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Holly Bottoms

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Advanced Practice Nurses in Transitional Care: A Source to the Solution

Holly Bottoms

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Advanced Practice Nurses in Transitional Care: A Source to the Solution

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Chapter 1 INTRODUCTION

Heart Failure (HF) is one of the largest medical problems of our time, and despite substantial advances in its treatment, morbidity and mortality remain high. HF affects about 5 million people in the United States with 550,000 new patients diagnosed each year (McClintock, Mose, & Smith, 2014). Patients with HF also have a high incidence of comorbidities such as Chronic Obstructive Pulmonary Disease, dementia, renal failure, hypertension, and diabetes. Each year over 1 million people are admitted to an inpatient setting for HF and 27% of patients with HF on Medicare are readmitted within 30 days (Hines, Yu, & Randall, 2010). The Affordable Care Act of 2010 proposed a maximum penalty equal to 1% of regular Medicare reimbursements which has prompted change in how hospitals regard 30-day readmissions. Medicare has implemented lowering the reimbursement rates by 20% of the original admission payment if the patient is readmitted to the hospital within 7 days of discharge and 10% if the patient is readmitted within 15 days of discharge. The Medicare Payment Advisory Commission estimated that the costs associated with 30-day hospital readmissions accounted for \$15 billion in annual Medicare spending with the majority of those costs attributed to preventable causes (Logue & Drago, 2013). Poor outcomes among HF patients are also associated with high readmission rates. Frequent hospital admissions, poor quality of life, and suboptimal self-care behaviors are common patient outcomes associated with inadequate HF management.

Many hospitals and health care systems are focusing on improving performance and patient outcomes in cardiovascular services, with a particular emphasis on how the management of HF can prevent readmissions, decrease the cost, and improve the quality of life and satisfaction for this particular patient population. Despite the potential loss of repayment by Medicare, no evidence has been gathered that shows any substantial decline in HF readmission

rates over the past two years. There is a growing body of evidence that suggests that older adults coping with multiple comorbidities and complex therapeutic regimens are particularly vulnerable during the transition from the hospital to home. Elders with HF have the highest rehospitalization rate of all adult patient groups, with estimated annual total direct expenditures exceeding \$24.3 billion. Hospital discharges for HF have essentially remained unchanged since 1999 (1,094,0000 annually) and approximately 25% of patients are readmitted within 30 days (Gerdes & Lorenz, 2013). Most HF patients are older adults who suffer from multiple comorbidities and take multiple medications which further complicate the diagnostic difficulty and makes management more multifaceted.

Given that this epidemic is likely to be persistent, there is an increasing need to develop and apply cost-effective programs of care to improve health outcomes, quality of life, and reduce readmissions. Transitional care advanced practice nurses are increasingly playing a larger role in the care of heart failure patients, shaping policies that overall impact care and education of patients/families with heart failure, and helping hospital systems and clinics to improve upon the care given to such patients in and out of the hospital. There is an established problem of high re-admission rates of heart failure patients and due to complicated medication and diet regimens, and co-morbidities of these patients, a solution needs to be explored and found to reduce readmission rates, increase quality of life, decrease mortality and morbidity, and decrease the burden from these patients and their families.

Conceptual and Operational Definitions

Heart failure is a complex syndrome in which the heart fails to pump adequately to meet the body's metabolic needs resulting in various pathological conditions and events which is associated with poor outcomes that result from a repeated decompensated HF (Badawy & Hefnawy, 2013). Transitional care programs are interventions that are implemented by a health care professional in the hospital and continue into the home or an outpatient environment such as a clinic. Examples of transitional care programs are the Transitional Care Model, multidisciplinary teams, outpatient heart failure clinics, and telephone or telemonitoring.

The Transitional Care Model consists of an advanced practice nurse (APN) that provides comprehensive in-hospital planning and home follow-up care coordination, including training and support for nurses by a multidisciplinary heart failure team, care plans developed by nurses in collaboration with patients' physicians that reflect patient/caregiver goals and evidence-based guidelines, patient/caregiver education, coordination of care, across settings and nurse-delivered clinical services, including medication management. A multidisciplinary team can consist of registered nurses, APNs, physicians, registered dietitians, social workers, pharmacists, and physical therapists that works together in the home environment or an outpatient clinic to educate the patient/caregiver on their disease processes, how to manage symptoms, manage medications, and improve overall health. Outpatient heart failure clinics are clinics ran by cardiologists, APNs, and nurses specializing in heart failure and focus on monitoring the patients' symptoms, education, and promoting self-care behaviors. Telephone or Telemonitoring interventions are carried out by nurses or APNs using a telephone to contact patients, using video or internet-based tools to monitor weight, blood pressure, and heart rate. APNs are nurses with a graduate or post

graduate education and consist of nurse practitioners, clinical nurse specialists, nurse midwife, and nurse anesthetist.

