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Quality Improvement Project to Assist with Implementation of Congestive Heart Failure and Diabetes Mellitus Checklist to Reduce Rehospitalizations in Long-Term Care Facilities

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QUALITY IMPROVEMENT PROJECT TO ASSIST WITH IMPLEMENTATION OF
CONGESTIVE HEART FAILURE AND DIABETES MELLITUS CHECKLIST TO
REDUCE REHOSPITALIZATIONS IN LONG-TERM CARE FACILITIES

by

Tia Jones and Averia Parks

A Doctoral Project
Submitted to the Graduate School,
the College of Nursing and Health Professions
and the School of Leadership and Advanced Nursing Practice
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Nursing Practice

Approved by:

Dr. Carolyn Coleman, Committee Chair
Dr. Marti Jordan, Committee Member

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ABSTRACT

Emergency room visits and hospitalizations are commonly a result of preventable circumstances related to improper treatment of chronic health conditions due to inadequate medication reconciliation during the transition from hospital to another setting. Approximately one-third of residents in long-term care facilities will take an average of nine medications daily, significantly increasing the risk of medication errors, particularly during a transition from hospital to LTC facility (Grissinger, 2016). Chronic health conditions such as diabetes mellitus and congestive heart failure (CHF) require continued education, monitoring, and change in interventions to manage. The changes in interventions during hospital stays such as medication changes are necessary to manage acute illnesses, however, following discharge, medication reviews, and patient monitoring are essential to reducing rehospitalization for chronic healthcare conditions. The goal is to research the best evidence-based practice to determine the root cause of why certain residents require recurrent emergency room visits and rehospitalization for complications related to diabetes mellitus and CHF, to improve patient's quality of life and reduce rehospitalizations as well as find a solution to effectively treat and manage the chronic health conditions.

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DEDICATION

We would like to dedicate this doctoral project to our family and friends. To our families and friends thank you for all your support and encouragement. You all were our biggest supporters and motivators throughout this journey. We are so humbly grateful for your love and inspiration; we could have not made it without you all. To our fathers who are in heaven, we love you and miss you both very much, we wish you were here physically to share these accomplishments, however, we know you both are in heaven celebrating and you both have been our greatest inspiration throughout this process and we hope that we have made you both proud.

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LIST OF ABBREVIATIONS

<i>ADA</i>	American Diabetic Association
<i>ADL</i>	Activities of Daily Living
<i>APN</i>	Advanced Practice Nurse
<i>BNP</i>	Brain Natriuretic Peptide
<i>CASPER</i>	Certification and Survey Provider Enhanced Report
<i>CHF</i>	Congestive Heart Failure
<i>CMS</i>	Centers for Medicare and Medicaid Services
<i>CNA</i>	Certified Nursing Assistants
<i>DNP</i>	Doctor of Nursing Practice
<i>HIPPA</i>	Health Insurance Portability and Accountability Act
<i>IRB</i>	Institutional Review Board
<i>LPN</i>	Licensed Practical Nurse
<i>LTC</i>	Long Term Care
<i>MD</i>	Medical Director
<i>MDS</i>	Minimum Data Set
<i>NCBI</i>	National Center for Biotechnology Information
<i>PI</i>	Principal Investigator
<i>RN</i>	Registered Nurse

CHAPTER I - INTRODUCTION

In long-term care facilities, new admits and current long-term care residents have rehospitalizations within 30 to 90 days of admit or readmit because of pertinent home medications or medications to treat chronic diagnosis were not resumed following hospitalization. Nurses reviewing the medications upon admission cannot prescribe medications that they feel may be pertinent, and the medical provider complains of the bulk of papers and medications make it hard to thoroughly review each medication and diagnosis, relying on the admission team to review information for accuracy. However, with new policies, procedures, reconciliation forms, and diagnosis-specific checklists for medications can make it easily reviewable for the medical provider and less time-consuming in which a thorough review can be completed for pertinent medications and interventions to be prescribed as needed.

An advanced practice nurse (APN) has the ability to evaluate, diagnose, and monitor the resident. Following admission and assessment the APN access to patient medical records and laboratory values and reconcile medications, as well as prescribe medications that are pertinent to the resident's diagnoses, especially those common diagnosis in which seem to result in rehospitalizations if not controlled. The process should be less time-consuming and condensed to allow ease in reviewing of medications. Rehospitalizations can have a negative impact on residents in which given their advanced age and coexistent disability such as cognitive and physical deficits, residents of long-term care facilities are especially at risk for adverse events (harm or injury resulting from medical care, including the failure to provide needed care) after hospital discharge (Kapoor et al., 2019). The Resident's thorough medication reconciliation and healthcare

provider review of all pertinent medications are essential to reducing rehospitalizations as it relates to medication errors.

