ideal solutions to achieve consistent, efficient referrals. This preliminary information was shared with the leadership of the Heart Failure Steering Committee. The committee leaders believed we required both a short-term and a long-term solution to the referral to care management process. A short-term solution was needed because inpatient personnel were becoming more aware of the availability of the clinic-based care managers and wanted an immediate process for contacting them. A long-term solution would be a process that would automate the referrals to the care managers.

The Referral to Care Management Workgroup continued its work focused on a two-stage solution. Inpatient staff indicated they were looking for a single access point to make a referral to care management as a short-term solution. We eventually settled on my health system's Care Navigation help desk as that single access point. Care Navigation was a new service designed as a one-stop access point for patients, families, and providers to get information about services inside and outside of my health system. It was based within the same division of the health system as the clinic-based care managers. Care Navigation was also staffed 24 hours per day, seven days per week which was ideal. After settling on this idea, I worked with the Care Navigation staff, the Contact Center staff, and the Heart Failure Steering Committee to finalize the process and educate stakeholders about this method of referral.

A longer term solution was more complicated. The Referral to Care Management Workgroup was aware of a report that pulled the names of patients who were likely to have heart failure. I met with staff from the information technology and clinical decision support departments at my health system to learn more about this report. I learned that this report created a potential list of patients with heart failure, because it filtered for many variables in addition to heart failure. What we were looking for was a report that provided more specificity. The information technology and clinical decision support staff believed this was possible but needed us to create very specific criteria to create the logic behind who did and did not go into the clinic-based care manager's referral report. As a starting place, the care managers needed to define the specific criteria that qualified an individual to be on their caseload. I utilized my next meeting with the care managers to create these criteria and forwarded them to my contact within information technology (see Appendix D). As it turned out, the admission

criteria became a moving target as the model of care for heart failure patients continued to change. The care managers did eventually end up with a useful report from the electronic medical record that allowed them to identify inpatients that had heart failure and which could be sorted by clinic.

At about this time the focus on outpatient processes for heart failure patients intensified. My site mentor and her department head identified the need for a system-wide workgroup which would tackle the broader scope of transitions at discharge for heart failure patients. This workgroup, known as the Care Continuum Heart Failure Steering Committee, subsumed the work of the Referral to Care Management Workgroup which was disbanded. I participated on the Care Continuum Heart Failure Steering Committee and was asked to participate in a subgroup focused on reliable decision making at discharge. The purpose of the Reliable Decision Making at Discharge subgroup was to identify the most reliable and efficient tools and processes to guide inpatient staff in developing an effective discharge plan for heart failure patients. While this didn't directly involve the clinic-based care managers, it had the potential to influence which patients were referred to them.

The Reliable Decision Making at Discharge subgroup struggled through the first several meetings trying to gain clarity about their purpose and the deliverables expected from us. I conducted an initial review of the literature, as did several other members of the group. I identified a valid and reliable tool designed to predict patient's needs at discharge known as the Blaylock Risk Assessment Screen (Blaylock & Cason, 1992). Several other tools were presented. The Blaylock Risk Assessment Screen had been utilized previously at my health system and was

still in use by some of the hospitals on occasion. The tool had been abandoned by the nurses in other hospitals because they believed it was too long and the information required to complete it wasn't available at the time of admission, which is when they really wanted to use it. None of the other tools presented really met the need that we had.

To move the group forward, I completed a more extensive review of the literature, focused on criteria that were predictive of the need for non-routine discharge planning in hospitalized patients. I abstracted from the literature the most common criteria that predicted poor discharge outcomes (see Appendix E). The most common indicators included age 75 or older, fair or poor self-rating of health, multiple co-morbid conditions, impaired functional or cognitive status, absence of social support or a caregiver, readmissions in the past 6 months, and history of nonadherence to the therapeutic regimen (Anderson et al., 2006; Bowles, Naylor, & Foust, 2002; Holland et al., 2003; Naylor, 2000; Tanaka, Yamamoto, Kita, & Yokode, 2007). I also shared an article by Birmingham (2009) that outlined recommended levels of care based upon patient characteristics (see Appendix F). The recommendations were based upon the Case Management Society of America 2002 Standards of Practice for Case Management (Birmingham, 2009). These recommendations were offered to the subgroup as a framework to guide inpatient staff in their decision making at discharge. The evidence-based criteria for non-routine discharge planning and recommended level of care based on patient characteristics were shared with Care Continuum Heart Failure Steering Committee as recommendations from our group. The larger steering committee ended up making some modifications to the tools to make them simpler to use. At this point the Reliable Decision Making at Discharge subgroup disbanded. I am not certain whether the work of the Care Continuum Heart Failure Steering

Committee has been completed. The clinic-based care managers report that identification of patients for care management has become much simpler and the process is working quite well for them now.

### **Model of Care**

One of the most difficult aspects about my systems change project was being only one source of influence on changes impacting the clinic-based care managers' work. Multiple entities were vested in the outcomes of the care management program. Decision makers changed over time. I would head in a direction with the care manager group that, via consensus, we agreed was the direction we needed to take and within a couple of weeks the priorities might change. This reflects the reality of the rapidly changing environment of health care. An example of this type of change occurred about 6 weeks into my systems change project.

I was scheduled to meet with the clinic-based care managers at one of their regularly scheduled meetings. The primary agenda that day was a conversation between the care managers, Chief Medical Officer for my health system's clinics, and the Chair of the Heart Failure Steering Committee. For over an hour they explored the care managers' current work, what was working, and what was not working in the care management program. Near the end of the conversation, the Chief Medical Officer indicated that the 30-day transition coach pilot at the two health system hospitals had resulted in improvement in readmission rates. He asked that the care managers change their process, from their current practice, to a 30-day transition coach approach. The emphasis was on frequent contact within the first 7 days, followed by

continued contact over the 30-day period. He also asked that a phone call to the patient occur within 24-72 hours of discharge and that the care managers consistently make a home visit within the first week. Initially this would involve patients whose primary clinic was within our health system only. The possibility of adding patients from clinics outside our health system, but who had been hospitalized at one of my health system's hospitals, was left open.

In the space of an hour, the care management model of care for community-dwelling patients with heart failure changed dramatically. The clinic-based care managers were initially skeptical of their ability to make this change. They negotiated priorities with their supervisor, changing expectations for other aspects of their work to allow the time required to concentrate their efforts with their heart failure patients. Some of the ideas I had planned to explore with the care managers, based on evidence from the literature, were suddenly being implemented at the direction of senior leadership. I chalked it up to the nature of systems change and adjusted my approach with the care managers accordingly.

As part of my methodology, and to facilitate ongoing needs assessment. I worked with the clinic-based care managers to map the current state of the care management model for heart failure patients (see Appendix G). To accomplish this, the group was divided into four small groups. The four groups were focused on patient identification, initial contact, home visit, and telephonic encounters. Each group was provided a set of questions to elicit the details of their area of focus. Responses were compiled into a detailed description of the current state of the model of care. This description was reviewed with the care managers to confirm that its content was accurate at that point in time. We then utilized this description to

highlight areas of the model where there was inconsistent practice among the care managers and to continue to prioritize the focus of our work together. Overall, there was a high level of consistency among the care managers in the pattern of contact, assessments, and goals and content of their coaching. Documentation continued to be an area of concern. They also continued to look for patient education resources and strategies to engage patients who were poorly motivated to self-manage their care. The description of the current state of the model of care was shared with the care managers' leadership and the Manager of Leadership and Development who has utilized it in preparation of care manager competencies.

### **Documentation**

Documentation was repeatedly identified as an area in need of improvement by the care managers and their supervisor. I had limited knowledge of the care managers' documentation system or the specific improvement they were looking for. For that reason, I returned to the second phase of collaborative action research: data collection. I was not familiar with the electronic medical record or the templates used by the care managers to document their assessments and notes. To learn more about the care managers' processes, I spent time with one of the care managers who was willing to walk me through their current documentation system. I also obtained access to the "playground" for the electronic medical record so I could practice documenting as a care manager. I used our discussion time to elicit what the care managers and their supervisor wanted to focus on for improvement.

One aspect of documentation that was becoming a priority for the care managers was development of a plan of care for heart failure patients. They were operating with a paper

document that was quite cumbersome for them to use. There was consensus from the care managers and their supervisor that I should help them to focus on development of a plan of care that would be a part of the electronic medical record. The plan of care was a requirement for some of the health plans. It was also required by the state for patients enrolled in a health care home, known as a medical home at my health system. My employer was in the process of becoming certified as a medical home and the heart failure patients were all to be a part of this concept. I met with the Medical Home Project Coordinator to learn more about documentation requirements for medical home certification. She was very helpful in specifying criteria that would need to be met. I also reviewed requirements from the health plans related to plan of care. In addition, I completed a literature review to make certain we were utilizing the most current and complete guidelines for care management of heart failure patients.

Simultaneously, the care management group attracted the attention of the Clinical Decision Support department, a group of individuals focused on building resources within the electronic medical record which support efficient, evidence-based practice. Clinical Decision Support had agreed to partner with the care managers on design of tools within the electronic medical record to support their work. I met with representatives of this group on several occasions. It became clear that lack of certainty by the care managers about the capabilities of the electronic medical record was preventing them from being very specific about what they wanted. Clinical Decision Support staff encouraged us to focus on content rather than the technical design.

The care manager group was told that we were on a short timeline to identify key content for heart failure care management because the Clinical Decision Support team would only be available to them for a short period of time. I pulled together some ideas, based on my review of the literature, in an attempt to launch discussion within the group. First, I shared recommendations for elements to include in assessment, documentation, or care planning (see Appendix H). These elements were a combination of evidence-based recommendations associated with factors affecting patient's success with self-management of chronic illness and risk factors for readmission. Second, I shared some ideas for documentation workflow (see Appendix I). The ideas in this document were based on my incomplete knowledge of the care managers' work and an attempt to incorporate evidence-based assessments and interventions into their practice. Most of my ideas were soundly rejected by the care manager group. They saw several barriers including limited time, existing templates that could not be changed because they were mandated for use by the heart failure process improvement project, and what I sensed as a lack of credibility on my part. Our interaction around these recommendations was not surprising given that the recommendations primarily served my purposes in generating ideas and making the random concepts in my mind more concrete. The end result was the formation of a small workgroup whose purpose was to develop the content of a plan of care for heart failure patients and bring it as a recommendation to the larger group.

The small workgroup for plan of care development included two care managers who were familiar with the electronic medical record and health plan requirements for plan of care, the Manager of Leadership and Development, and me. We reviewed the current plan of care, health plan requirements, and ideas each of us had. We also discussed the characteristics of

what the ideal end result should look like. The care managers wanted a plan of care that was adaptable to the unique needs of their patients, efficient to use, relevant to their actual work, and suitable to share with patients. One of the health plans required that patients receive a copy of their plan of care. The idea was to develop one plan of care that met the needs of patients and the care managers. We then came to consensus on the structure and elements of the format for the plan of care. With those elements of the framework identified, the content for the plan of care document was easily developed. The plan of care document was shared with and approved by the care manager group and their supervisor (see Appendix J). It was provided to Clinical Decision Support who planned to use the information in the development of elements of the electronic medical record for the care managers.