Theoretical Framework

The theoretical framework that was used for this study is based on Dorothea Orem's Self-Care theory (1971). Orem's self-care theory states that people should be self-reliant and responsible for their own care and others in their family needing care. Orem also states that successfully meeting universal and development of self-care requisites is an important component of primary care prevention and ill health. Orem's theory states that a person's knowledge of potential health problems is necessary for promoting self-care behaviors and self-care and dependent care are behaviors learned within a socio-cultural context (Nursing Theories, 2012). The basis for the transitional care programs is to empower patients and caregivers with the knowledge of how to manage the disease process, manage symptoms, manage medications, and in turn promote self-care behaviors. Before individuals can be self-reliant and can show appropriate self-care behaviors, the patients and caregivers must be educated thoroughly and information reinforced in order to maintain health and avoid costly readmissions to the hospital.

Purpose Statement

The aim of this review of literature is to examine how advanced practice nurses in transitional care programs can effectively reduce readmissions among HF patients. It is important to determine whether this level of provider makes a difference in the outcomes of patients who use comprehensive discharge programs such as transitional care and if this can effectively reduce readmissions to facilities.

Chapter 2 LITERATURE REVIEW: METHODS AND RESULTS

Eligibility Criteria for Article Selection

Eligibility criteria for this literature review are as follows: patients' primary diagnosis of heart failure, inclusion of a transitional care program, direct involvement by APNs in the transition of care, patients aged 60 years and older, and inclusion in the study of effectiveness on readmission rates.

Information Sources

An extensive review of literature from 2000-2014 was completed. Studies were identified by a computerized search of CINAHL, MEDLINE, and OVID databases. The terms used in the subject headings to search for these articles include the following: congestive heart failure, heart failure patients, elderly, transitional care programs, advanced practice nurses, advanced-practice nurse-led transitional care programs, readmission rates, and rehospitalizations. The search revealed 1,523 articles and 21 articles met the criteria for this review of literature. The research articles are a combination of randomized control trials, systematic reviews, quasi-experimental, retrospective and prospective, chart reviews, mixed methods, and qualitative studies.

Study Selection Process

Articles that were written before 2000 were excluded due to the evidence would be outdated. Articles that have a registered nurse directed program were excluded due to this literature review wants to explore how the APN role effects this patient population. Articles that included patients less than 60 years old were excluded due to this review wants to explore elderly

heart failure and the Medicare population. The APN role defined in this review is a registered nurse with a graduate degree with the title of nurse practitioner, clinical nurse specialist, or nurse educators with a background in HF, geriatrics, and community-based programs.

Chapter 3 DISCUSSION

Synthesis of Research

Brandon, Schuessler, Ellison, & Lazenby (2009) performed a randomized control trial to determine the effect of an advanced practice nurse-led telephone intervention on hospital readmissions, quality of life, and self-care behaviors of patients with HF. Twenty participants were randomly assigned to either an experimental group that received the APN-led telephone intervention or a control group that received usual care in a pretest-posttest experimental study. There was a significant interaction in HF-related hospital readmissions in the APN-led telephone intervention group versus the usual care group with the APN-led group having significantly fewer hospital readmissions ($p=0.013$). The results for the APN intervention group on self-care behaviors also revealed a significant interaction ($p<0.001$). The intervention group also reported more improvement in overall quality of life and the control group reported a decrease in overall quality of life. The results of this study supports the idea that an APN-led telephone intervention positively impacts outcomes of patient with heart failure, in particular improving self-care behaviors and reducing hospitalization admissions. The researchers conclude that healthcare systems need to consider the importance of having an APN in the coordinator role in order to offer improved disease management of this growing population.

