2015

H2H Strategies Associated with Reduced Heart Failure Readmission Rates in Georgia Hospitals

Carisa Sellers
Walden University

Walden University

College of Health Sciences

This is to certify that the doctoral dissertation by

Carisa Sellers

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Ronald Bucci, Committee Chairperson, Health Services Faculty
Dr. Stephen Bowman, Committee Member, Health Services Faculty
Dr. David Segal, University Reviewer, Health Services Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2015

Abstract

H2H Strategies Associated with Reduced Heart Failure Readmission Rates in Georgia Hospitals

by

Carisa Antoinette Sellers

MSW, Clark Atlanta University, 2000

BS, Xavier University of Louisiana, 1998

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Health Care Administration

Walden University

December 2015

Abstract

Reducing heart failure risk standardized readmissions rates (RSRRs) continues to be a challenge in the United States. Among Medicare beneficiaries, the U.S. national rate for heart failure RSRRs is 23, and Georgia only has 3 hospitals with heart failure RSRRs that are better than the national rate. The hospital component of the chronic care model (CCM) was the theoretical framework used in this study because the model was designed to assist heath care organizations in improving chronic care outcomes. Researchers have indicated that the Hospital to Home Initiative (H2H), a national quality improvement campaign launched in 2009, is effective in reducing RSSRs. However, very little research has been conducted to determine which specific H2H strategies and categories of strategies are associated with reducing heart failure RSRRs in Georgia. The purpose of this nonexperimental, cross-sectional quantitative research study was to address this gap. The H2H Survey used in this study is a valid instrument that was previously used in a national study. Surveys were sent to 35 hospitals in Georgia participating in the H2H. A series of one-way ANOVAs were used to test the hypotheses. Key findings were as follows: (a) heart failure RSRRs were reduced when hospitals implemented the H2H, (b) the number of implemented H2H strategies was associated with a reduction in heart failure RSRRs, and (c) categories of strategies were associated with a reduction in heart failure RSRRs. These findings can be used for promoting positive social change because hospital administrators can implement changes using effective strategies to reduce both heart failure RSRRs and government penalties associated with these readmissions.

Dedication

Most importantly I would like to thank God for blessing me with wisdom, patience, health, and energy to complete my dissertation. Thank you for providing me with the strength to keep pushing forward despite many obstacles.

I would like to thank my wonderful parents, Georgia and Preston, for constantly supporting me throughout all of my personal and academic endeavors.

I would like to thank my dear friend, Falecia, for supporting me during the most difficult times. Thank you to all of my family and friends for your encouragement.

Acknowledgments

I would like to sincerely thank Dr. Ronald Bucci, Dr. David Segal, Dr. Stephen Bowman, and Dr. Tammy Quest for their support and guidance throughout my dissertation journey. I certainly appreciate their time, energy, and commitment.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Heart disease is the leading cause of death in the United States and in Georgia (Georgia Department of Public Health, 2012). Nearly 935,000 Americans suffer from heart attacks annually, and about 600,000 of them actually die (Centers for Disease Control and Prevention [CDC], 2013). Individuals diagnosed with heart disease usually have comorbidities such pulmonary disease, dementia, renal failure, hypertension, and diabetes (Hines, Yu, & Randall, 2010). The costs associated with treating these illnesses are high. The United States government is spending about $108.9 billion yearly just to treat coronary heart disease regardless of other comorbidities (CDC, 2013). The state of Georgia witnessed a $2.1 billion increase in hospital charges for patients admitted for cardiovascular disease between 2003 and 2010 (Georgia Department of Public Health, 2012). The United States government spends over $39 billion annually to treat people diagnosed with heart failure, this include outpatient visits, hospitalizations, and readmissions (Bui, Horwich, & Fonarow, 2010).