Problem Statement/Clinical Question/PICOT

Medication reconciliation requires a thorough review of medications prehospital, during hospitalization, and at discharge from the hospital, to ensure that the patient is accurately being treated for each healthcare condition in which they have a medical diagnosis. Deficiency in the admission process with medication reconciliation is resulting in rehospitalizations for noted common chronic healthcare conditions of congestive heart failure and diabetes mellitus. Medication discrepancies that are missed during the admission process can lead to medication errors and increase the resident's risk of rehospitalization. The clinical problem is the residents in long-term care and swing bed facilities requiring rehospitalization following a recent admission or readmission due to a lack of continuum of pertinent home medications, medical interventions, or medications for chronic diagnosis during the transition from hospital to long-term care and swing bed facilities. Heart failure is the cause of nearly 1 million admissions to the hospital in the United States and is precisely related to compliance with medication regimens (Oscalices et al, 2019). Rehospitalizations can have negative impacts on the quality of life of residents in those facilities, as well as demonstrate a lack of care on behalf of staff.

PICOT: For residents aged 65 and older in long-term care and swing bed facilities with the diagnosis of CHF or diabetes mellitus (P), how effective is long-term care admission medication reconciliation for pertinent medications (I) compared to hospital discharge medication reconciliation (C), at reducing rehospitalization (O) within the first 90 days of admission or readmission (T). Will implementing new policies, procedures, and

medication reconciliation forms indicated by evidence-based practice improve medication reconciliation during the admission process and reduce rehospitalizations for residents with chronic healthcare conditions stated above?

Available Knowledge

Heart failure and diabetes mellitus are among the common chronic healthcare conditions that cause rehospitalizations within 90 days of admission and readmission. One of the most frequent causes of an elderly person having to be hospitalized is heart failure, this places them at risk for a rise in health declines, readmission rates, and death (Suksatan & Tankumpuan, 2021). Hospitalization can have a negative impact on residents physically, mentally, and socially. Treatment and management of these healthcare conditions are imperative to reduce rehospitalization and decrease the burden on residents.

Congestive Heart Failure Defined

The terms congestive heart failure (CHF) and heart failure are interchangeable, in which congestive heart failure is typically referred to when describing heart failure with pulmonary involvement. Congestive heart failure is a healthcare condition in which the heart does not function properly to distribute oxygenated blood to the body. There could either be left-sided heart failure or right-sided heart failure. Risk factors include hypertension, obesity, diabetes, arterial and venous insufficiency, decreased physical activity, smoking, drinking alcohol, and a diet high in fats and sodium. Treatment of congestive heart failure includes antihypertensive medications, ACE inhibitors, beta-blockers, diuretics, and cardiac glycoside (Digoxin).

Clinical Manifestations of Left and Right Heart Failure

Left-sided heart failure is demonstrated by signs and symptoms of shortness of breath, fatigue, pulmonary congestion, and dyspnea. Right-sided heart failure is demonstrated by signs and symptoms of peripheral edema, fatigue, and weight gain. Initially, patients may be asymptomatic, followed by fatigue and shortness of breath, and as it progresses the declining ventricles cause blood to back up causing venous distention, peripheral edema, and pulmonary edema (Rosenthal, & Burchum, 2021).

Diabetes Mellitus Defined

Diabetes mellitus is a chronic healthcare condition characterized by insufficient production of insulin by the pancreas or the body does not utilize insulin as it should. Diabetes Mellitus is characterized by an increase in blood glucose levels. Blood glucose levels are elevated due to the inadequacy of insulin production, in which insulin production and secretion is made by the pancreas to reduce blood glucose levels. Risk factors for diabetes mellitus include family history, obesity, decreased physical activity, unhealthy eating, and ethnicity. Treatment for diabetes mellitus includes a diabetic diet, exercise, oral hypoglycemics, and short and long-acting insulin.

Manifestations of Diabetes Mellitus

Diabetes Mellitus can be characterized as controlled or uncontrolled. When treated properly with diet, exercise, antidiabetic medications, and insulin it is considered controlled. However, some patients may exhibit signs and symptoms of hyperglycemia or hypoglycemia. Hyperglycemia does not always have immediately noticeable effects, sometimes individuals may go without having any physical symptoms, however very high blood sugar can cause the following symptoms of extreme thirst, frequent urination,

fatigue, nausea, and dizziness (InformedHealth.org, 2020). Signs of hypoglycemia include racing pulse, cold sweats, pale face, headache, extreme hunger shivering, feeling weak, restless, anxious, and confused.