With the plan of care content complete and the involvement of Clinical Decision Support, my participation in further development of the documentation system was deemed no longer necessary. At this point, I was feeling pretty frustrated. The priorities expressed to me by the clinic-based care managers had also been communicated to their leadership. Multiple people from my health system were involved in solving the concerns expressed by the care managers, because the heart failure project was a key objective and the care managers were a valuable resource. I really was not in a position to take a leadership role with much of the work that needed to be addressed. I stepped back and reviewed our original needs assessment, applying the benefit of knowledge gained through my experiences over the previous 6 months. I recognized that I needed to shift focus to an identified need that was not in a rapid development cycle and was not currently being addressed by other leaders or departments. It was important to me to have a completed outcome that would be of benefit to the group by

the completion of my project. While I had completed a tremendous amount of work, I had dabbled in many areas without effectively guiding the group through a completed change process. After reviewing the needs assessment, I approached the care managers about two identified areas of need that I believed we could realistically accomplish within the timeframe of my project. The first was development of a centralized resource file to organize existing resources and fill gaps in resources care managers needed but did not have. The second was to build a toolbox of evidence-based resources care managers could access to coach patients to take a more active role in their chronic illness self-management. The care managers agreed that these continued to be areas of need and it would be valuable to work together to develop these resources.

### **Development of a Resource File**

Data collection for this part of my systems change project began by dialoguing with the care managers about resources they found valuable and used frequently, those that were difficult to locate, and gaps in available resources they wanted to have filled. Resource needs fell into three primary areas: care manager competency development, reference material, and patient education. The Manager of Care Management shared that she had been thinking about the need for more efficient and complete access to resources. She was hoping information could include current evidence-based guidelines and information on pathophysiology. We also discussed where the resource file should be located to be most accessible to the care managers.

As part of data collection, I catalogued all of the pertinent, available resources I could identify from current files on the care managers' shared network drive, the health system's shared reference website, and emails that contained references to resources. Each item was catalogued on a spreadsheet, including its title, primary subject area, location, date of origin, and content. This allowed us to sort the information in a variety of ways to facilitate regrouping. This summary of resources was shared with the care managers. I asked them to evaluate what was still of value, no longer needed, or missing. The care managers were only able to identify a couple of items they had been searching for as patient resources. This included free low sodium cookbooks or recipe ideas and guides for eating out in the Twin Cities area.

One of the ideas we explored was the use of a share-point site or Wiki to serve as both a central location for resources and a site to make electronic communication between the care managers easier. Most of their interaction, between face-to-face meetings, was conducted via email. They would end up with long email strings or multiple individual emails as they debated an issue or responded to requests for information. This medium made it difficult to follow the progression of a conversation or to gather individual comments in one place. I connected with the Marketing and Communications Assistant for our division of the health system to explore available electronic resources within the health system network. Some of the resources accessed by the care managers and discussions they engaged in were proprietary. A secure share-point or Wiki site within the health system network was essential. The Marketing and Communications Assistant suggested that I evaluate a part of the health system Learning Management System (SABA) known as My Communities. My Communities is a forum that

allows participants in the community to share documents and participate in online discussions. One part of My Communities was a Wiki. I experimented with the site and brought the information back to the care manager group. We ultimately decided it didn't have the capabilities we were looking for to improve communication. The care managers decided to continue to utilize the shared drive for their resource files because it was familiar. The focus became improving the organization of materials in the resource file and seeking resources to fill gaps in information.

I took the information I had gathered and, working independently, sought resources that met the requirements the care managers had requested. I reviewed resources I found with the care managers to make certain what I found was meeting their needs. Resources were then organized into folders by diagnosis or major subject heading (see Appendix K). The selected diagnoses were those which qualified patients for entry into a medical home. They included asthma, chronic obstructive pulmonary disease, depression, diabetes, heart failure, and vascular disease. Other major subject headings were chronic illness, health literacy, and patient activation. Each diagnosis folder contained subfolders labeled care manager resources, evidence-based guidelines, pathophysiology, and patient resources (see Appendix L). Once completed, I shared the resource file with the care managers to make certain they were fully aware of the content. We had a discussion about ongoing administration of the file to make certain it remained up to date. The final decision about administration of the resource file was left with the Manager of Care Management.

### **Patient Activation**

The final deliverable for my systems change project was construction of a toolbox of resources related to patient activation. Over the 10 months I interacted with the care managers, I noted that they often sought continuing education and other resources related to patient activation, motivational interviewing, and similar topics. They frequently discussed their most difficult patients at their bimonthly meetings; usually these included those individuals who were poorly motivated or wouldn't follow a treatment plan. Advancing my knowledge of approaches to self-management education for people with chronic illness was one of my principal goals upon beginning my doctoral program. Out of all of the subject matter I had reviewed in connection with my systems change project, this was the area I was most anxious to research.

In discussion with the care managers, I learned that there was significant variability in the knowledge level about patient activation and self-management education within the group. Some of the care managers required a fairly basic overview; others were ready for more depth. All of the care managers were registered for a full-day workshop on motivational interviewing in the coming weeks. In my assessment, I believed I would be most effective providing them with a comprehensive overview as well as a set of tools that might be useful when working with patients. My intent was to build a basic foundation for all of the care managers to work from.

Over the 2 years of my Doctor of Nursing Practice program, I had located and archived quite a number of resources related to the topic of self-management education. I began a more intensive search, broadening my search topics, and was quickly overwhelmed by the number of citations accessible to me. I looked for source documents, randomized controlled

trials, and “how to” articles on the topics of chronic illness care, compliance, adherence, readiness for change, self-management, motivational interviewing, and patient activation. I read and abstracted information from a wide variety of articles, websites, and books. I reviewed a webinar on patient activation sponsored by the Care Management Society of America. That led me to the Patient Activation Measure, a valid and reliable tool used to assess a patient’s activation level (Hibbard, Stockard, Mahoney, & Tusler, 2004). Insignia Health is the company that owns the rights to the Patient Activation Measure. I thought the tool had value for the care managers so I contacted the company and the local representative to learn more about the tool, licensing process, and costs. Through these discussions I learned that the Patient Activation Measure was in use at my health system within an integrative medicine clinic. I spoke with the director of clinic to learn more about how they were using the tool and whether they had found it valuable. By the end of the process I had significantly expanded my knowledge base about self-management education and patient activation and was excited to share the information I had in a meaningful way with the care managers.

Throughout the 10 months I worked with the care managers, I had noted a certain resistance to change within the group. It was often attributed to barriers, such as time constraints or my not understanding their work. It is quite possible that we never identified an optimal solution to problems that seemed workable to the care managers. I am not certain. I decided that my approach to sharing the information about patient activation would be to utilize the same established methodologies, known to be effective in helping patients overcome their resistance to changing behavior, with the care managers, in hopes of helping them build motivation within their group for change. I designed a presentation that I hoped would

accomplish this. I also arranged an hour session with the care managers on the day of my presentation to allow me more time to speak to the content.

I developed a power point presentation outlining the content I wanted to cover with the care managers. Following a brief introduction, I asked them to think about a patient they had worked with recently who had difficulty managing their heart failure. I gave them a few minutes to think about their recent interactions with the patient; then I asked them a series of questions about that individual and requested they raise their hand if they believed they could answer the question. The questions addressed the patient's experience with illness, priority problem, goal, readiness to change and the unique approach the care manager would recommend for this particular individual. I hoped to help them recognize differences between their current approach and the evidence-based interventions we were about to discuss. We talked about the multitude of concepts and interventions related to self-management education and patient activation including recommendations for chronic illness care, adherence, readiness for change, motivational interviewing, and patient activation. I provided and discussed a set of tools pertinent to our discussion including the Patient Activation Measure (Hibbard, Stockard, Mahoney, & Tusler, 2004) and a readiness ruler (Care Management Society of America, 2006). We closed the discussion by talking about how these concepts and tools might be applied in the context of their practice.

I will probably never know for certain to what extent the care managers made changes in their practice based upon our discussion of self-management education and patient activation or the tools I provided. Looking back, I wish I had focused my entire systems change

project in the area of self-management education. I suspect that was more my need than the care managers' need. I hope that at a minimum I broadened their perspective and influenced them to consider alternative approaches to helping patients learn to self-manage their heart failure.

### **Ethical Considerations**

My systems change project focused on the development of a model of nursing care management for community-dwelling individuals with heart failure. Model development occurred through a participatory action research process with the clinic-based care managers who deliver care to these individuals. In planning for my project, I considered several perspectives related to the ethics of this work. These include the ethics of my interactions with the care managers, the interactions of the care managers with each other and their employer, and, most importantly, the interactions of the care managers with their patients. As I explored these perspectives I utilized the *Code of Ethics for Nurses with Interpretive Statements* as a framework (American Nurses Association, 2001).

My systems change project relied heavily on the involvement of the clinic-based care managers. As I considered the ethics of involving them, it was important to me that our work together was beneficial to them. This reflects the basic ethical principle of beneficence, to do good (Gibson, 1993). It also reflects several of the provisions of the *Code of Ethics for Nurses with Interpretive Statements* (American Nurses Association, 2001). Prior to beginning my project, I sought and obtained approval from the Institutional Review Boards of St. Catherine University and my health system. Their scrutiny of the plan for conduct of my project assured

that I would protect the rights and autonomy of my human subjects. Each of the care managers was informed of the purpose of the project, the risks and benefits of participation, and the anticipated time commitment. It was clearly stated that participation in the project was a choice and they were free to withdraw at any time. They were also informed of the steps that would be taken to protect their privacy. These steps are congruent with provision one of the *Code of Ethics for Nurses with Interpretive Statements* which defines the nurse's duty to maintain individual's rights to self-determination. The care managers had a right to decide if this project was worth their investment of time and energy.

I believe my systems change project was also designed to be of benefit to the care managers from the standpoint of improving the efficiency of their work. Prior to beginning the project, there was minimal definition of the model of care delivery used by the care managers. Through completion of a needs assessment, I learned that each of the care managers was approaching interactions with individuals with heart failure in different ways. For example, there was inconsistency in the frequency and location of contact, approach to self-management education, length of the relationship, and communication with other members of the health care team. The intent was to create standard processes and best practices to improve the care manager's efficiency and allow them to interact with a greater number of patients than they were previously able to do. This is reflective of provision four of the *Code of Ethics for Nurses with Interpretive Statements* (American Nurses Association, 2001) which talks about accountability for individual nursing practice.

I anticipated the care managers would also benefit from modeling of the participative action research process during the conduct of my systems change project. Participative action research directly involves the individuals doing the work in the discovery of solutions to problems in their workplace. As we worked together, I was teaching the care managers a method for approaching future problems they encounter in their work. This reflects provision seven of the *Code of Ethics for Nurses with Interpretive Statements* (American Nurses Association, 2001) which addresses the nurse's duty to participate in the development of the profession of nursing through contributions to practice and knowledge development.

Provisions six and eight of the *Code of Ethics for Nurses with Interpretive Statements* (American Nurses Association, 2001) discuss the duty of the nurse to establish, maintain, and improve health care environments and the conditions of employment and collaboration with other health care professionals respectively. The nursing care management program for heart failure patients is new within my health system. The care managers are building the program from the ground up, often in isolation from each other and the system at large. Other members of the health care team have developed their own ideas of what it is the care managers should be doing and how they should accomplish their work. This has created frustration and concern within the care manager group. During my systems change project, the care managers have established ground rules for how they interact with each other. They are committed to listening to varying points of view, debating issues openly and respectfully, and deciding collaboratively on a course of action. The ultimate effect is to establish a respectful, collaborative, learning environment within which the care managers can work and grow. They are also being given the opportunity to educate others in the multidisciplinary team about their

work with heart failure patients which clearly communicates the uniqueness and value of nursing. Respect for their role within the multidisciplinary team is growing. Other disciplines are now consulting the care managers about approaches as opposed to providing direction to them.