Many hospitals across the United States have implemented initiatives to reduce readmissions (Ross et al., 2013). According to the Centers for Medicare and Medicaid Services (CMS, 2013a), the following initiatives are presently being used to reduce readmissions:

- Partnership for Patients
- Integrating Care for Populations and Communities Aim (ICPCA)
- The Community-Based Transitions Program (CCTP)
- The National Priorities Partnership (NPP)

- The American College of Cardiology Hospital to Home Initiative (H2H)
- State Action on Avoidable Hospitalizations (STARR) initiative
- The Common Wealth Fund
- Interventions to Reduce Acute Care Transitions (INTERACT)
- The Society of Hospital Medicine
- Project RED (Re-Engineered Discharge)

Research does indeed suggest that various strategies to reduce heart failure readmissions have been successful. This study focused on the H2H and whether it is impacting heart failure RSRRs in Georgia. In addition, this study focused on the associations between heart failure RSRRs, the number of strategies to reduce readmissions, and the categories of strategies to reduce readmissions. The H2H consists of 30 hospital strategies that are associated with achieving reducing heart failure RSRRs. H2H was launched in 2009 as a result of a study by Jencks, Williams, and Coleman (2009) study that concluded that heart failure was the leading cause of readmissions. The American College of Cardiology and the Institute for Healthcare Improvement are cosponsors of the H2H (American College of Cardiology, 2011).

Bradley et al. (2013) conducted a study to evaluate the 30-day RSRRs 599 hospitals nationwide that were using heart failure quality initiative strategies established through H2H, STAAR, and Better Outcomes for Older Adults and found that six strategies were associated with lowering these rates. These six hospital strategies were: (a) establishing partnerships with local physicians, (b) establishing partnerships with local hospitals, (c) having nurses manage medication reconciliation, (d) having staff make

follow-up appointments prior to discharge, (e) having all discharge summaries sent to the patient's primary care physician post discharge, and (f) having staff follow up with the patient about lab results post discharge.

Ryan, Kang, Dolacky, Ingrassia, and Ganeshan (2013) led a study as part of a hospital quality initiative at the University of Connecticut Health Center and found that 30-day heart failure readmissions decreased when patients had 7-day follow-up visits. study by Scott (2010) demonstrated that multiple intervention strategies used both before and after discharge were more effective in reducing readmissions than single strategies alone. A study by Epstein, Ashish, and Orav (2011) demonstrated a significant association between regional rates of hospitalizations and readmission rates. Ballard et al. (2010) conducted an observational study at the Baylor Health Care System and found a significant reduction in 30-day heart failure mortalities and readmissions when hospitals followed a standardized heart failure order set. The heart failure order set consisted of multiple readmission strategies, such as promoting medication reconciliation, developing an inpatient continuum of care, and facilitating discussions about end-of-life-care, palliative care, and advance directives (Ballard et al., 2010).

It is evident that there is a wide range of literature supporting various strategies that have been successful in reducing heart failure RSRRs. However, there is a lack of literature specifically about the effectiveness of H2H. Although the H2H was launched in 2009, there is still a lack of literature that is publicly available to determine how it is impacting heart failure RSRRs. The Bradley et al. (2013) study is just one study that suggests various strategies that have been associated with reducing heart failure

readmissions among hospitals that are participating in H2H. Moreover, the American College of Cardiology was contacted, and not able to publicly share research at this time. According to White (2011), "unlike its predecessors H2H is starting with an evidence base that is less clear about proven best practices shown to reduce hospital readmission rates" (p. 84).

CMS recognizes H2H as a national strategy that is used to reduce readmissions (CMS, 2013a). The American Heart Association recently conducted a national survey of hospital strategies to reduce heart failure readmissions and found that "most current strategies are not associated with lower readmission rates" (Kociol et al., 2012, p. 2). Heart failure readmissions in particular have raised great concerns because they are very costly. The Hospital Readmission Reduction Program was added to section 3025 of the Affordable Care Act and as part of a mandate that CMS reduce payments to hospitals paid under the inpatient prospective payment system (IPPS) that have excessive readmissions for patients diagnosed with heart failure, acute myocardial infarction, and pneumonia (CMS, 2013a). This program became effective on October 1, 2012 (CMS, 2013a). CMS expects hospitals with excess readmissions to achieve 1% reduction of their base operating payments during fiscal year 2013 and up to 2% in fiscal year 2014 (CMS, 2013a). The Hospital Readmission Reduction Program was created in an effort to reduce excessive readmissions of acute myocardial infarction, heart failure, and pneumonia hospitalizations by reducing hospital payment for these diagnoses (CMS, 2013a). It also anticipated that hospitals may lose one-quarter of their payments at the beginning of fiscal year 2015 if they do not participate in the Hospital Inpatient Quality Report program that was initiated

by CMS to reduce readmissions (CMS, 2013a). CMS views hospital wide readmission as a quality indicator (CMS, 2011). The Hospital Readmission Reduction Program and the Hospital Inpatient Quality Report Program both measure 30-day risk-standardized readmission rates (CMS, 2013a).