Needs Assessment

A needs assessment was identified for patients with a diagnosis of diabetes and congestive heart failure. Elderly patients have an increased risk of error during conversion from hospital to post-hospital setting because of comorbidities and multiple medications (Spencer, 2020). The needs are treatment and management while in long-term care settings and education prior to discharge home if applicable of these chronic health conditions to reduce hospitalizations and recurrent hospitalizations. New policies, procedures, and medication reconciliation forms are needed for thorough medication reconciliation prior to admit to ensure the resident has prescribed medications and interventions appropriately. The purpose is to review medications and other physician orders prior to admit and closely monitor those at risk for recurrent hospitalizations for the above diagnosis and determine the root cause analysis compared to others with the same diagnosis. Upon gathering information, and talking with administrative staff and nursing, congestive heart failure and diabetes complications were the top reasons for hospital readmissions within Perry County Nursing Center facility. “Decompensated heart failure is the most common cause of hospital admission among the Centers for Medicare and Medicaid Services’ population, comprising more than half of the national cost of heart failure care” (Cox et al., 2017). Mississippi ranked first in the nation for overall diabetes prevalence in 2016, with an estimated 308,295 adult Mississippians living with diabetes, which is over 13.6% of the adult population and 1, 083 deaths

related to diabetes in 2016 (Mississippi State Department of Health [MDH], 2018).

Diabetes is known to be a costly disease. The American Diabetes Association estimated a cost of \$10,042 per Mississippian with diabetes, and the cost of treating and managing diabetes in Mississippi has exceeded 2.74 billion dollars.

Synthesis of Evidence

Initial research was conducted by reviewing scholarly articles, books, and other sources relevant to my research topic. Online search engines that generated the most promising best evidence practice included Cochrane Library, *Google Scholar*, National Center for Biotechnology Information (NCBI), and PubMed. The search included looking up keywords such as congestive heart failure, diabetes, medication reconciliation, rehospitalizations, chronic health conditions, geriatrics, long-term care, transition, depression, and evidence-based practice. Cochrane Library, Google Scholar, NCBI, and PubMed generated over 14,000 articles with the use of keywords and then narrowed them down to 108 total articles, within five years, useful for this Doctor of Nursing Practice (DNP) project with emphasis on management and treatment of geriatric patients with diabetes or congestive heart failure, rehospitalizations, and medication reconciliation and others had insufficient evidence to support this DNP project. The search revealed randomized control studies, cohort studies, meta-analyses, systematic reviews, and prospective and retrospective studies of individuals 65 years and older. For the most up to date evidence based practice studies and data completed within the past five years were utilized.

Focused topics included residents in long-term care facilities requiring rehospitalization following a recent admission or readmission due to a lack of continuum

of pertinent home medications or medications for chronic diagnoses, such as CHF and diabetes mellitus, resumed during the transition from hospital acute stay to long-term care facilities due to the unknown need at the time of admission. “Evidence-based findings noted that poor communication across care settings and mistakes during order transcription are the most frequent causes of medication errors during transitions from hospitals to LTC facilities and that more than half of these errors originated during initial documentation of medication therapy upon admission to the LTC facility” (Grissinger, 2016). Increased communication with the interdisciplinary teams between the acute care and long-term care setting could potentially lower hospital readmission rates (Viberg et al., 2022).

The rationale of this DNP project was to find and utilize the best evidence-based practice and use along with current knowledge and experience and reduce rehospitalization for residents aged 65 and older with chronic health conditions such as congestive heart failure, and diabetes mellitus, beginning with thorough medication reconciliation to reduce medication errors, and facility policy and procedure changes for the admission and medication reconciliation process. The theoretical framework concept was used to guide the development of interventions in relation to the purpose of the DNP project to improve the lives of residents in long-term care facilities by addressing deficiencies in medication reconciliation and the admission process that causes chronic healthcare conditions to not be properly treated causing rehospitalizations. There were three models that were potentially useful which include the health belief model, the theory of unpleasant symptoms, and the theory of uncertainty of illness. The health belief model was useful as a guide for health promotion and disease prevention. The theory of

unpleasant symptoms was useful with diabetes mellitus in which the theory is used to recognize symptoms in time enough to treat to reduce complications. The theory of uncertainty of illness could be utilized to understand the resident's perception of their hospitalization and assist them with recognizing possible signs and symptoms of complications of their healthcare condition for them to notify staff of complications so staff can initiate treatment and possibly prevent rehospitalization.

Specific Aims

The purpose of this project was to find the best evidence-based practice and use along with current knowledge to reduce rehospitalization for patients aged 65 and older with chronic health conditions such as congestive heart failure and diabetes mellitus beginning with thorough medication reconciliation to reduce medication errors that could lead to complications of chronic healthcare conditions and eventually result in rehospitalization. Residents will maintain blood glucose levels within normal range per provider orders, with proper medication needs established during the admission process with the use of new protocols for diabetic residents, a diabetic checklist, and close monitoring of blood glucose levels and laboratory values to reduce complications and possible rehospitalization. Residents with a diagnosis of congestive heart failure will not have an excessive weight gain, will maintain optimal oxygen saturation, will maintain endurance, and will have no complications of congestive heart failure. The objective goals of congestive heart failure were measured by edema checks daily, daily or weekly weights will be obtained, oxygen saturation checked with pulse oximetry daily, a resident observed for shortness of breath, and endurance by assessing resident's activity tolerance. Rehospitalizations can be detrimental to healthcare costs but most importantly

detrimental to residents who must endure being hospitalized. “Providing high-quality care for patients remains the ultimate goal for all healthcare providers and one of the main measures to achieve this goal is to decrease preventable adverse events after discharge from the hospital” (Hudali et al., 2017, p. 1).