Blue et. al (2001) also performed a randomized control trial to determine whether a specialist nurse intervention improves outcomes in patients with chronic HF. 165 patients with HF due to left ventricular systolic dysfunction were randomized into two groups, the usual care group and the intervention group. The intervention group was seen by the nurse specialist in the hospital and thereafter with home visits for up to one year post discharge. The usual care group

were managed by the hospitalist and followed up with their primary care physician post discharge. The main outcome of the study was to see if the nursing intervention had any impact on death rates or readmissions to the hospital with worsening HF. The results of this study showed that compared to the usual care group, patients in the intervention group had fewer readmissions (37% versus 53%) for any reason, fewer admissions for HF (19 versus 45, $P < 0.001$), and spent fewer days in the hospital for HF (mean of 3.43 versus 7.46 days, $P = 0.0051$). The researchers concluded that home-based intervention from nurse specialists reduces readmissions for worsening HF and that regular contact to review treatment and patient education are likely to contribute to this effect.

Badawy & Hefnawy (2013) led a randomized control trial to determine the effect of pre-discharge educational intervention and post-discharge intervention carried out by specialist nurses on re-admission, mortality, and quality of life. A total of 60 patients were randomly assigned to either the intervention group or a control group. The intervention group participated in an educational program using face to face education before discharge, outpatient HF nursing interventions, and monthly telephone calls for over nine months to remind patients about main instruction in addition to the written instruction of HF management with the emphasis on self-care behaviors. The control group received usual care which was HF management written instructions. Patients in the intervention group were found to have 66.67% decreases in the total number of readmissions as compared to the control group. Fewer deaths and improved quality of life were also reported in the intervention group. Results also showed significant improvement in HF knowledge and compliance of health behaviors in the intervention group after 12 months post discharge versus the control group. The authors suggest that all patients with HF should be offered pre-discharge education, post discharge outpatient nursing support and monthly

telephone follow up in order to reduce readmission, death, and increase compliance with self-management and HF quality of life.

Naylor et. al (2004) conducted a similar randomized control trial to examine the effectiveness of a transitional care intervention delivered by APNs to elders hospitalized with HF. 239 patients 65 years of age and older and diagnosed with HF were randomized into two groups, the intervention and control group. The intervention group was followed by an APN for three months and visited by the APN in the hospital and in the home. The control group received usual care followed by admitting physician and discharged home with home health services if appropriate. At 52 weeks, the intervention group had fewer readmissions and lower mean costs. The intervention group also had improvements in quality of life and patient satisfaction, but was only short term, up to 12 weeks post discharge. A comprehensive transitional care intervention for elders hospitalized with HF reduced total number of rehospitalizations and decreased costs, thus demonstrating great promise for improving clinical and economic outcomes.

Thompson, Roebuck, & Stewart (2004) performed a similar randomized control trial to determine the effectiveness of a hybrid program led by nurse specialists of a clinic plus home-based interventions in reducing recurrent hospitalizations in HF patients. HF patients were assigned to an intervention group and a control group. The intervention group was followed by a specialist nurse with a combination of clinic and home visits for 6 months post discharge. The usual care group was followed by their primary care physician and not seen by the specialist nurses. During the study follow-up, more usual care group patients had unplanned readmission for any cause, the intervention group accumulated significantly fewer unplanned readmissions and days of recurrent hospital stay. The intervention group also adhered to the sodium restrictions more than the usual care group during the six month follow-up. This study provides

the evidence that a hybrid program involving specialist nurses can positively improve outcomes in HF patients.

Staples & Earle (2008) conducted a quasi-experimental study to evaluate the nature of patient issues, telephone nursing interventions, and workload at one HF clinic. The nurses involved were one nurse practitioner, one clinical nurse specialist, and one registered nurse that conducted several telephone calls to patients who visited the clinic. These nurses spent 24% of their working hours doing telephone visits, medications were changed 583 times and diagnostic tests were ordered 207 times, and the nurses initiated 65% of calls with patients and their families. The researchers concluded that the education of patients and their families is a common component of telephone monitoring and management of programs and has been linked to reduced HF hospitalizations.