The ethics of the care manager's interactions with patients is a primary consideration of my systems change project. Improvement in patient's self-management skills and quality of life is the ultimate goal of the care manager intervention. As in any relationship, there is potential for great benefit as well as for harm in the interaction between the patient and nurse. Application of evidence from the literature and the care manager's experience as a part of the systems change project is designed to increase the reliability of the care manager's effectiveness in assisting patients to meet their goals.

The principle of autonomy or respect for individual self-determination is basic to the field of ethics (Gibson, 1993). The *Code of Ethics for Nurses with Interpretive Statements* (American Nurses Association, 2001) incorporates the principle of autonomy in provision one regarding the inherent dignity, worth, and uniqueness of each individual. Provision one instructs the nurse to be respectful of all individuals despite differences in their beliefs, values, or lifestyle. It also instructs the nurse to respect the patient's right to self-determination. The care managers have identified that certain patients present a challenge for them as they attempt to establish a relationship. Nursing care management in the immediate post-discharge period is a free service of my health system. Some individuals decline this service despite the fact that it is a free benefit to them. Older adults who are fearful of letting

someone into their home may decline due to concerns about loss of freedoms. Others are concerned about privacy. While the nurse care managers respect the patient's right to decline their service, it frustrates them when these patients have frequent readmissions.

The role of the clinic-based care manager is intended to enhance the autonomy of the individual with heart failure through identifying patient goals, individualizing teaching plans to the needs of the patient, and tailoring a self-management plan to fit the lifestyle of the individual. The care managers have identified that there are some patients who don't have the capacity for independent self-management. Moser, Houtepen, van der Bruggen, Spreeuwenberg, and Widdershoven (2009) described seven levels of autonomy in their study of diabetic patients. They view autonomy existing on a continuum from self-determination to welcomed paternalism. They describe the ethical challenge for the nurse as being the ability to recognize the patient's preferred level of autonomy and responding in a manner consistent with the patient's preferred style. It is important to acknowledge these differences and build flexibility into the model of care as the care managers work with patients to accommodate these differences.

Several other areas present ethical challenges for the care managers. They understand that their role is to partner with heart failure patients to navigate the health care system, respond early to change in condition, and learn to self-manage their chronic condition. However, there are times when they identify barriers, which are likely to keep the patient from being successful, that don't neatly fit into the work they are supported to do. Often these barriers are social issues: lack of financial resources for medications; patients who are care-

giving to other family members, which prevents the patient from performing their own self-care; or limited ability to prepare meals. At times the care managers are unsure exactly what their role should be in these situations. They recognize that solutions need to be found or the patient can't be successful, yet utilizing their time to address the issue prevents them from providing their specialized care to other individuals with heart failure. They do have the ability to make a referral to the Care Navigation help desk in situations that are outside of their scope. Care Navigation then becomes involved to assist the patient or their family to find the resources they need. From an ethical standpoint, the care managers feel accountable to either assist patients to find a solution or make a referral to another individual who can assist the patient when they encounter these types of problems.

Another concern raised by the care managers is that they have been asked to discontinue their relationship with their heart failure patients when the patient is 30 days past their most recent admission. At that point the health system has met their measure of success. At times the care managers identify patients who are making progress in self-management after 30 days but are not yet at a place where the care manager believes they are competent. This again creates a dilemma for the care manager who must decide whether to disengage from this patient to provide care to another patient or maintain the relationship a while longer to help the person achieve competency. They have been given permission to extend the relationship with a heart failure patient for a short while longer if they believe the individual is making progress and more time will benefit them. This has been helpful to the care managers.

In the profession of nursing we have the privilege of becoming involved in very personal aspects of our patients' lives. Our patients trust us to guide them with evidence-based knowledge, respect, and acceptance of their uniqueness. Our patients' trust creates an obligation to prepare ourselves to provide competent, compassionate care. Nurses have the responsibility to continually engage in advancing our knowledge, improving our systems, maintaining our own personal mental and physical health, and conserving health care resources. My systems change project has been an attempt to lead the care managers in responding to these obligations in an ethical and scholarly manner.

### **Return on Investment**

The health system in which I am conducting my project began a journey in 2006 to improve the processes of care and outcomes for the population of heart failure patients being admitted to their hospitals. The health system leadership has invested in this improvement process for several reasons. First, they are motivated by a desire to build the health system of the future, basing much of their work on the recommendations from the Institute of Medicine report entitled *Crossing the Quality Chasm: A New Health System for the 21<sup>st</sup> Century* (2001). They have also been motivated by anticipated changes to reimbursement policies by Medicare. Beginning in 2012, if a patient who was in the hospital with a primary diagnosis of heart failure is readmitted within 30 days for any reason, other than a previously scheduled elective procedure, the hospital will not be reimbursed for the second admission. The same will be true of acute myocardial infarction and pneumonia. My health system must learn as an organization to manage these patient populations in a way that reduces readmission rates or it will face

large numbers of uncompensated admissions. Reducing the readmission rate within 30 days for heart failure patients was the ultimate measure of success of my health system's heart failure improvement process.

The clinic-based care managers have been employed by my health system to engage with heart failure patients in the immediate post-hospital period. Their role is to assure a smooth transition to home, improve the patient's self-management skills, intervene if the heart failure patient declines in status, and transition the patient to a point where they may self-direct their own care whenever possible. When the patient is unable to direct their own care, the care manager will assist an identified caregiver to fulfill that role. In the current environment, they are seen as a critical element in reducing readmission rates for this population.

In order to evaluate the return on investment for my project, I first needed to define the project objectives and the outcomes I was ultimately planning to measure. My systems change project addressed the following objectives: (a) design and implement an evidence-based model of care management for community-dwelling individuals with heart failure by engaging an identified group of care managers in a participatory action research process, (b) improve the competency of the clinic-based care managers in engaging with individuals with heart failure to increase their self-management capacity, and (c) improve systems to increase the consistency with which the care managers' practice patterns follow the newly designed model. From a narrow perspective, the ultimate outcome could be measured as the improved efficiency of the care managers in fulfilling their role when practicing under the newly designed model. While

this was an intended outcome, it does not provide the health system with the evidence they need to make decisions about continuing or expanding the work of the care managers. The outcome which is most essential is the impact of the care management program on reducing readmission rates for heart failure patients. Reduction in readmission rates is the litmus test against which all other pilots and programs are measured.

The inputs to the return on investment equation for my systems change project have been the cost of time spent by me, the care managers, and the Director of Care Management. A large portion of the cost is my time, which has been unpaid time. It can be considered as a cost because much of the work I did would need to be done by someone else if I was not involved. The care managers' time was primarily within the context of their regularly scheduled meetings. From one perspective, there was a cost, because I used some of the time they would have spent doing other work to explain the project, gather information they already had, and evaluate the project. The only additional time required was a one and one-half hour session with one of the care managers to orient me to the electronic medical record. There was also one small group meeting to work on content for the plan of care, however, this was again work they were required to do, not work they were doing simply for my project. If another organization were to implement this program, there would be start-up costs for recruitment and hiring, orientation, and laptop computers for each care manager. I did not include those costs here because the care managers I worked with were transitioned from a previous role so these costs were not incurred. I estimate that the Director of Care Management likely spent 12 hours of her time over the course of the ten months to help guide and direct me as we progressed through the project. This would also be an additional cost.

The program for this project was the work of the care managers with the heart failure patients. There are multiple aspects to the program. The initial step is case finding of the correct individuals to be admitted to the care management program. The care manager then engages the patient with heart failure in a series of encounters beginning with introduction of their role. During the following encounters, the care manager assesses the patient's condition and knowledge of heart failure self-management, intervenes to improve the patient's self-management skills, provides care coordination among other members of the interdisciplinary team caring for the patient, evaluates the patient's learning, and transitions the patient to the primary care team for long-term follow-up. The care managers report that case finding has become much more efficient over the past 10 months. Their interactions with patients have also become more focused and efficient since their partnership with patients was shortened to 30 days. It is unclear if the long-term effectiveness of the program, in terms of the patient's self-management abilities, has changed for the better or worse.

There were several outputs of my systems change project. These included a summation of criteria for admission to and discharge from the care management program for heart failure patients, the original protocol for the transition coach pilot project at the two health system hospitals, training for the care managers in participatory action research protocols, a delineation of the current state of the care management model in January of 2010, a risk assessment tool to identify patients requiring non-routine discharge planning, content for the heart failure patient plan of care, an organized resource file, and a toolbox for patient activation. The other output I had anticipated was development of a structured model of care for care management of community-dwelling individuals with heart failure. I have witnessed

ongoing changes in the model of care and have participated in shaping some of them.

However, there were multiple other influences affecting the model of care over the past ten months. I cannot claim them as outputs of my project.

I evaluated two outcome measures as indicators of the efficiency of the care managers and the effectiveness of the care management program. The first outcome I looked at was the efficiency of the care managers. There was an assumption that they would become more efficient as the framework of their care delivery to heart failure patients became more organized and structured, tools were put in place, and systems were improved. The best way to measure this was to evaluate the care managers' productivity in terms of the number of heart failure patients in active case management per care manager full time equivalent per month. When I began the project, the number of heart failure patients in care management per full time equivalent care manager was measured at 31 patients per month. For the month in which my project ended, the number of heart failure patients in care management per full time equivalent care manager was measured at 26.5 patients. This number reflects productivity of the established care managers only; it does not include individuals newly hired. There are several likely reasons for this difference in productivity. In 2009 the care managers were very focused on heart failure. Patients with other diagnoses in care management were quite limited. In 2010 the care managers are following patients with depression, heart failure, diabetes, vascular disease, and other diagnoses within their caseloads. Additional care managers have been added resulting in heart failure patients being spread among more individuals. If care manager productivity is measured looking at all the patients opted into care

management, the care managers are currently following 36 patients per full time equivalent per month. This, in essence, represents a 16% increase in productivity.

The second, and most important, outcome is readmission rates for heart failure patients in care management compared with heart failure patients within my health system who are not in care management. Every admission averted represents an actual cost savings to my health system because the system loses money on most admissions. The current readmission rate within 30 days for all heart failure patients admitted to hospitals in my health system is 19.4%. This rate has not changed from one year ago. An accurate readmission rate within 30 days for heart failure patients in care management was not available a year ago. The current measurement for patients in care management is 14%. While all patients admitted to my health system's hospitals with a primary diagnosis of heart failure are eligible for care management, many people elect not to participate. Given the reduction in readmission rates for patients in care management, one of the current initiatives is focused on identifying strategies to increase the number of patients who accept care management.

There are also a number of intangible outcomes from this systems change project. There are four key stakeholders of my systems change project: heart failure patients, the clinic-based care managers, the department of care management, and my health system. The intangible outcome for the patient is improved quality of care resulting from the care managers following a more consistent, evidence-based, and equitable model of care. For the care managers, the intangible outcomes include experience with collaborative action research methodology as a process to approach problems in their workplace. They are also benefiting

from the development of a more structured, focused model of care. This structure provides less ambiguity and helps to increase their efficiency. The care management department and health system have benefited from having the assistance of a Doctor of Nursing Practice student. I have provided support on a number of projects that were related but not strictly part of my project. I have also provided evidence from the literature for a wide variety of topics. Without my involvement a staff member's time would need to be allocated to complete the work.