DNP Essentials

The DNP essentials that were utilized for this DNP project include Essential II, VI, and VIII. Essential II was useful to this project in developing guidelines and interventions followed by evaluating the outcomes related to the interventions implemented. Essential VI was important to include in the project because it was useful to collaborate and lead a team of interprofessional to address issues within the healthcare system and implement change (Chism, 2019). Utilization for essential VIII was to conduct comprehensive assessments, serve as a mentor to other nurses, and participate in the education of patients in complex health situations (Chism, 2019). These essentials helped assess the organization's protocols, identify issues, and collaborate with others to address the issues followed by implementing interventions and change and assessing the outcome.

Summary

The focus population was residents in a long-term care setting, age 65 and older with a diagnosis of congestive heart failure and diabetes. Hospitalization rates were reviewed for those with these diagnoses and the reconciliation of medications was reviewed from transitioning from hospital to long-term care and the root cause of rehospitalizations was evaluated in order to implement change and reduce the rehospitalization rates and reduce the number of hospitalizations. Medication lists were

thoroughly assessed prior to hospitalization, during hospitalization, and at the time of discharge, and collaborated with an interdisciplinary team to make sure pertinent medications and physician orders were appropriate. Outcomes evaluated included a reduction in rehospitalization for patients with congestive heart failure and diabetes due to appropriate medication reconciliation and medical management of the above diagnosis following the transition from hospital to long-term care setting. If a resident's chronic healthcare condition is not properly treated, then complications can arise and a need for hospitalization for stabilization may be warranted, however, if medication errors and issues with medication reconciliation are handled timely then rehospitalizations may be reduced, improving the resident's quality of life.

CHAPTER II - METHODS

Determining the root cause of why residents required recurrent emergency room visits and rehospitalization related to complications of diabetes mellitus and/or CHF diagnosis was key to the implementation of interventions to improve resident's quality of life and reduce rehospitalizations, as well as find a solution to effectively treat and manage the stated chronic healthcare conditions. Medication discrepancies during care transitions have been reported as prevalent and are linked with adverse drugs (Redmond et al., 2018). To combat possible causes of rehospitalizations there were evaluations of the admission process, medication reconciliation process, and implementing of new guidelines and checklist to follow and assessing adherence to proper treatment of residents with congestive heart failure and diabetes mellitus Thorough medication reconciliation and healthcare provider review of all pertinent medications are essential to reducing rehospitalizations as it relates to medication errors:

Context

This DNP project was aimed at finding the best evidence-based practice available to implement into policy and procedures to improve quality measures and reduce rehospitalizations among residents 65 years and older, in a long-term care and swing bed facility in rural Richton, Mississippi, who have a diagnosis of congestive heart failure or diabetes mellitus. A retrospective analysis was completed to identify the most common causes of rehospitalizations. The common most causes of rehospitalizations within the facility included congestive heart failure exacerbation and complications related to diabetes mellitus. By examining the facilities quality measure and case mix roster reports, high-risk residents were identified. Chart reviews were conducted, physician orders and

care plans reviewed, and hospital records assessed to determine possible causes for individual residents' need for rehospitalizations due to complications of diabetes mellitus or congestive heart failure.

Interventions

Interventions included an admission checklist with specific requirements for those being admitted to the facility with a diagnosis of diabetes mellitus or congestive heart failure. New policies and procedures for medication reconciliation during the admission process should be considered. Residents with a diagnosis of diabetes mellitus had a diabetes checklist including the American Diabetic Association (ADA) diet, insulin requirement, oral diabetic medications, blood glucose monitoring, routine hemoglobin A1C, and therapy services. The checklist for those with congestive heart failure included diet, vital signs, the use of diuretics, ace inhibitors, beta-blockers, anticoagulants, fluid restrictions, routine brain natriuretic peptide (BNP) levels, routine electrolyte levels, edema checks, need for oxygen, daily or weekly weights and the need for therapy services. All items were reviewed and clarified with the medical provider, a physician order will be written for the items on the checklist that are pertinent for the management of the resident's diabetes and congestive heart failure. Two licensed nurses completed medication reconciliation with a check and balance system. Nursing educated and trained for use of a new checklist utilized with admits to the facility for residents with a diagnosis of diabetes mellitus and congestive heart failure. A diagnosis checklist was utilized with questions for nursing to ask when taking reports on residents that were to be admitted into the facility, to ensure that pertinent information was obtained. Logs were kept for residents with CHF to determine if they were exemplifying signs and symptoms of