As previously mentioned, the state of Georgia has been spending billions on cardiovascular hospitalizations. Cardiovascular disease is the leading cause of death in Georgia (Georgia Department of Public Health, 2012). Among Medicare beneficiaries, the U.S. national rate for 30-day heart failure mortality is 11.7 which indicates that 11.7 people out of 100 die within 30 days of being diagnosed with heart failure (CMS, 2013c). According to CMS (2013c), in Georgia, there is only one hospital with a 30-day heart failure mortality rate that is better than the national rate, 126 hospitals with 30-day heart failure mortality rates that are the same as the national rate, and two hospitals with 30-day heart failure mortality rates that are worse than the national rate. Among Medicare beneficiaries, the U.S. national rate for heart failure readmissions is 23, which means that there are 23 people out of 100 who are readmitted within 30 days of discharge (CMS, 2013c). Georgia only has three hospitals with heart failure readmissions rates that are better than the U.S. national rate, 129 hospitals with heart failure readmissions rates that are the same as the national rate, and one hospital with a heart failure readmissions rate that is worse than the national rate (CMS, 2013c). Based on these statistics, Georgia is meeting the national rate for 30-day heart failure mortalities and heart failure readmissions as it relates to Medicare beneficiaries. There are only a few hospitals that report rates better than the national rates in both instances.

Definitive reasons for heart failure readmissions and their associations with the H2H and heart failure RSRRs in Georgia are unknown. H2H includes 30 hospital strategies that are mentioned in the survey. The H2H Survey used in this study consisted of several sections: (a) organizational support and quality improvement efforts for reducing readmission rates, (b) participation in readmission collaboratives or campaigns, (c) systems to reduce redmissions, and (d) measures and tracking (Bradley et al, 2013). The following readmission strategies are listed in the systems to reduce readmissions section: (a) in-hospital care, (b) medication reconciliation, (c) patient and family information, (d) transition process, and (e) post acute care and support. The H2H Survey is available in Appendix B.

This study adds to the literature by suggesting that heart failure RSRRs were reduced when hospitals implemented H2H. In addition, it expands the literature because associations are made between the reduction in heart failure RSRRs, the number of strategies implemented, and the categories of strategies. The State of Georgia was chosen because heart failure readmissions present a serious concern in Georgia. This quantitative cross-sectional study addressed this gap in knowledge by focusing on these associations. Moreover, the H2H is cosponsored by the American College of Cardiology and the Institute for Healthcare Improvement (American College of Cardiology, 2011). Web-based surveys were sent to all 35 hospitals in Georgia that were participating in the H2H. The H2H Survey used in this study was previously used in the Bradley et al. (2013) study. The survey is both reliable and valid (Bradley et al., 2013). A more detailed explanation of the survey instrument is presented in Chapter 3.

The findings in this study have the potential to produce positive social change implications because healthcare providers, healthcare administrators, and policy makers may gain a better understanding of the effectiveness of the H2H. These professionals may be able to use the results of this study to reduce heart failure RSRRs throughout the United States and to decrease the financial burdens caused by these readmissions. Moreover, the Patient Protection and Affordable Care Act includes financial incentives for hospitals that successfully participate in the Hospital Inpatient Quality Reporting program by reducing readmissions.

This chapter includes the following sections: (a) background, (b) statement of the problem, (c) purpose of the study, (d) research questions and hypotheses, (e) theoretical framework, (f) nature of the study, (g) definition of terms, (h) assumptions, (i) scope and delimitations, (j) limitations, (k) significance of the study, and (l) summary.

Background

A brief overview of the literature both supported and suggested that there was a gap in knowledge about the top hospital readmission strategies. Many peer-reviewed articles related to the challenges facing the strategies being implemented to reduce the readmission rates of heart failure patients were used. Coffey et al. (2012) a study focusing on the types of congestive heart failure patients who are most likely to be readmitted. The results indicated that Medicaid patients who left the hospital against medical advice and had a history of drug use, renal failure, or psychoses were likely to be readmitted (Coffey et al., 2012). Dunlay et al. (2009) conducted a similar study that determined that the multiple hospitalizations after a diagnosis of heart failure are due to

the comorbid conditions associated with the diagnosis. Both studies suggest that medical comorbidities such as renal failure may contribute to heart failure readmissions.