Williams, Akroyd, & Burke (2010) also conducted a quasi-experimental study to evaluate the effectiveness of a transitional care service on readmissions and length of stay in the hospital for patients with HF. This design was used over a period of 18 weeks on two groups, a control group and the transitional care group. The transitional care group was followed by a clinical nurse specialist in the hospital at discharge and after discharge in a clinic setting or at the patients' homes. The usual care group was obtained from a database and was matched closely to the transitional care group in terms of demographics. The number of readmissions was higher in the control group (14.7%) compared to the transitional care group (8.5%). Findings relating to the comparison of readmission rates between the two groups were as expected and this suggests that follow-up and close monitoring of symptoms is beneficial for the patient and family, and at the same time reduces costs for hospital trust.

Ornstein, Smith, Herlands-Foer, Lopez-Cantor, & Soriano (2011) executed a detailed mixed methods two-year study to describe a nurse-practitioner-led transitional care program embedded within an existing home-based primary care program. The nurse practitioner followed these patients throughout hospitalization and into the home up to eight weeks after discharge from the hospital. The program improved communication between home-based primary care providers and inpatient providers of all disciplines and facilitated the timely and accurate transfer of critical patient information. The intervention failed to decrease hospital length of stay and readmission rate significantly for people who were hospitalized. The authors suggests that this model of a nurse practitioner-led program may be feasible for enhancing inpatient management and transitional care for older adults in homebound primary care programs and should be considered to enhance the homebound primary care model.

Stauffer et. al (2011) conducted a prospective study with concurrent controls to test an advanced practice nurse-led transitional care program for patients with HF. Much like Naylor et. al (2004), this study also had an APN follow the patient from hospitalization to home for up to 3 months post discharge. The intervention significantly reduced adjusted 30-day readmission rates by 48% during the post-intervention period. The intervention had little effect on length of stay or total 60-day direct costs. The researchers' state under the current payment system, the intervention reduced the hospital financial contribution margin on average \$227 for each Medicare patient with HF. The researchers suggests that transitional care programs reduce 30-day readmission rates for patients with HF and that the potential of the intervention is underscored in order to be effective in the real-world setting, but payment reform may be required for the intervention to be financially sustainable by hospitals.

Hendrix et. al (2013) completed a retrospective study to describe the development, implementation, and preliminary results of the Transitional Care Partners, a clinical demonstration program that supports the transition from hospital to home of older veterans. The hospital records of the Transitional Care Partner patients were tracked from their hospital and emergency department visits before and after the Transitional Care Partner enrollment. The proportion of patients with one or more emergency department visits and rehospitalizations is consistently lower among the Transitional Care patients compared to the non-Transitional Care patients at 30 and 60 days of hospital discharge. The description of the implementation of the Transitional Care Partners offers an example of how nurse practitioner-led interprofessional care models can be adapted to the needs of specific healthcare systems, and how they can be monitored to evaluate their reach, effectiveness, and fidelity to the core components of proved care models.

Davidson, Paull, Rees, Daly, and Cockburn (2005) conducted a qualitative study to document the activities of home-based heart failure specialists. A modified narrative analysis of clinical notes of home-based heart failure nurse specialists during a 12 month period was used. Data analysis revealed seven key activities of the nurse specialists and they included the following: monitoring signs and symptoms and reinforcing patients' self-management; organization, liaison, and consultation with other healthcare professionals to deal with changes in clinical status; assisting patients in their desire to avoid institutionalized care; identified patients' psychosocial issues; providing support; and helping patients' and their families deal with death and dying. The authors suggests that the majority of the activities of home-based HF nurse specialists are related to facilitating communication between health professionals and providing information, and support to patients' and their families.

Bradway et. al (2011) conducted a qualitative study to describe barriers and facilitators to implementing a transitional care intervention for cognitively impaired older adults and their caregivers lead by APNs. The APNs implemented an evidence-based protocol, the Transitional Care Model, to optimize transitions from the hospital to home. An exploratory, qualitative directed content analysis examined 15 narrative case summaries written by the APNs and field notes from biweekly case conferences. Three central themes emerged from this study and they include patients and caregivers having the necessary information and knowledge, care coordination, and the caregiver experience. The researchers' implications are that APNs implemented individualized approaches and provided care that exceeds the type of care typically staffed and reimbursed in the American Health System. The authors imply that reimbursement reform as well as move formalized support systems and resources are necessary for APNs to consistently provide such care to patients and their caregivers during this vulnerable time of transition.