### **Summary**

The methodology I envisioned at the beginning of my systems change project followed a structured, orderly flow from identifying problems, researching possible solutions, deciding on a course of action, testing interventions, selecting best practices, and communicating results. The actual methodology was far less structured and orderly than my vision. I have presented a historical summary of the events occurring during my systems change project. I have tried to communicate my thoughts, assumptions, and strategies as I progressed through the process of implementation.

At the end of the project I cannot claim that I guided the care managers through a complete process change in any one area of their model of care. However, I responded to the needs of the group as they changed over the course of our working relationship. In the next chapter, I will examine the care managers' evaluation of the project. Their perspective is important to my learning and development as I begin my role as a Doctor of Nursing Practice.

## Chapter Four

### Systems Change Project Evaluation

#### Introduction

The systems change project for the Doctor of Nursing Practice (DNP) program is designed to be a synthesis of knowledge gained through the DNP curriculum and the clinical experiences that are a part of the program. The intent of the project is to design and implement a systems level change in nursing practice, education, and/or service that will improve outcomes for a specific population. My systems change project was intended to improve outcomes for two populations: community-dwelling individuals with heart failure and the clinic-based care managers at my health system. Outcomes for the heart failure patients were discussed in the previous chapter.

From the beginning of my systems change project, it was essential to me that the process had value for the clinic-based care managers. Ethically, I could not ask them to give me their valuable time without providing something to them in return. To evaluate the outcomes of the project for the clinic-based care managers, I designed an evaluation tool (see Appendix M). To construct the evaluation tool, I reviewed the purpose, objectives, needs assessment, and deliverables from the project. I also developed questions which I hoped would assess the care manager's experience in being a part of the systems change project and working with me as the investigator. I asked for their opinions on how the process might have been improved. I also wanted to assess their perceptions about what had changed in their practice over the 10 months we worked together. As I reviewed information from the start and end of the project, I

could see progress but I wanted to determine whether or not they could also perceive it. The first eight questions dealt with the care manager's experience as a participant in the systems change project. Questions 9-16 asked the care managers to evaluate whether or not progress had been made in specific areas of the model of care for community-dwelling individuals with heart failure.

### **Initial Steps**

I reviewed a draft of the evaluation tool with my academic advisor. She made some substantive recommendations which I incorporated into the evaluation tool. Since the evaluation tool was not a part of my original Institutional Review Board applications, I inquired of both Institutional Review Boards whether or not they required a review process for the evaluation tool. Both Institutional Review Boards did have this requirement. The evaluation tool was submitted as an amendment to both St. Catherine University and my health system's Institutional Review Boards. I quickly received approval from the St. Catherine University Institutional Review Board. My health system's Institutional Review Board requested some revisions. These were mostly editorial; however, they also asked that I include a statement in the introduction informing participants that they might skip any questions they did not wish to complete. I resubmitted the amendment with the requested changes and received approval from my health system's Institutional Review Board.

The evaluation tool was set up in Question Pro, a web-based survey software program. I purchased a one-month subscription to access some of the features I required that were not available in the free version of the software. An invitation was emailed to the care managers.

The invite contained a link to the survey. The survey was set up so that results would be reported anonymously. A reminder was sent to the care managers a couple of weeks later, asking that those who still wished to reply complete the survey within a few days. One of the advantages of Question Pro was an automated reporting system. The responses from the care managers were reported on a downloadable Excel spreadsheet which made summarizing the data very easy.

### **Evaluation Survey Results**

The evaluation survey was sent to the nine clinic-based care managers who had signed consents to be a part of my systems change project and who were still employed at my health system as clinic-based care managers. All of the nine care managers responded to the survey yielding 100% participation. Given the small number of subjects participating in my systems change project, I was thrilled to have responses from each of them. I believe this response rate is a reflection of the strong relationship we developed during the course of the project.

**Question 1:** To what extent was the investigator able to identify priority needs of the nurse care manager group related to developing the model of care delivery for heart failure patients?

Question 1 was a multiple choice question that asked the respondent to make a selection from a Likert type scale of always, usually, sometimes, or never. All of the care managers responded to this question. Six care managers, or 66.67% of respondents, answered always; three care managers, or 33.33% of respondents, answered usually. No care managers selected sometimes or never.

I believe the care managers answered this question as they did because of the time taken to complete the needs assessment and validate its results. Selection of priority needs was a collaborative process. It was also a continuous process as the needs of the care managers were reassessed frequently during the project. This was necessary due to the rapidly changing environment in which they worked. My systems change project utilized a collaborative or participatory action research methodology. Part of that methodology is assessment of the problems or concerns of the individuals involved in the work. The care managers work in a fast paced, highly scrutinized environment which creates pressure on them to perform. They have high expectations of themselves with respect to their ability to improve the self-management skills of the chronically ill patients they care for. All of this creates a highly stressful environment for the care managers which could easily lead to burnout without a nurturing, supportive environment in which to work. Listening and responding to employees' concerns is one way to communicate to them that they have value and to create a supportive environment. I believe the care managers saw the opportunity to talk about their work, evaluate strengths and weaknesses of the model of care, and receive guidance in best ways to take action as a reflection of a supportive environment.

**Question 2:** During the project the investigator participated in developing several areas of the model of care for heart failure patients. Which of the following areas has been most helpful for you? Please rank the top three.

Question 2 asked the care managers to rank order the helpfulness of a number of deliverables from the development work that was completed by the investigator. The delivered

products they were asked to assess were (a) development of criteria for admitting patients to care management, (b) improving systems for referral of patients to the nurse care manager, (c) development of the 30-day transition pilot at the two health system hospitals, (d) development of a care plan template for heart failure patients, (e) development of a centralized resource file, and (f) presentation of information on patient activation. Each respondent was to rank order the three items they believed were the most helpful by assigning a number one to the item they saw as most helpful, a number two to the second most helpful item, and a number three to the third most helpful item. Only eight of the care managers responded to this question.

The results from this question, as reported in Question Pro, did not make sense to me for a long time. After studying the results, I believe one of the respondents rank ordered all six items as 1-6, instead of selecting the top three. It is the only way the results seem reasonable. I reviewed the responses to Question 2 with that assumption. There was a fair amount of variability in the way the respondents ranked the helpfulness of the items listed. Three items had five responses which ranked them in the top three most helpful products of the systems change project. Those three items were development of criteria for admitting patients to care management, improving systems for referral of patients to the nurse care manager, and development of a centralized resource file. Another item, development of a care plan template for heart failure patients, had four respondents who ranked the item in the top three. Presentation of information about patient activation was ranked as one of the top three most helpful activities by two respondents. Development of the 30-day transition pilot only had one respondent who believed it was one of the top three most helpful activities we completed.

There was not enough information to ascertain which item was the single most helpful part of the project.

The items selected most frequently as being in the top three most helpful deliverables from the systems change project are items which have most directly affected the care manager's practice and time. At the beginning of the project, the care managers were spending considerable time case finding. This activity often filled one or two hours of their day. Our ability to clearly identify who should be referred to their caseload and communicate that to the personnel in information technology allowed the development of a report that clearly identified the patients who should be referred to the care managers. The process is not perfect, but has significantly improved over the last 10 months. Similarly, having commonly used resources organized in one place saves the care managers' time that they previously spent searching for where things were located. The development of the template for a plan of care for heart failure patients will have future benefit for the care managers. The plan of care has not been built for the electronic medical record so it is not currently in use. The presentation on patient activation was likely more helpful for some of the care managers than for others. The group involved in the systems change project had the most experience in chronic illness and self-management education. The content we discussed also represented a change from current practice for many of the care managers. The need for change is not always seen as helpful. The 30-day transition pilot did not directly involve the care managers who participated in the systems change project. That pilot did shape some of the changes that were put in place in the model of care for heart failure patients. I am not certain the care managers recognized that connection.

**Question 3:** The presentation of evidence from the literature related to the nurse care manager's work by the investigator was valuable.

Question 3 was again a multiple choice question that asked the clinic-based care managers to select a response from a Likert type scale of strongly agree, agree, disagree, or strongly disagree. All nine care managers responded to the question. Five respondents, or 55.56%, selected strongly agree. Four respondents, or 44.44%, selected agree. No respondents selected disagree or strongly disagree.

In hindsight, I wish I had asked the care managers to elaborate more on why they selected the response they chose. I would like to know what exactly they found valuable and in what way it was valuable to them. I find their response interesting from the standpoint that they seemed to reject much of what I presented as evidence from the literature as too time consuming, academic, or cumbersome. I can speculate that they may have found the information interesting or considered it as a possibility, but when it came to actually changing practice patterns they found it more difficult to implement. I am pleased that they found the presentation of evidence-based information valuable. The instructive part for me, as I consider this response, is to learn to improve the manner in which I share evidence with future audiences to make practice change more approachable.

**Question 4:** Improving the consistency of the model of care delivery for heart failure patients improves outcomes for this patient population (for example, standardizing the time between the patient's discharge from the hospital and the care manager's first phone call to the patient).

Question 4 was again a multiple choice question that asked the clinic-based care managers to select a response from a Likert type scale of strongly agree, agree, disagree, or strongly disagree. All nine care managers responded to the question. Five respondents, or 55.56%, selected strongly agree. Four respondents, or 44.44%, selected agree. No respondents selected disagree or strongly disagree.

Question 4 addressed one of my research questions. The research question was, “What do nurse care managers believe about the impact of inconsistencies in processes of care delivery on outcomes for individuals with heart failure?” The care managers’ responses to this question provide evidence they believe that improving the consistency of the model of care does improve outcomes for patients with heart failure. Over the period of time that I was involved with the care managers, the model of care for heart failure patients became significantly more defined and structured. Early in the project, the care managers were new in their role, few decisions had been made, and few practice changes had been tested. The care managers, together with their leadership and the Heart Failure Steering Committee, engaged in continuous process improvement, continually refining best practice in their care delivery. As a result, the consistency of their practice also improved. We know that the patients in care management currently are readmitted to the hospital within 30 days less frequently than those patients who are not in care management. It will be interesting to follow the care managers’ results over time as they continue to improve their processes.

**Question 5:** How would you rate the value of the overall experience of working with the investigator on development of the model of care for heart failure patients?

Question 5 was another multiple choice question that asked the clinic-based care managers to select a response from a Likert type scale of very useful, useful, somewhat useful and not useful. Eight of the care managers responded to the question. Of those who responded, six participants, or 75%, rated the overall experience as very useful. One participant, or 12.5%, rated the experience as useful. One participant, or 12.5%, rated the overall experience as somewhat useful. No respondents rated the experience as not useful.

As a part of Question 5, I asked the respondents to describe what the most valuable part of the experience had been for them. The responses to this question reflected much of what I hoped I had accomplished with them. Responses addressed my being a good listener and pulling team members together as a group around a common goal. The responses also discussed the value of the guidance I provided in helping to organize and standardize the program; of developing a better workflow. Lastly, they saw that the resources I provided were valuable. These responses were very gratifying as they reflected exactly what I hoped I could achieve during my systems change project.

**Question 6:** How might the experience of working with the investigator on the development of the model of care for heart failure patients have been improved?