congestive heart failure, and a list that was checked daily for blood pressure, heart rate, shortness of breath, and peripheral edema, including daily or weekly weights as appropriate per medical provider. Referrals were to be made to therapy services on a case-to-case basis to increase functional endurance and reduce fatigue and shortness of breath on exertion. Residents with a diagnosis of diabetes mellitus with no order of accuchecks initially were to have accuchecks once daily and as needed to monitor to determine if diabetes is controlled with medication. Residents with a diagnosis of diabetes were automatically prescribed a diabetic diet as well as routine hemoglobin A1C labs. Residents were assessed and monitored for signs and symptoms of complications of diabetes mellitus such as hyperglycemia and hypoglycemia. CHF and diabetes mellitus checklists are provided in Appendices B and C.

Study of the Intervention

A log was kept to determine how many medication errors were intercepted during the admission process. Blood glucose was obtained daily and monitored and reviewed weekly per interdisciplinary team and medical provider. Residents with a diagnosis of congestive heart failure and diabetes mellitus were to have a reduction in hospitalizations because of the management of these chronic health conditions. Laboratory values are assessed to determine if the resident's diabetes mellitus is being managed well or if medication adjustments are needed. The reduction of complications of CHF was measured by a decline in shortness of breath, peripheral edema, blood pressure, and heart rate within the resident's normal parameters and noted improvements in exercise tolerance. Utilization competency was assessed by reviewing the completed checklist following admission.

Population

The population of interest included residents within the facility and new admits of all nationality age 65 and older with a diagnosis of diabetes mellitus or congestive heart failure. Staff that will participate in this DNP project includes the admission team that consists of the Medical Director (MD), nurse practitioner, director of nursing, administrator, dietary, social worker, medical records, assessment nurse, nurse manager, registered nurse (RN) supervisor, floor licensed practical nurse (LPN)s, and certified nursing assistants (CNA)s. Stakeholders included the patient, family, the facility, and staff. The patients benefited from this project due to the management of congestive heart failure and diabetes mellitus with reductions in rehospitalization. Families benefited due to knowing that their loved one's condition is being managed to decrease the risk of being hospitalized or dying. Hospitalizations can be costly to organizations, and the facility would profit by improving quality measures and reducing rehospitalizations. Organizations could reward staff with incentives for reducing rehospitalizations.

Sample and Setting

Residents in long-term care and swing bed facility in Richton, Mississippi, consisting of men and women aged 65 and older with a diagnosis of congestive heart failure or diabetes mellitus is the inclusion criteria. Exclusion criteria included residents under the age of 65, residents with a diagnosis of end-stage renal disease, and those receiving corticosteroids. Out of 43 residents, 5 are excluded because of age, and 21 are excluded due to not meeting diagnosis criteria. 22 met the qualifications to be included in this study with 12 diabetics and 10 with a diagnosis of congestive heart failure at risk for complications and possible hospitalization. New admits were included in the study if the

criteria were met and if the admission was during the allotted time frame. A population size of 30 with a confidence level of 95% and a 5% margin of error would make 28 the ideal sample size. Retrospection of data of established long-term residents from their admission date and 90 days following was included in the sample size.

Measures

Outcomes were measured by evaluating the number of rehospitalizations in ninety days among the chosen study groups. Weekly reconciliation meetings consisted of reviewing medications of new admits and readmits and the effectiveness of medications on chronic health conditions and completing audits, audits were completed to make sure medication reconciliation was completed by two licensed nurses as well as to make sure they were completed in a timely. The goal was to manage diabetes mellitus and congestive heart failure by reducing complications through medication reconciliation, monitoring, and observing the benefits and effects of medications used to treat chronic healthcare conditions to evaluate the effectiveness of medications and adjust as needed to reduce rehospitalizations. Management of diabetes mellitus outcomes was measured by fasting blood glucose, hemoglobin A1C, monitoring daily glucose readings, and antidiabetic medication adherence with the use of laboratory results, electronic medication administration record, glucometer, and glucose monitoring log sheet. Congestive heart failure management was measured by monitoring the resident's shortness of breath, fatigue, weight, and peripheral edema with the use of routine laboratory results, exercise tolerance, and weekly nurse assessment. Outcomes were evaluated with the use of Minimum Data Set (MDS) quality measure reports for rehospitalizations and resident diagnosis. These instruments were used to evaluate the

effectiveness of interventions of medication reconciliation and management and treatment of diabetes mellitus and congestive heart failure as well as new evaluation tools for evaluation of medication reconciliation and follow-up tools and meetings evaluating the effectiveness and addressing errors within the admission process of medication reconciliation.