Hamner (2005) performed a review of literature to provide a systematic evaluation of the impact of post hospital nursing interventions in the management of HF. An extensive review of literature was performed and 28 studies were identified through MEDLINE and CINAHL databases. Four models of nursing interventions emerged from these studies and they are as follows: home-based interventions, multidisciplinary interventions, HF clinics, and telephone or technology interventions. The author concluded that current available data suggests that post hospital nursing interventions in HF can improve clinical outcomes, including readmission rates and decrease health costs.

Peikes, Lester, Gilman, and Brown (2013) performed a review of literature of six models being used by Community-Based Care Transitions Program and examined the evidence base for

these models, describe how the Community-Based Care Transition programs are adapting the models, and discuss research approaches that could help draw lessons from these pilot programs. The researchers state that there is a small body of evidence that suggests these models are effective. Four of the six models, Transitional Care Model, Care Transitions Intervention, Enhanced Discharge Planning Program, and Project Re-engineered Discharge have been evaluated using randomized control trials. The other two models, Transition Home for Patients with HF and Better Outcomes for Older Adults Through Safe Transitions reported estimates of program effects, but these were generated by less rigorous methods, so they may be biased. The authors state that the evidence so far is largely favorable, but only one model shows evidence of long term effects which is the Transitional Care Model. The Transitional Care Model reduced readmissions by 36% and reduced the proportion of patients readmitted by 19%. The other models showed reduction of readmissions, but only short term, up to 180 days post discharge. The researchers concluded that there is a small body of evidence that a transitional care intervention can be effective, but currently little information is available to determine which components of each model are important and how to adapt the models successfully in a variety of settings.

McClintock, Mose, and Smith (2014) conducted a review of literature to review current HF readmission prevention strategies for effectiveness. The researchers reviewed inpatient, outpatient, and the role of the nurse practitioner (NP). Inpatient measures reviewed included: one hour of HF education before discharge, comprehensive medication reconciliation, adequate discharge planning to ensure home care needs are met, and communication between patient, family, and healthcare team. Outpatient measures named include the following: early follow-up, case management, HF clinics, mailings/telemonitoring and home health, interventions targeting

caregiver burden, and cardiac rehabilitation. The researchers discussed that NP-led interventions such as outpatient HF clinics, home-based, and telephone interventions reduce readmission rates and decrease mortality rates. The authors concluded that HF readmission prevention should involve HF self-management education, ongoing follow-up, and support systems.

Wajnberg, Wang, Aniff, and Kunins (2010) conducted a retrospective chart review to evaluate the effect of an urban house calls program on healthcare utilization. The researchers looked at hospitalizations and skilled nursing facility admissions before and after enrollment in the program. 61% of patients had one or more hospitalizations before enrollment, compared with 18% after enrollment ($P=0.001$). The median hospitalization rate decreased and the skilled nursing facility placement stayed the same. The researchers concluded that a house calls program may be associated with fewer hospitalizations and skilled nursing facility placements and models of care that reduce morbidity and preserve quality of life care critical to help homebound older adults remain in their communities.

Gerdes and Lorenz (2013) conducted a retrospective chart review to compare the effectiveness of usual care plus outpatient interdisciplinary education to bedside education of HF readmissions at 30, 60, and 180 days. The bedside education group received bedside education provided by HF nurses, a physical therapist, and a registered dietician. The education included a HF clinic handbook along with verbal review of symptoms, dietary sodium restrictions, and prescribed medications. The interdisciplinary group received an additional optional class that was taught by an interdisciplinary team and the education consisted of three hour class of evidence-based self-management recommendations. The interdisciplinary team consisted of a pharmacist, physical therapist, registered dietician, psychologist, a NP, and two HF nurses. The 30-day readmission rate was significantly lower for the interdisciplinary group versus the usual

care group ($P=0.021$). A decrease in the number of readmissions at both 60 and 180 days was noted in the interdisciplinary group compared to the usual care group but the differences did not reach statistical significance ($P=0.436$, $P=0.89$).

Delgado-Passler and McCaffrey (2005) implemented a review of literature to examine advanced practice nurse directed versus registered nurse directed telemanagement programs for HF patients. The researchers used CINAHL and OVID databases to find articles. The researchers found that implementing a telemanagement program directed by an APN after hospital discharge reduced costs and decreased hospitalizations associated with HF and improves the patients' quality of life. The researchers concluded programs that are APN-directed can improve the quality of care given to HF patients while reducing the cost to the institution, the patient, and the healthcare system.