Question 6 was an open-ended question. Five of nine respondents replied to the question. The clinic-based care managers who responded identified many of the same issues that I had been frustrated by during the project. One person commented on the difficulty I had getting time on their agenda and the effect of having my time shortened frequently, because other agenda items spilled over into my assigned time. Others commented on how long the

process took and the fact that the care delivery model often had changed before we could implement the improvement we had been discussing. Apparently this was frustrating to the care managers as well as to me. One of the things I need to take away from this experience is that the structure we put in place, my having one-half hour on their standard meeting agenda every 2-4 weeks, was not an effective way to manage systems change. It may have been the manner in which I utilized that time as well. Some of our work needed more concentrated time and the importance of the work should have dictated that I structure things differently. In my attempt to accommodate their busy schedule, I ended up not using their time as effectively as I might have. One other person commented that there should have been stronger implementation to upper management. I am not certain if the respondent is referring to a sense that I should have been working more closely with upper management to implement changes or if it means I should have influenced upper management to support and implement some of the changes we discussed. In either case, what I deduce from this comment is the need to align myself more closely with the decision makers so recommended systems change is an integral part of the leadership's strategic objectives.

**Question 7:** I have made changes in my practice in caring for heart failure patients as a result of participating in this project.

Question 7 was again a multiple choice question that asked the clinic-based care managers to select a response from a Likert type scale of strongly agree, agree, disagree, or strongly disagree. Eight of nine care managers answered the question. One respondent, or

12.5% of respondents, indicated that they strongly agreed. Seven respondents, or 87.5% of respondents, answered that they agreed. No respondents disagreed.

The second part of Question 7 was an open-ended question asking the care managers to describe two or three changes they had made in their practice, if they agreed that they had made changes. The question also invited them to explain why they disagreed with the statement in Question 7, if they disagreed that they had made changes in practice. Four of nine respondents supplied an answer to the second half of Question 7. Respondents highlighted several things they were doing differently. There was a comment by one care manager about feeling more confident in what she was doing. Another care manager commented that she felt more organized.

I find there is great value in spending time with colleagues, in a structured environment, to discuss how each of us approaches our work. I have noted that through these types of discussion I am either able to confirm that my practices are in line with what others are doing, which gives me confidence in the fact that I am practicing within a community standard, or to identify modifications to my practice, which may make me more efficient or improve the quality of my care. The care managers' comments made me think that they had experienced this same benefit from our discussions. There were multiple comments about increased consistency. This was one of the intended consequences of my systems change project and I am thankful that some of the care managers identified that as an improvement in their practice. There was also one comment about the availability of resources. I was hopeful that the resource file would address the need expressed by care managers to have a more organized and complete

compilation of tools for themselves and their patients. This comment was an indication that the resource file was of some benefit.

**Question 8:** Is there anything else that you would like to share with the investigator?

Question 8 was an open-ended question that was recommended by my academic advisor to elicit comments from the care managers about any topic I had not already touched on in the evaluation survey. Three care managers shared additional comments. These were primarily comments of appreciation for the time I had spent with them.

The first eight questions of the evaluation survey provided me with a good sense of the care managers' experience as participants in the systems change project. Prior to obtaining these results, I had some assumptions and conjectures about what the care managers were thinking. The evaluation survey provided more objective data, helping to confirm or refute previous suppositions I had formed. As I stated, it was very important to me that the systems change project be of value to the care managers. There were times during the project that I believed I wasn't achieving this goal. The evaluation survey confirmed that what the care managers and I worked on was valuable for them. The perceived value may not have achieved the level that either the care manager or I had anticipated, but fundamentally the goals of the systems change project were met.

In the second section of the survey, questions 9-16, the clinic-based care managers were presented with descriptions of the state of the model of care for heart failure patients taken from an assessment completed in 2009, at the beginning of the systems change project. They were asked to make a comparison between the aspect of the model as described in 2009 and

the same aspect of the model at the present time. The care managers were asked to rate their perception of progress made in improving the efficiency and consistency of that particular aspect of the system or in their knowledge and confidence in that area. Their choice of responses included significant progress, some progress, and no progress. Of note in this section is that six of eight questions have 10 total replies. Since the evaluation survey was only sent to nine care managers, the only way I can account for this would be if one of the care managers replied to this set of questions twice. There is no way to determine which respondent may have provided duplicate answers so I will present the data as reported.

**Question 9:** Referral to care management - In 2009 care managers were reviewing inpatient lists for assigned clinics, reviewing patient's medical records, and adding patients if the care manager felt they fit criteria. Referrals also occasionally came from other sources such as clinic physicians or heart failure nurses.

There were 10 responses to Question 9. Eight of the respondents, or 80%, believed there had been significant progress made in this area over 10 months from the beginning of the project until the time of the evaluation. Two respondents, or 20%, felt there had been some progress. The referral process, to connect patients to a clinic-based care manager, had been a major area of focus for the Heart Failure Steering Committee and the Care Continuum Heart Failure Workgroup in late 2009 and early 2010. The team had been successful in partnering with the information technology staff to develop a report that allowed the care managers to identify hospitalized patients with heart failure by clinic with relatively good accuracy. This was a significant change for the care managers, saving them hours of time in their week.

**Question 10:** Inclusion of patients for care management – In 2009 care managers described uncertainty about which patients should be added to their caseload.

Question 10 also had 10 responses. Seven respondents, or 70%, believed that significant progress had been made in defining which patients should be added to the care manager's caseload. Three respondents, or 30%, believed that some progress had been made. From the discussion I held with the care managers, I know that there continue to be areas of ambiguity. Whether or not to partner with individuals who had heart failure and were on dialysis was one example. Dialysis patients present unique challenges in terms of fluid management. At our last meeting together, the care managers were exploring creative ways to improve the care of this patient population. Each patient is unique. At times the diagnosis of heart failure is not clear. I am not certain it is possible to make the criteria for adding a particular patient to the care manager's caseload completely unambiguous. The fact that all of the care managers have seen improvement is a positive finding.

**Question 11:** Timing of first contact with patients following discharge from the hospital – in 2009 care managers described a large amount of variability in practice.

Question 11 was answered by all of the care managers. All of the respondents, 100%, indicated that significant progress had been made in this area. The timing of first contact with patients post-discharge became very clear to the care managers during the meeting with the Chief Medical Officer and Chair of the Heart Failure Steering Committee. They were essentially told that a decision had been made, although there was opportunity for dialogue. The decision was to contact heart failure patients by telephone within 24-72 hours of discharge and to

complete a home visit within the first week. The situation changed quickly, from one in which they were able to use their best judgment, to one in which a clear expectation was set. In leadership, there are times when decisions need to be made for the benefit of the organization or the customer and discussion is not possible. In this situation, this decision was very effective in removing variability in practice in a short period of time.

**Question 12:** Frequency of contact – In 2009 care manager practices related to the frequency of contact with patients in their caseload showed significant variability.

Question 12 had nine responses. Three of the care managers, or 33.33% of the respondents, indicated that significant progress had been made in this area of the model of care. Six care managers, or 66.67% of respondents, replied that some progress had been made. My interpretation of the responses to this question is that, while progress has been made in clarifying and providing guidance to the care managers on how frequently to contact people on their caseload, there is still some uncertainty remaining. In essence, the care managers would like it to be even more structured. The biggest change in the model of care management for heart failure patients in 2009 was the creation of a set of expectations regarding contact with patients in the first week post-discharge. Those expectations included a telephone call to the patient by the care manager within 24-72 hours and a home visit within the first week after discharge. In addition, the care manager's involvement was limited to 30 days in most cases. Contact with patients during the last 3 weeks of the 30-day period is still up to the care manager's best judgment. Based upon their response to this question, I would say this remains an area for continued development in the care management model for heart failure patients.

**Question 13:** Face-to-face contact/Home visit – In 2009 care managers described a range of practice from doing most visits in the home to rarely doing a home visit.

Question 13 had 10 responses. Three of the care managers, or 30% of respondents, indicated that significant progress had been made in standardizing the practice of face-to-face visits in the home. Seven care managers, or 70% of respondents, responded that some progress had been made in this area. I am somewhat surprised by the care managers' responses. Since September of 2009, there has been a clear expectation that the care managers will make at least one home visit. I can speculate, based on my interactions with the care managers, which two things may have contributed to their responses to this question. First, the fact that at times they may have difficulty getting patients to agree to a home visit. Second, the care manager may be indecisive about whether or not to do additional home visits after the initial visit. Their responses lead me to believe there is still variability in the frequency with which individual care managers do home visits. This is another area that bears further exploration to provide clearer guidance to the care managers about how to engage patients to accept at least one home visit and how frequently to incorporate multiple home visits into their practice.

**Question 14:** Documentation Standards – In 2009 the care managers were utilizing the Aspen care management system for documentation. There was concern that other members of the interdisciplinary team were unable to view their notes. Some care managers were utilizing a documentation template; others were free texting.

Question 14 was answered by nine care managers. Six care managers, or 66.67% of respondents, replied that significant progress had been made in improving documentation standards. Two respondents, or 22.2%, felt that some progress had been made. One care manager, or 11.11%, indicated that no progress had been made. The biggest change in documentation for the care managers over the 10 months of my systems change project was the shift to documenting in my health system's electronic medical record. That change made the care manager's notes visible to other providers using the system. There were two templates built for use with the heart failure patients. They were originally built to be utilized by the Contact Center. The advantage of these templates was the ability to make key fields in the template reportable. However, the template did not fit the needs of the care managers very well. There were certain situations, for example a patient in a transitional care unit, where the template didn't fit at all. The care managers also had to shift frequently between environments in the electronic medical record to complete their work. This involved backing all the way out of one area of the medical record and signing into another. The care managers also wanted a plan of care in the electronic medical record, rather than on paper as they had. I wish that I'd had more experience with the electronic medical record when I started the project. There were some aspects of the care managers' documentation I believe I could have helped them improve. Much of what they were asking for required the collaboration of people in information technology. Unfortunately, I don't believe there was much more I could have done to facilitate that during the time of the project.

**Question 15:** Chronic condition self-management education – In 2009 care managers were consistently able to identify the learning objectives for heart failure patients. The care

managers were not assessing patients learning style or readiness to learn but thought they should. Care managers discussed a lack of knowledge and competence in motivational coaching and intervening with patients with poor adherence.

Question 15 was another question with 10 responses. Five care managers, or 50%, believed they had made significant progress in the area of chronic condition self-management education. Four care managers, or 40%, responded that they had made some progress. One care manager, or 10%, believed that no progress had been made. As I mentioned previously, this was one area of the model where I detected variability in the care manager's comfort level and knowledge base. As a group the care managers had been seeking out additional education about strategies to assist patients with chronic illness self-management. They were all scheduled to attend full-day training on motivational interviewing in July 2010. Some of the care managers had more experience engaging patients to increase their self-management skills than others. A number of the care managers expressed frustration with patients who were poorly motivated to self-manage; others seemed to accept that poor motivation was simply where a patient was in their journey with chronic illness. Many of the tools known to be helpful in education of patients about self-management were not readily available to the care managers. I believe the care management program has made progress over the past year in developing an efficient, focused program for education of individuals with heart failure. I also believe there is a need for continued development in this area to integrate the broad knowledge base of evidence-based strategies available in the literature, tailor education to the level of activation of each individual patient, and develop systems for smooth transitions from the clinic-based care managers back to primary care providers.

**Question 16:** Availability of resources – In 2009 care managers described the need for additional resources for their knowledge development related to heart failure and for their use in educating their heart failure patients.