Analysis

Rehospitalizations from this project time frame were compared to rehospitalization rates from previous quarters. The rehospitalization rates were identified in the pre-intervention phase. The diagnosis-specific checklist was utilized to ensure proper medications and interventions such as labs ordered, vital signs obtained routinely, medication reconciliation completed, etc., are in place to ensure continuity of care. The quantitative analysis could be obtained to determine the number of rehospitalizations that could have occurred during 90 days to identify whether there was a reduction in hospitalizations in residents with the diagnosis of CHF or diabetes mellitus with the interventions in place suggested by the diagnosis-specific checklist. This quantitative study could be used to evaluate the regression analysis model to evaluate the outcome variable (number of readmissions) with the use of the independent variable (CHF diagnosis, diabetes mellitus diagnosis, and medications for each), and the dependent variable (readmissions) for future projects. The variables may change within the 90 days based on new admits, residents with a new diagnosis of CHF or diabetes mellitus, and the number of rehospitalizations in data will be evaluated by gathering data from electronic health records, minimum data sheet reports, and quality measure reports in which data reliability accuracy can be limited by individuals that document into the electronic health

records. This analysis could prove to be useful in improving the management of the disease for residents with this diagnosis as evidenced by the reduction of rehospitalizations.

Ethical Considerations

The approval for implementation of the DNP project in this facility was received from the facility's regional administrator. Approval from The University of Southern Mississippi's Institutional Review Board (IRB) was sought and approved prior to the implementation of the project (IRB Protocol #22-710). Refer to Appendix A for the IRB approval letter. To ensure all proper ethical considerations were in place, all aspects of the project, including all patient and hospital data that were acquired were discussed with the IRB and facility administrator.

The data collected was kept confidential. The subjects were protected by the use of the Health Insurance Portability and Accountability Act of 1996 (HIPAA) which protects the privacy of patients' health information. The project coordinators were the only personnel granted access to the deidentified patient information to protect their identity.

Project Timeline

The project was initially to take place over 90 days, however, due to time constraints, it was completed over 14 days. During this time residents who were recently admitted or readmitted with the diagnosis of CHF or diabetes mellitus were to be monitored closely with nursing staff implementing interventions such as thorough medication reconciliation and the use of the diagnosis-specific checklist to ensure proper treatments and assessments are in place. The goal during this period was to prevent

residents from being readmitted to the hospital related to complications of CHF or diabetes mellitus. After the 14 days, the rehospitalization rate was not reassessed due to limited data, however, could be reviewed in a future project to determine if there had been a decrease in that quality measures. Upon determining the effectiveness of the diagnosis-specific checklist of interventions, it would be beneficial for the facility to adopt the tool to ensure a safe and quality-oriented transition of care for their residents.

Questions

Upon completion of this DNP project, the effectiveness of completing a thorough medication reconciliation at admission and utilizing a diagnosis-specific checklist of interventions would help residents remain in the facility with proper management of disease without requiring rehospitalization. Would a CHF and diabetes mellitus checklist help bring awareness to healthcare personnel on the protocol for these diagnoses? Will assigning licensed nurses to perform a thorough medication reconciliation prevent a potential discrepancy with the resident's health care regimen. Would implementing all the above-mentioned interventions prevent rehospitalizations in turn reducing the rehospitalization rate for the facility in 90 days? These questions are sought to be answered through the development and implementation of this project.

Summary

In summary, the intervention that was utilized was a diagnosis-specific checklist used for patients diagnosed with CHF or diabetes mellitus who were admitted or readmitted to the facility from a recent hospital stay. The checklists were used to assist staff in ensuring the resident has a safe and effective transition of care from the hospital and reducing the recurrence of being hospitalized. The population of interest for this

project included men and women aged 65 years or older residing in the long-term care setting with the diagnosis of CHF or diabetes mellitus who has been recently admitted or readmitted to the facility. The project took place in 60-bed long-term care and skilled nursing facility that offer long-term and rehabilitation services. The goal of this project was to determine if implementing a diagnosis-specific checklist and conducting a thorough medication reconciliation would reduce the frequency of hospitalizations in patients with CHF and diabetes mellitus.

CHAPTER III - RESULTS

Chapter III analyzes the results after the implementation of the intervention. At the conclusion of the intervention implementation time frame, the principal investigator (PI) and co-principal investigator (Co-PI) met with the nursing staff and provider to discuss the results. The data was collected and analyzed noting accurate completion and 100% utilization rate of all admits with a qualifying diagnosis. The data revealed how many residents admitted or readmitted during the specified timeframe that met the qualifying criteria.

The PI, Co-PI, provider, and facility administrator also met to discuss the results of the intervention. The provider was favorable of the continued use of the intervention to improve the transition of care for residents in the facility. Currently, there have been no changes to the facility's policy for implementation, as the facility is part of a large network, and the topic would need to be discussed further with the cooperate committee. It was determined that should the cooperate committee approve the implementation of the intervention into the policy it would be used in all facilities.