McCauley, Bixby, and Naylor (2006) conducted a review of literature to investigate whether, in a randomized controlled trial of vulnerable elders with HF, advanced practice nurses who were coordinating care in transition from hospital to home could improve outcomes, prevent rehospitalizations, and reduce costs when compared with usual care. This research examined Naylor et. al (2004) earlier intervention of a transitional care program led by an APN. The APN was introduced into the patient's care at discharge from hospital and was followed up in the home up to 3 months after discharge. The APN's strategies focused on improving patient/family or caregiver effectiveness in managing their illnesses, strengthening the patient/provider relationship, and managing comorbid conditions while improving overall health. APN's successfully educated patients about the meaning of their symptoms and appropriate self-management strategies, improved patient/provider communication patterns, and marshaled caregiver/community resources to maximize patient adherence to treatment plan and overall

quality of life. The researchers state that the APN's were effective in reducing rehospitalizations related to comorbid conditions ($p < 0.013$). The researchers concluded that this report supports APN directed care optimizes health outcomes of high risk elders in a cost-effective manner.

Di Salvo and Stevenson (2003) conducted a review of an interdisciplinary program to examine management of HF patients and their shift of care from the hospital to the clinic and to the home and evaluate quality of care, reduction of readmissions, improving functional status, and quality of life. This program is comprised of a physician and a NP. The NP is in charge of enrolling patients following hospital discharge. The goal of this program is stabilization of the patient. In order to reach stabilization, the physician and the NP evaluates the patients' needs and creates an individualized treatment plan and therapeutic goals and this can include home therapy, skilled nursing visits, and social workers. Once patients are stabilized, they are transitioned into a longitudinal care program which consists of long-term outpatient HF monitoring and therapy under the supervision of the NP and the physician. The authors concluded that this interdisciplinary transitional team optimized quality of care with consensus guidelines, reduced admissions by 40%, improved functional status, and quality of life.

Ahmed, McAlister, Lawson, and Teo (2002) conducted a systematic review of randomized control trials to determine whether the management of HF by specialized multidisciplinary HF disease management programs was associated with improved outcomes. The researcher found articles on human randomized trials involving specialized HF disease management programs in the MEDLINE database and found 11 randomized control trial studies. The researcher found that patients receiving care from specialized HF disease management programs had a 13% lower risk of hospitalization than those receiving usual care. Seven of the nine studies did not show any significant association between the intervention and reduced

hospitalizations. The author concluded that specialized disease management programs were cost-effective, and HF patients cared for by these programs were more likely to undergo fewer hospitalizations, but the studies did not provide any conclusive association between the programs and quality of care or mortality.

Limitations

Limitations were examined in the articles. Small sample size and convenience sampling were named several times throughout the review of literature. Small sample size can threaten external validity, skew the results, and lessen the ability to generalize the findings of the study. Convenience sampling can create bias due to the fact that research assistants are not blinded to the intervention and control groups. Some of the studies were conducted at a Veteran's hospital; therefore the samples consisted of mostly male patients. This type of sampling can lead to false results due to generalizing the results to both genders. Other limitations include the literature review revealed only five randomized control trials which are the highest level of evidence and seven review of literature articles, the lowest level of evidence.

Chapter 4 CONCLUSIONS

Findings from these studies establish that an APN involved in a transitional care program is effective in reducing readmissions among HF patients. A good body of evidence shows that APNs involved in these programs not only reduce rehospitalizations, but also decrease costs, increase quality of life, and reduce mortality. Even though there is sufficient evidence that suggests an APN involved transitional care program is effective, more research is needed in order to narrow down which transitional care program is more effective in order to study the implications. The future implications for research can include APN directed transitional care in other chronic diseases such as diabetes and chronic obstructive pulmonary disease in order to reduce hospitalizations and increase management of chronic diseases.

In the face of Medicare reimbursement being reduced due to increased rehospitalizations, an APN involved transitional care program would be an asset to the hospital, to Medicare, and most importantly the patient. HF patients are at higher risk of rehospitalizations due to comorbidities, lack of education, medication non-compliance, and lack of self-care behaviors. A transitional care program with the involvement of an APN can aid the patient in developing the self-care behaviors in order to manage their HF and stay out of the hospital.

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