There were 10 responses to Question 16. Nine care managers, or 90% of respondents, answered that significant progress had been made in this area. One care manager, or 10% of respondents, felt that some progress had been made. No care managers responded that no progress had been made. Early in my systems change project, the care managers were new in their role. Many of their questions centered on the pathophysiology of heart failure, cardiac medications, assessment skills, and dietary recommendations for heart failure patients. By the end of the project, they had more than a year's worth of experience in managing this population. Through research, trial and error, consulting others in the field, and talking with their patients, they had developed expertise in educating patients with heart failure about usual care. I would like to believe their response also reflected the benefit of the resource file that I compiled with them. Knowing they viewed that resource as significant progress for them would be very gratifying. I know they have provided recommendations for revision of some of the materials routinely provided to patients with heart failure. I am hopeful those recommendations will be incorporated into the next version of the heart failure patient education materials as the clinic-based care managers have wonderful insights into what does and does not work as a result of their front-line practice with this patient population.

### Summary

I am very appreciative of the clinic-based care managers for each taking time to complete the evaluation survey. Their feedback has been very helpful for me. Overall, the results of the survey provided evidence that my systems change project resulted in some improvements which benefitted the care managers in their practice and work environment. The results indicate they believed that our work together led to improved consistency in the model of care delivery for community-dwelling individuals with heart failure. Those were the objectives of the project and I am pleased to have evidence that my work created something of value for them. I am also grateful that the care managers shared their perspectives on what could have improved the systems change project. I embrace constructive feedback as a means to facilitate my learning and development. I learned a great deal from the experience and will explore my insights in greater detail in Chapter 5.

## Chapter Five

### Discussion, Conclusions, and Recommendations

#### Introduction

In the past 18 months, I have planned, implemented, and evaluated a systems change project focused on developing a model of care for community-dwelling individuals with heart failure. It has required a significant amount of my time and energy during this time period. I am delighted and fulfilled to see it come to a successful conclusion. At the same time, there is an element of sadness stemming from a loss of contact with the clinic-based care managers and the knowledge that there is still much work that is needed to assure a smoothly functioning, successful care management program for heart failure patients. My decision to return to school to complete my Doctor of Nursing Practice degree was based on my desire to fill gaps in my knowledge which had not been addressed in my master's degree program in the late 1970s. Evidence-based practice, informatics, health care policy, nursing theory in the unitary paradigm, and organizational behavior were all elements missing from my formal education. The systems change project allowed me to integrate my new learning in these areas with my existing knowledge and apply it in practice.

Through the systems change project I had the opportunity to test new approaches to dealing with problem solving with the support and mentorship of my academic advisor and site mentor. It also provided the opportunity to extend my knowledge of chronic illness and the evidence surrounding effective approaches nursing can employ to assist patients to be successful self-managers of their health and chronic condition. In this chapter, I will review my

systems change project from the perspective of integration of old and new knowledge, elements of success, project challenges, key elements of learning, and recommendations for future action.

### **Integration of Learning**

At this point, I have been in practice as a nurse for 35 years and an advanced practice nurse for the past 15 years. My work experience has afforded me the opportunity to function in inpatient staff nurse, nurse educator, clinical nurse specialist, nurse practitioner, and nursing leadership roles. My previous graduate education and work experience have given me a wide breadth of knowledge and skills to draw on when faced with challenges in my nursing practice. Despite this background, it was not uncommon for me to encounter situations where there were gaps in my knowledge and abilities. The curriculum for the Doctor of Nursing Practice program has addressed many of these areas.

I came to the Doctor of Nursing Practice program having completed two previous courses of graduate study in nursing. In some ways, my educational path has tracked the evolution of the development of nursing knowledge over the past 30 years. My master's education occurred between 1978 and 1980. Looking back, I now recognize that I did not fully grasp or engage with nursing theory as foundational to my nursing practice. As stated previously, Dorothea Orem's Self-Care Deficit Theory was the most consistent with my personal conceptual framework of nursing (Orem, 1990). Orem's concepts of self-care agency, therapeutic self-care demand, self-care deficit, and nursing agency created a framework that seemed applicable to me at that time in my nursing career. Orem believed that persons who

need nursing are those who were unable to regulate their own development and functioning through self-care, either for themselves or their dependents, because of health related limitations. Orem spoke to nursing agency occurring in an interpersonal relationship and the need for the nurse to utilize knowledge and judgment to alter the form of the nursing system over time. As I review Orem at this phase of my knowledge development, I recognize aspects that create friction for me – the prescriptiveness of nursing intervention, the dichotomy of health and illness, and the concept of deficits.

A significant insight for me over the past 2 years was a reevaluation of my philosophical view of knowledge development in nursing. As I was exposed to and analyzed descriptions of evolving paradigms in nursing knowledge, I recognized that my comfort level was at times within a positivist view (Whall, Sinclair, & Parahoo, 2009). This was especially true when approaching evidence regarding best practice and clearly was influenced by my physician colleagues in my nurse practitioner practice. In retrospect, I often sought the truth through evidence found in the literature. I did not fully appreciate the importance of context.

My exposure to and understanding of a unitary paradigm of nursing was extremely limited prior to my doctoral education. Previously, my infrequent and restrained encounters with theorists espousing a unitary framework created great angst for me regarding the future of nursing and what I saw as the disconnect between academia and practice. I have worked to engage with the concepts and philosophical view of the unitary perspective, particularly Margaret Newman's Theory of Health as Expanding Consciousness (2008). One of the new vistas for me has been a growing understanding and appreciation of nursing from this

perspective. Newman explicates the value of disruption and instability in stimulating growth and transcendence. Newman's perspective of health encompassing the disruption of illness was a confirming expression of a belief I have held in my work with people with chronic conditions. The process identified by Newman for engaging with patients to review meaningful events and people in their lives and to recognize patterns of thinking or behavior provided new insight into how to work with patients as they attempt to integrate one or several chronic conditions into their lives. I have significant work to do in exploring and integrating a unitary paradigm into my practice, but I now find myself energized and curious as I am able to envision the application in my work.

The social justice thread woven into the curriculum at St. Catherine University was part of what attracted me to this university. I have been engaged in developing my understanding of Catholic social teaching and application of social justice in my day-to-day decision making, through training and dialogue with others in my church, for the past four years. Integration of social justice into the Doctor of Nursing Practice curriculum provided multiple opportunities to explore the relationship between nursing and social justice in ways I had never previously considered. The Doctor of Nursing Practice program has grounded me in the importance of framing decision making in health care around social justice principles. Limited financial resources for health care force organizations to make choices about how to allocate funds. My role as a doctorally prepared, advanced practice nurse requires that I advocate for justice across patient populations as I engage others in dialogue about how to best utilize financial resources. While benchmarks of what constitutes justice are often lacking (Donley, 2010), the

only way to establish guidelines is to work our way through the tough choices we must face given limited resources.

One area of my education that was lacking prior to my doctoral program was informatics. I had been exposed to the use of electronic tools to support my work in a variety of roles I had held. I was quite familiar with office software programs, such as word processing and spreadsheets. I had worked with a couple of versions of an electronic medical record. I knew how to conduct a basic internet search and was the proud owner of a PDA. Informatics was another thread woven into the curriculum of the Doctor of Nursing Practice program. I was exposed to a variety of new skills including file management, conducting a literature review, online communication through blogs and wikis, and how to develop an effective power point. All of these new skills were valuable to my systems change project. The use of RefWorks software to store and organize electronic references and abstracts of articles for my project literature review was very helpful. I worked with a librarian to learn how to limit my literature review searches to make certain I obtained the most pertinent articles specific to my topic, which saved me hours of time. I used an online survey tool to obtain evaluation data for the project. The skills I have gained in creation of power points have come in handy on multiple occasions. Perhaps the most important concept I learned related to informatics is that the use of appropriate electronic tools to support our work can create significant efficiencies, particularly in the area of data storage and retrieval.

Education about principles of evidence-based practice was not a component of my master's preparation in the 1970s. The culture of medical practice at that time often

denounced “cookbook medicine” based on the need to individualize treatment plans to each patient. As a consequence, the Institute of Medicine (2001) report cited the health care system’s poor performance in systematically applying evidence from the literature to practice as one of the major shortcomings of our health care system. While I was aware of evidence-based medicine and supported the concept, I had no formal education providing the background needed to seek out best evidence or evaluate studies relative to the context of the clinical question being asked. Coursework during my doctoral program provided the knowledge I needed to undertake these activities during the literature review for my systems change project. In particular, I sought evidence to guide best practices in the care of heart failure patients at the time of hospital-to-home transition and coaching for self-management. I discovered a wealth of information. Utilizing the evaluation techniques learned through the Advanced Evidence-Based Practice course, I was able to select strategies which were most appropriate and most likely to be effective in the setting of my systems change project. The availability of supporting evidence to guide decision making related to the model of care for heart failure patients was also found to be helpful to the care managers.

My systems change project gave me a new appreciation for the difficulty encountered when leading change in a large, complex organization. The planned methodology for my project was a very linear, organized process addressing the key priorities identified by the clinic-based care managers through a needs assessment. The reality of implementation of the project was nothing like that. Change was driven by multiple people in rapid response to changing needs within the organization or unexpected outcomes. Change was at times very rapid and other times quite slow. My doctoral program helped me to gain an appreciation for the fact

that change in organizations tends to be more organic, more chaotic than linear (Porter-O'Grady & Malloch, 2007). I had sensed this change in organizational behavior from the beginning of my career to present day but had not read anything which explained it. Once I gained the perspective of leadership in this new age, I was better able to adapt to the influences affecting my project. Leadership will continue to be a component of my practice following my Doctor of Nursing Practice program. I have developed new skills and have new expectations for myself in a leadership role as a result of what I have learned.

### **Systems Change: Elements of Success**

The purpose of my systems change project was to assist a group of nurse care managers to develop a new model of care management for high risk, community-dwelling individuals with heart failure. The project was designed to meet three key objectives: (a) design and implement an evidence-based model of care management by engaging an identified group of nurse care managers in a participatory action research process, (b) improve the competency of the nurse care managers in engaging with individuals with heart failure to increase their self-management capacity, and (c) improve systems to increase the consistency with which the nurse care manager's practice patterns follow the newly designed model of care. The project purpose and objectives were identified based upon informational interviews I conducted with several stakeholders prior to initiation of the project. The purpose and objectives were written to be somewhat global, given the fact that I had not yet conducted a needs assessment with the care managers. An unstated objective of the systems change project was to advance my learning

through synthesis and application of knowledge gained in the Doctor of Nursing Practice program.

The end of my systems change project prompts an evaluation of which aspects of the project were successful and which areas might benefit from a different approach in future change processes. I utilized an evaluation survey tool to gather information from the care managers about their perspectives. I also have engaged in self-evaluation, attempting to scrutinize the work as objectively as I can.

A number of areas of the project were successful from the standpoint they ultimately had the intended result. The time spent to engage the care managers in needs assessment yielded valuable information and helped to focus us on a common purpose. In the process of evaluating their work and choosing areas of highest priority, the care managers began a dialogue about current processes, areas of consistent practice, and aspects of their practice where there was significant variability. This process was beneficial to the care managers in identifying where improvements could be made.

At the beginning of the project, the highest priority concern was the manner in which patients were referred to the care managers. This was a concern for the care managers, because case finding absorbed an enormous amount of their time. It was also a concern for members of the Heart Failure Steering Committee, because they wanted a reliable process for providing referrals to the care managers. Identification of a solution to this problem involved several departments and multiple individuals across the health system. My systems change project touched on a small part of this change. Observing the process required to reach a

successful solution was instructive for me. The care managers report that the referral process for heart failure patients has improved significantly. Even though I cannot take credit for driving much of this change, participating with the care managers in reaching a successful conclusion was a positive part of this project.