Observed Associations

The project aim was to implement two diagnosis-specific checklists to assist with the transition of care to the long-term and skilled nursing care setting to reduce rehospitalizations. Diabetes and congestive heart failure checklists were created by the PI and Co-PI based on the best practice guidelines for those diagnoses. The PI and Co-PI met with the facility's staff to educate them on the proper use of the checklist. Among the staff that was educated, there were two providers, five nurses, and one facility administrator. The implementation of the checklist started on the same day that the staff

was educated. The trial lasted 14 days and during this period the facility had three admissions and zero rehospitalizations. There was a 100% utilization rate of the checklist during the 14 days. There was one noted medication discrepancy found within discharge orders which could have potentially led to rehospitalization if not captured with the utilization of the diagnosis-specific checklist. The project facilitated improvement with the resident's transition of care, resulting in a thorough reconciliation of medications and treatment plans. The facility's provider and nursing staff were favorable to the use of the checklist as being intuitive to the resident's transition of care.

Summary

The results of the project showed that there is a need for a more thorough reconciliation of the resident's plan of care upon admission to the facility. The PI and Co-PI evaluated the staff's competency and understanding of the intervention tool through return demonstration as well as reviewing the completed checklist. The intervention was a great asset to the admission process to combat possible causes of rehospitalizations. The admission process will be evaluated further for the possibility of implementing new guidelines and the checklist to assist in smooth transition care to the facility for residents with congestive heart failure and diabetes mellitus.

CHAPTER IV - DISCUSSIONS

Early readmissions of frail elderly patients after an episode of hospital care are common and constitute a crucial patient safety outcome and risk predictor. Early rehospitalization rates have been reported to be associated with age, comorbidity, length of hospital stay, polypharmacy, worsening of functional status, severe morbidities at discharge, preadmission activities of daily living (ADL), malignant disease, dementia, high educational level, frailty, and discharge from hospital based on patient's own request (Ekerstad et al., 2017).” It was the aim of the project to implement a tool that would combat the frequency of readmission to the hospital for this vulnerable population. The facility's provider supports the use of the tool as being beneficial to the admission process and essential to facilitate positive healthcare outcomes.

Interpretation

The project results showed that there is a need for a more concise and thorough reconciliation of the patient's plan of care during the transition of care to the facility. The project intervention was an additional tool utilized between the nursing staff and provider to ensure that the resident was receiving the best evidence-based practice for the specified diagnosis during the continuity of care. The checklists added another layer of checks and balances to ensure that all pertinent interventions were in place and if not; it alerted the provider of interventions that could be implemented.

Limitations and Barriers

Several limitations and barriers existed during the completion of this project. The initial barrier included the IRB approval process which took approximately two months to complete. Another barrier included the length of the project time frame which was 14

days. A longer project time frame would allow time for the data to be assessed to see if there was a reduction in the facility's rehospitalization rate on the Certification and Survey Provider Enhanced Report (CASPER) provided by the Centers for Medicare and Medicaid Services (CMS) monthly. A limitation was the small sample size; there were only 3 admissions during the 14-day process. A larger size sample would have shown a more detailed result of the intervention tool being essential to the admission process.

Implications

Providing safe effective quality care to residents is important to ensure positive healthcare outcomes. The project intervention results were deemed vital to the admission process. The facility provider was favorable to the implementation of the checklists into the admission process. The continued use of the checklists would help to facilitate the communication between the admission nurse and provider to ensure the best practices are being implemented for the resident during the transition of care, resulting in the prevention of rehospitalization related to a preventable cause.

Suggestive Next Steps

The next phase of this project could be to evaluate the effectiveness of the implementation of the diabetes mellitus and congestive heart failure checklist as a tool to reduce the facility's rehospitalization rate in a future project. This phase could be done by monitoring the CASPER report for the facility for at least 30 days while ensuring that the checklists are being utilized during this time. Also, the consideration for the checklists to be implemented into the cooperate policy could be pursued by meeting with the cooperate committee and reviewing the data results with the stakeholders. Lastly, there is a possibility to develop other diagnosis-specific checklists based on the best practice

guidelines to combat other comorbidities that this population may endure that may cause frequent hospitalizations.

Conclusion

In conclusion, the project results indicated that the nursing staff and provider were competent in the proper utilization of the diabetes mellitus and congestive heart failure checklists. It also concluded that the intervention tool was essential in ensuring that the resident had a smooth transition of care by creating a more thorough and concise reconciliation of the resident's plan of care during the transition process. Therefore, the intervention is vital in assisting the healthcare team in providing safe, effective high-quality care while also combating premature hospital admission.

APPENDIX A - IRB Approval Letter

Office of
Research Integrity



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NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident submission on InfoEd IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER: 22-710
PROJECT TITLE: Quality improvement project to assist with implementation of Congestive Heart Failure and Diabetes Mellitus Checklist to reduce rehospitalizations in long-term care facility.
SCHOOL/PROGRAM: Leadership & Advanced Nursing
RESEARCHERS: PI: Tia Jones
Investigators: Jones, Tia-Parke, Averie-Jordan, Marti-Coleman, Carolyn-
IRB COMMITTEE ACTION: Approved
CATEGORY: Expedited Category
PERIOD OF APPROVAL: 02-Sep-2022 to 01-Sep-2023

A handwritten signature in cursive script that reads "Donald Sacco".

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

APPENDIX B - Congestive Heart Failure Checklist



CONGESTIVE HEART FAILURE CHECKLIST

Nurse to check which orders are currently prescribed upon admit and include order details, then provide to the healthcare provider via in person, phone, fax or email for the healthcare provider to review and choose which orders they would like to add, keep, or discontinue.

NURSE	ORDER DETAILS
<input type="checkbox"/> Vital signs q shift	_____
<input type="checkbox"/> Diuretic Therapy	_____
<input type="checkbox"/> Ace Inhibitors	_____
<input type="checkbox"/> Angiotensin II Receptor Blockers	_____
<input type="checkbox"/> Beta Blockers	_____
<input type="checkbox"/> Oxygen Therapy	_____
<input type="checkbox"/> Nebulizer Treatment	_____
<input type="checkbox"/> Heart Healthy Diet	_____
<input type="checkbox"/> Monitor for Shortness of Breath	_____
<input type="checkbox"/> Edema Checks	_____
<input type="checkbox"/> Daily Weights	_____
<input type="checkbox"/> Fluid Restriction	_____
<input type="checkbox"/> Physical Therapy, Occupational Therapy, Restorative Nursing	_____
<input type="checkbox"/> Smoking Cessation education	_____

PHYSICIAN OR NURSE PRACTITIONER	ORDER DETAILS
<input type="checkbox"/> Vital signs q shift	_____
<input type="checkbox"/> Diuretic Therapy	_____
<input type="checkbox"/> Ace Inhibitors	_____
<input type="checkbox"/> Angiotensin II Receptor Blockers	_____
<input type="checkbox"/> Beta Blockers	_____
<input type="checkbox"/> Oxygen Therapy	_____
<input type="checkbox"/> Nebulizer Treatment	_____
<input type="checkbox"/> Heart Healthy Diet	_____
<input type="checkbox"/> Monitor for Shortness of Breath	_____
<input type="checkbox"/> Edema Checks	_____
<input type="checkbox"/> Daily Weights	_____
<input type="checkbox"/> Fluid Restriction	_____
<input type="checkbox"/> Physical Therapy, Occupational Therapy, Restorative Nursing	_____
<input type="checkbox"/> Smoking Cessation education	_____

APPENDIX C - Diabetes Mellitus Checklist



DIABETES MELLITUS CHECKLIST

Nurse to check which orders are currently prescribed upon admit and include order details, then provide to the healthcare provider via in person, phone, fax or email for the healthcare provider to review and choose which orders they would like to add, keep, or discontinue.

NURSE	ORDER DETAILS
<input type="checkbox"/>	Hemoglobin A1c Ordered _____
<input type="checkbox"/>	CBC for Blood Glucose Lab _____
<input type="checkbox"/>	Oral Anti-Diabetic Medications _____
<input type="checkbox"/>	Blood Glucose Monitoring (Accuchecks) _____
<input type="checkbox"/>	Insulin Ordered _____
<input type="checkbox"/>	Diabetic Diet _____
<input type="checkbox"/>	Insulin Ordered _____
<input type="checkbox"/>	Physical Therapy, Occupational Therapy, Restorative _____
<input type="checkbox"/>	Skin Care _____
<input type="checkbox"/>	Nail Care _____
<input type="checkbox"/>	Smoking Cessation Education _____

PHYSICIAN OR NURSE PRACTITIONER	ORDER DETAILS
<input type="checkbox"/>	Hemoglobin A1c Ordered _____
<input type="checkbox"/>	CBC for Blood Glucose Lab _____
<input type="checkbox"/>	Oral Anti-Diabetic Medication _____
<input type="checkbox"/>	Blood Glucose Monitoring (Accuchecks) _____
<input type="checkbox"/>	Insulin Ordered _____
<input type="checkbox"/>	Diabetic Diet _____
<input type="checkbox"/>	Insulin Ordered _____
<input type="checkbox"/>	Physical Therapy, Occupational Therapy, Restorative _____
<input type="checkbox"/>	Skin Care _____
<input type="checkbox"/>	Nail Care _____
<input type="checkbox"/>	Smoking Cessation Education _____

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