One of my key objectives was to assist the care managers to develop a more consistent model of care delivery for heart failure patients, based on evidence in the literature. Again, multiple forces resulted in changes in the care managers' process of care delivery. My role was to share evidence from the literature about what other groups had found to be effective strategies in nursing care management in the immediate post-discharge period. I believe mapping the care delivery process also helped to prompt dialogue about differences in practice. These strategies facilitated consensus building around certain aspects of the care managers' work. At the end of the project, the care managers indicated that they saw increased consistency in their practice which they believed was of benefit to the patients they serve. They also indicated that the presentation of evidence from the literature was of benefit to them.

Improving the care manager's competency in interacting with individuals with heart failure to increase their self-management abilities was a primary interest area of mine and another key objective. I believe, and my evaluation supports, that the care managers made progress in this area. Presentation of information about evidence-based interventions to engage patients in self-management of their chronic conditions and organization of tools related to those interventions in the resource file were noted by several care managers as

helpful. Other care managers commented on changes they had made in their interactions with patients. Hopefully the care managers will continue to grow and develop in their competency in self-management education as they interact with chronically ill patients.

In the midst of my systems change project I struggled to see the value of my engagement with the nurse care managers. I believe my expectations for what I would accomplish were too grandiose. At the completion of the project I can say that progress was made in achieving each of the outlined objectives of my project. I am also cognizant of how much I learned through the process. From that perspective, my systems change project was a success.

### **Learning from Imperfect Strategies**

Part of scholarship is participation in continuous learning. Critically reviewing outcomes helps us to learn what was effective and ineffectual, which strategies should be placed in our personal toolbox and which should be rethought, and to pay attention to the most appropriate elements of a problem. While I achieved success in my systems change project, there are aspects of the project that did not work as well as I had planned. An important part of my growth and development is to evaluate approaches I used that did not have the intended outcome. It is my belief that a thorough exploration of these challenges and shortcomings will help me to be more effective in the future.

One epiphany that was solidly impressed on me throughout my systems change project is that large scale systems change is extremely hard work. Complex organizations are made up of a multitude of people, occupations, and departments. Each area of the organization has a

particular purpose and approach to their work. The motivation to engage in change varies within each entity based on their perspective and the incentives driving their current processes. I believe there are critical elements to successful systems change. Having a clear objective, which is of great consequence to the organization, is essential. Framing the objective in a way that is inspirational to those who must participate in change also helps to enlist others to join the effort. Involving key stakeholders from the beginning of the change process assures that all perspectives are considered as the organization moves forward and helps to establish buy-in. Developing solutions that are systematic and as effortless as possible overcomes the inertia that is part of human nature. In addition, excellent systems of communication, assuring everyone who needs the information is knowledgeable about the change, are essential.

One improvement I would make when engaging in systems change in the future would be to define the objective of the project more precisely. The scope of my project was too large for the amount of time and level of engagement I was able to bring to the process. In attempting to tackle the entire model of care, I missed the opportunity to make significant improvements in one or two significant parts of the model of care. In hindsight, I believe that would have been more effective. The mantra I will carry with me into future projects is to start small and go deep.

Another aspect of the project that I would improve upon would be to rethink the structure of meeting times with the care managers. I requested and was often given 30 minutes on the agenda of their bi-weekly meetings. There were challenges with this. At times other agenda items took precedence and there was no time for me on the agenda. At other

times, my interactions were cut short by unscheduled events or another presenter taking more time on the agenda than was scheduled. I was attempting to be respectful of the care managers' time by fitting into existing meeting time; however, over time it became clear that this approach wasn't effective. In the future, I would let the importance of the work become a bigger influence on the meeting structure. I would negotiate the time required based on the priority of the work to be completed.

Lack of regular, dedicated interaction time with the care managers was made particularly challenging by the rapid pace of change. Changes affecting the care managers were occurring on a weekly basis. Having contact with them every other week or once per month resulted in my not being current or timely in responding to the needs of the group. With a narrower scope for my project, it would have been more effective to become deeply imbedded with the personnel responsible for moving a defined aspect of the care managers' process forward. Being new to the organization, I did not always have knowledge of the roles and responsibilities of various people and departments that were influencing change in the care managers' work. In the future, I would do a more effective job of understanding other factors which might influence the process I was attempting to change. Paying attention to key linkages and the effect of decisions on other aspects of the organization is critical to successful systems change.

Resistance to change was one of the perceived barriers I encountered during my systems change project. I am not certain that is the appropriate label for the dynamic I encountered in my interactions with the care managers. We would discuss a problem they

were having and I would review evidence-based interventions that might address the problem, based upon my experience and the literature on the subject. The reaction of the care managers was often a litany of reasons why a particular change would not work. I was not always certain what to attribute this reaction to. Possibilities I considered included that I may not have adequately assessed the issue at hand or I might not have understood their work well enough to propose a reasonable solution. I also wondered if the manner in which evidence was presented was perceived by the care managers as too academic to be useful in the real world of their work. I would do several things differently in the future. First, I would make certain that evidence-based strategies were translated into a practical approach that integrated with existing processes as opposed to existing outside of those processes. Secondly, I would identify how a change would create efficiencies in existing work. In other words, how would adding the intervention, which is in essence additional work, alleviate some other aspect of work that consumed the care manager's time. Thirdly, as an external consultant, I would work more closely with the group's leadership to make certain strategies I identified fit with the overall approach of the care managers' leadership and that the implementation of the change would be supported.

### **Recommendations**

My systems change project intersected with an existing change process occurring within the care management department at my health system. I interacted with the clinic-based care managers on a defined set of issues within a defined time period. Like all processes, there is no

end point to the ongoing development of the model of care delivery for community-dwelling individuals with heart failure.

I have several recommendations for the care managers as they continue this work. There are areas of the care delivery model in which there remains significant variability in practice among the care managers. The first of these is the frequency of face-to-face visits with the patient and their caregivers. Some care managers expressed lack of clarity about how frequently and under what circumstances a home visit should be conducted. It would be beneficial for the care managers to dialogue about the unique advantages of a home visit: what can be accomplished in a home visit that cannot be accomplished over the telephone. They could also clarify characteristics of patients who respond better face-to-face than they do over the telephone. Understanding how a home visit will benefit the patient and the outcomes of care management may allow the care managers to be more effective in overcoming resistance from the patient about allowing a home visit. It would also be valuable to discuss the disadvantages of the home visit, such as inefficiencies created by travel time. The end result of these discussions should be a set of criteria that guide the care manager's decision making about scheduling a home visit based upon the circumstances under which advantages outweigh the disadvantages.

Guidelines for determining the frequency of contact between the care manager and the patient was another area raised by the care managers as unclear. The same process utilized to clarify the use of a home visit could be applied to this issue. In their discussion, the care managers could elucidate the criteria each has internalized to make these determinations. It is

likely that there are more commonalities than differences in how they make these decisions. Simply talking through the issue, coming to consensus about best practice, and writing the conclusions down for the benefit of other care managers may be sufficient, provided the care managers are achieving expected outcomes. If results are falling short of expectations the criteria may need to be rethought.

Some variability in the care managers' clinical practice is reasonable. Each patient situation is unique. With experience, the care managers develop the ability to use their clinical judgment to make decisions about the most effective approach to a given patient. However, the idea of evidence-based practice is that practitioners identify best practices and continually work to improve the consistency with which those proven interventions are followed.

The care managers are still developing their expertise in guiding patients to develop effective chronic illness self-management strategies. They continue to seek out continuing education opportunities and to support each other in application of approaches to interacting with more difficult patients. They are handicapped to a certain extent by the 30-day window of interaction they have with the heart failure patients. They will require these coaching skills as they care for medical home patients going forward, however. It will be of benefit to the care managers and their patients to continue to develop systems, tools, and knowledge related to chronic illness self-management.

### **Summary**

The systems change project is the culmination of the Doctor of Nursing Practice curriculum. It provides the student the opportunity to explore an area of interest in great

depth. It promotes the integration of new knowledge, gained through the Doctor of Nursing Practice program, with existing knowledge and experience. Implementation of the project allows the student to practice new skills, test ideas, and receive guidance from others to enlarge their repertoire of abilities. It is also a means of establishing new behaviors more appropriate to the fast paced environment of health care as it exists today. As I complete my Doctor of Nursing Practice degree, I fully recognize the responsibility I have to further the development of ethical, evidence-based nursing practice. My doctoral program has armed me with the additional knowledge and skills I need to move forward. I am not certain where the changing health care environment will steer me, but I believe I am ready for whatever lies ahead.

## References

- Adams, K. F., Lindenfeld, J., Arnold, J. M. O., Baker, D. W., Barnard, D. H., Baughman, K. L., et al. (2006). Executive summary: HFSA 2006 comprehensive heart failure practice guideline. *Journal of Cardiac Failure, 12*, 10-38.
- Anderson, M. A., Levens, J., Dusio, M. E., Bryant, P. J., Brown, S. M., Burr, C. M., et al. (2006). Evidenced-based factors in readmission of patients with heart failure. *Journal of Nursing Care Quality, 21*(2), 160-167.
- American Nurses Association. (2001). *Code of ethics for nurses with interpretive statements*. Retrieved from [http://nursingworld.org/ethics/code/protected\\_nwcoe629.htm](http://nursingworld.org/ethics/code/protected_nwcoe629.htm)
- American College of Physicians. (2006). *The advanced medical home: A patient-centered, physician-guided model of health care*. Retrieved from [http://www.acponline.org/advocacy/where\\_we\\_stand/policy/adv\\_med.pdf](http://www.acponline.org/advocacy/where_we_stand/policy/adv_med.pdf)
- Birmingham, J. (2009). Patient choice in the discharge planning process. *Professional Case Management, 14*(6), 296-309.
- Blaylock, A., & Cason, C. L. (1992). Discharge planning: Predicting patients' needs. *Journal of Gerontological Nursing, 18*(7), 5-10.
- Bodenheimer, T., Wagner, E. H., & Grumbach, K. (2002). Improving primary care for patients with chronic illness. *Journal of the American Medical Association, 288*(14), 1775-1779.

- Borrelli, B. (2006). *Using motivational interviewing to promote patient behavior change and enhance health*. Retrieved from <http://cme.medscape.com/viewprogram/5757>
- Bowles, K. H., Naylor, M. D., & Foust, J. B. (2002). Patient characteristics at hospital discharge and a comparison of home care referral decisions. *Journal of the American Geriatrics Society, 50*, 336-342.
- Bringewatt, R. J. (2003). *Checklist for chronic care reform*. Retrieved from <http://www.nccconline.org/pdf/chroniccarechecklist.pdf>
- Case Management Society of America. (2006). Patient assessment forms. In *Case Management Adherence Guidelines* (Appendix 2). Retrieved from <http://www.cmsa.org/portals/0/pdf/CMAG2.pdf>
- Centers for Disease Control and Prevention. (2010). *Heart failure fact sheet*. Retrieved from [http://www.cdc.gov/dhdsp/library/fs\\_heart\\_failure.htm](http://www.cdc.gov/dhdsp/library/fs_heart_failure.htm)
- Coleman, E. A., Parry, C., Chalmers, S., & Min, S. J. (2006). The care transitions intervention. *Archives of Internal Medicine, 166*, 1822-1828.
- Delaney, C. (2010). Activation: Key to the patient-centered medical home. *Medical Home News*, February, 3-4.
- Donley, R. (2010). Nursing, social justice and the marketplace. *Health Progress, 91*(3), 35-37.

- Duffy, J. R., Hoskins, L. M., & Chen, M. C. (2004). Nonpharmacological strategies for improving heart failure outcomes in the community: A systematic review. *Journal of Nursing Care Quality, 19*(4), 349-360.
- Emmons, K. M., & Rollnick, S. (2001). Motivational interviewing in health care settings: Opportunities and limitations. *American Journal of Preventive Medicine, 20*(1), 68-74.
- Fawcett, J. (2000). Newman's theory of health as expanding consciousness. In *Analysis and evaluation of contemporary nursing knowledge: Nursing models and theories* (pp. 549-572). Philadelphia: F. A. Davis Company.
- Fawcett, J. (2000). Orem's self-care framework. In *Analysis and evaluation of contemporary nursing knowledge: Nursing models and theories* (pp. 259-361). Philadelphia: F. A. Davis.
- Gibson, C. H. (1993). Underpinnings of ethical reasoning in nursing. *Journal of Advanced Nursing, 18*, 2003-2007.
- Granger, B. B., Moser, D., Harrell, J., Sandelowski, M., & Ekman, I. (2007). A practical use of theory to study adherence. *Progress in Cardiovascular Nursing, 22*, 152-158.
- Harrison, M. B., Browne, G. B., Roberts, J. Tugwell, P., Gafni, A., & Graham, I. D. (2002). Quality of life of individuals with heart failure: A randomized trial of the effectiveness of two models of hospital-to-home transition. *Medical Care, 40*(4), 271-282.
- Hebert, P. L., & Sisk, J. E. (2008). Challenges facing nurse-led disease management for heart failure. *Disease Management Health Outcomes, 16*(1), 1-6.

- Hegyvary, S. T. (2007). The U.S. health care system. In D. J. Mason, J. K. Leavitt, & M. W. Chaffee (Eds.), *Policy and politics in nursing and health care* (5<sup>th</sup> ed., pp. 256-274). St. Louis, MO: Saunders Elsevier.
- Hibbard, J. H., Greene, J., & Tusler, M. (2009). Improving the outcomes of disease management by tailoring care to the patient's level of activation. *The American Journal of Managed Care*, 15(6), 353-360.
- Hibbard J. H., Stockard, J., Mahoney, E. R., & Tusler, M. (2004). Development of the patient activation measure (PAM): Conceptualizing and measuring activation in patients and consumers. *Health Services Research*, 39(4), 1005-1026.
- Hibbard, J. H., & Tusler, M. (2007). Assessing activation stage and employing a "next steps" approach to supporting patient self-management. *Journal of Ambulatory Care Management*, 30(1), 2-8.
- Holland, D. E., Harris, M. R., Pankratz, V. S., Closson, D. C., Matt-Hensrud, N. N., & Severson, M. A. (2003). Prospective evaluation of a screen for complex discharge planning in hospitalized adults. *Journal of the American Geriatrics Society*, 51, 671-682.
- Institute of Medicine. (2001). *Crossing the quality chasm: A new health system for the 21<sup>st</sup> century*. Washington, D.C.: National Academy Press.
- Johnson, D. E. (1980). The behavioral systems model for nursing. In J. P. Riehl, & C. Roy (Eds.) *Conceptual models for nursing practice* (2<sup>nd</sup> ed., pp. 207-216). New York: Appleton-Century-Crofts.

Knox, D., & Mischke, L. (1999). Implementing a congestive heart failure disease management program to decrease length of stay and cost. *Journal of Cardiovascular Nursing, 14*(1), 55-74.

Krumholz, H. M., Amatruda, J., Smith, G. L., Mattera, J. A., Roumanis, S. A., Radford, M. J., et al. (2002). Randomized trial of an education and support intervention to prevent readmission of patients with heart failure. *Journal of the American College of Cardiology, 39*(1), 83-89.

Linden, A., Butterworth, S. W., & Prochaska, J. O. (2010). Motivational interviewing-based health coaching as a chronic care intervention. *Journal of Evaluation in Clinical Practice, 16*(1), 166-173.

Mason, D. J., Leavitt, J. K., & Chaffee, M. W. (2007). Policy and politics in nursing and health care. St Louis, MO: Saunders Elsevier.

McAlister, F. A., Stewart, S., Ferrua, S., & McMurray, J. J. V. (2004). Multidisciplinary strategies for the management of heart failure patients at high risk for admission: A systematic review of randomized trials. *Journal of the American College of Cardiology, 44*(4), 810-819.

Mosen, D. M., Schmittiel, J., Hibbard, J., Sobel, D., Remmers, C., & Bellows, J. (2007). Is patient activation associated with outcomes of care for adults with chronic conditions? *Journal of Ambulatory Care Management, 30*(1), 21-29.

Moser, A., Houtepen, R., van der Bruggen, H., Spreeuwenberg, C., & Widdershoven, G. (2009).

Autonomous decision making and moral capacities. *Nursing Ethics*, 16(2), 203-218.

National Chronic Care Consortium. (2003). *About the NCCC*. Retrieved from

<http://www.nccconline.org/about/index.htm>

Naylor, M. D. (2000). A decade of transitional care research with vulnerable adults. *Journal*

*of Cardiovascular Nursing*, 14(3), 1-14.

Naylor, M. D., Brooten, D. A., Campbell, R. L., Maislin, G., McCauley, K. M., & Schwartz, J. S.

(2004). Transitional care of older adults hospitalized with heart failure: A randomized controlled trial. *Journal of the American Geriatrics Society*, 52, 675-684.

Newman, M. A. (2008). *Transforming presence: The difference that nursing makes*.

Philadelphia: F. A. Davis.

Office for Social Justice. (2010). *Answers to 25 questions about Catholic social teaching*.

Retrieved from <http://www.osjspm.org/25questions.aspx>, #14

Office for Social Justice. (2010). *Key principles of Catholic social teaching*. Retrieved from

<http://www.osjspm.org/files/officeforsocialjustice/files/2%20page%20catholic%20social%20teachings1.pdf>

Orem, D. E. (1990). A nursing practice theory in three parts, 1956-1989. In M. E. Parker (Ed.),

*Nursing theories in practice* (pp. 47-60). New York: National League for Nursing.

- Partnership for Solutions. (2002). *Chronic conditions: Making the case for ongoing care*. Retrieved from <http://www.rwjf.org/files/research/chronicbook2002.pdf>
- Porter-O'Grady, T., & Malloch, K. (2007). *Quantum leadership: A resource for health care innovation*. Boston: Jones & Bartlett.
- Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. (1992). In search of how people change: Application to addictive behaviors. *American Psychologist, 47*, 1102-1114.
- Prochaska, J. O., & Velicer, W. F. (1997). The Transtheoretical model of health behavior change. *American Journal of Health Promotion, 12*(1), 38-48.
- Ross, J. S., Chen, J., Lin, A. Q., Bueno, H., Curtis, J. P., Keenan, P. S., et al. (2009). Recent trends in readmission rates after heart failure hospitalization. *Circulation: Heart Failure*. Retrieved from <http://circheartfailure.ahajournals.org/cgi/content/short/CIRCHEARTFAILURE.109.885210v1>
- Roy, C. (1974). The Roy adaptation model. In J. P. Riehl, & C. Roy (Eds.), *Conceptual models for nursing practice* (pp. 135-144). New York: Appleton-Century-Crofts.
- Sagor, R. (1992). How to conduct collaborative action research. Alexandria, VA: Association for Supervisions and Curriculum Development.
- Scotto, C. J. (2005). The lived experience of adherence for patients with heart failure. *Journal of Cardiopulmonary Rehabilitation, 25*, 158-163.

- Sneed, N. V., & Paul, S. C. (2003). Readiness for behavioral changes in patients with heart failure. *American Journal of Critical Care, 12*, 444-453.
- Sochalski, J., Jaarsma, T., Krumholz, H. M., Laramée, A., McMurray, J. J. V., Naylor, M. D., et al. (2009). What works in chronic care management: The case of heart failure. *Health Affairs, 28*(1), 179-189.
- Stringer, E., & Genat, W. (2004). *Action research in health*. Upper Saddle River, NJ: Pearson Education.
- Tanaka, M., Yamamoto, H., Kita, T., & Yokode, M. (2008). Early prediction of the need for non-routine discharge planning for the elderly. *Archives of Gerontology and Geriatrics, 47*, 1-7.
- Tourville, C., & Ingalls, K. (2003). The living tree of nursing theories. *Nursing Forum, 38*(3), 21-30, 36.
- U.S. Census Bureau. (2008). *Projections of the population by selected age groups and sex for the United States: 2010-2050*. Retrieved from <http://www.census.gov/population/www/projections/summarytables.html>
- van der Wal, M. H. L., & Jaarsma, T. (2008). Adherence in heart failure in the elderly: Problem and possible solutions. *International Journal of Cardiology, 125*, 203-208.
- Wagner, E. H., Bennett, S. M., Austin, B. T., Greene, S. M., Schaefer, J. K., & Vonkorff, M. (2005). Finding common ground: Patient-centeredness and evidence-based chronic illness care. *The Journal of Alternative and Complementary Medicine, 11* (Supp 1), S-7 – S-15.

Whall, A. L., Sinclair, M., & Parahoo, K. (2009). A philosophic analysis of evidence-based nursing: Recurrent themes, metanarratives, and exemplar cases. In P. G. Reed, & N. B. C. Schearer (Eds.), *Perspectives on nursing theory* (5<sup>th</sup> ed., pp. 202-210). Philadelphia: Lippincott, Williams & Wilkins.

## Appendices

<p><b>Appendix A:</b> Consent form</p>	 Appendix A - Consent Form-final fc
<p><b>Appendix B:</b> Top Things to Work on for the Heart Failure Care Management Model</p>	 Appendix B -Top Things to Work On Fc
<p><b>Appendix C:</b> Care Manager Referral Process</p>	 Adobe Acrobat Document
<p><b>Appendix D:</b> Final Admission and Discharge Criteria</p>	 Appendix D - Final Admission and Discha
<p><b>Appendix E:</b> Criteria for Nonroutine Discharge Planning</p>	 Appendix E - Criteria for Nonroutine discha
<p><b>Appendix F:</b> Recommended Level of Care or Referral Based on Patient Characteristics</p>	 Appendix F - Recommended Level
<p><b>Appendix G:</b> Clinic – Based Care Management Model for Heart Failure Patients Current State January, 2010</p>	 Appendix G - First draft of model - curre
<p><b>Appendix H:</b> Recommended Elements to Include in Assessment, Documentation or Care Planning</p>	 Appendix H - Recommended Eleme
<p><b>Appendix I:</b> Ideas for Documentation Workflow</p>	 Appendix I - Ideas for Documentation W
<p><b>Appendix J:</b> Copy of Medical Home Care Plan Draft</p>	 Appendix J - Copy of medical home care pl
<p><b>Appendix K:</b> Resource File</p>	 Appendix K - Resource file.pdf

<b>Appendix L:</b> Heart Failure Resource File	 Appendix L - Heart Failure resource File.1
<b>Appendix M:</b> Systems Change Evaluation Tool	 Appendix M - Systems Change Eval