Comorbidities

There is a substantial amount of research suggesting that comorbidites may impact heart failure readmissions. A study by Kadam, Uttley, Jones, and Iqbal (2013) found that six specific chronic multimorbid pairs were linked to higher health care costs and transitions. These chronic multimorbid pairs included the following diagnoses: hypertension, diabetes mellitus, coronary heart disease, congestive heart failure, and chronic pulmonary disease (Kadam et al. 2013). A study by Blecker et al. (2013) found that primary heart failure hospitalizations were highly associated with noncardiac conditions such as pulmonary disease, renal failure, and infections. In the review of literature in Chapter 2, I describe the relationship between various comorbidities and heart failure readmissions. The comorbidities discussed in Chapter 2 include diabetes, chronic obstructive pulmonary disease, dementia, renal failure, and hypertension.

Emergency Departments

There has recently been more attention focused on the role that emergency departments (EDs) play in heart failure readmissions. Pang, Jesse, Collins, and Maisel (2012) provided information implying that EDs can do a better job of reducing admissions of acute heart failure patients. Nearly 80% of patients with acute heart failure are admitted through EDs (Pang et al., 2012). In contrast to these previously mentioned studies, Hansen, Young, Hinami, Leung, and Williams (2012) conducted a study to reduce hospitalizations that resulted in no single intervention being successful in reducing

30-day readmissions. As previously mentioned, some research studies have demonstrated that the use of multiple intervention strategies has been more effective than single intervention strategies. Hines, Yu, and Randall (2012) suggested that reduction in 30-day readmissions for heart failure will eventually lead to improved care and savings that will affect policies and the health care delivery system.

Medicare Beneficiaries

There are some data suggesting that Medicare patients have a higher prevalence of heart failure readmission than other patients. Joynt, Ashish, and Jha (2011) conducted a study analyzing readmissions of heart failure patients with Medicare who were admitted into U.S. hospitals in 2006 and 2007. Their results indicated that patients discharged from public hospitals had a higher chance of being readmitted when compared to patients discharged from nonprofit hospitals (Joynt, Ashish, & Jha, 2011). Ross et al. (2009) conducted a similar study to detect recent trends in readmissions rates of heart failure patients that were Medicare beneficiaries from 2004 through 2006. The results of this study indicated no significant changes in heart failure beneficiaries during this period (Ross et al., 2009). A more detailed discussion about the relationship between Medicare beneficiaries and heart failure readmission rates is presented in the review of literature.

Statement of the Problem

There is a substantial amount of data that clearly indicates the problems the U.S. health care delivery system is having with the readmissions of heart failure patients. The Bradley et al. (2013) study found that 1 out of 4 patients with heart failure were readmitted within 30 days. Heart failure readmissions represent a very costly public health problem

(Dunlay et al., 2009). These readmissions significantly contribute to the financial burden that is placed on the health care delivery system. In 2010, it was estimated that $39.2 billion were spent on medical care related to heart failure readmissions (Bui, Horwich, & Fonarow, 2011). While a great deal of attention has focused on helping health care organizations with reducing readmission rates, the problem persists. Joynt and Ashish (2012) suggested that policy makers are interested in reducing readmissions because this will help with improving care and reducing costs. "Despite the national focus on readmissions rates, contemporary data on these hospital practices aimed at reducing readmissions are lacking" (Bradley et al., 2013, p. 608). Unfortunately, there are limited data about the effectiveness of hospital initiatives that are positively affecting readmission rates. In order to address these limitations, it is necessary to examine different hospital practices.

Purpose of the Study

The purpose of this study was to understand the effect the H2H has on heart failure RSRRs among the 35 participating hospitals in Georgia. The H2H includes all of the various readmission reduction hospital strategies from the H2H, STAAR, and Better Outcomes for Older Adults through Safe Transitions campaigns, which were used by researchers to develop the H2H Survey (Bradley et al., 2013). The state of Georgia was specifically chosen because Georgia witnessed a $2.1 billion increase in hospital charges for patients admitted for cardiovascular disease between 2003 and 2010 (Georgia Department of Public Health, 2012). There are very little data available that actually depict whether or not the H2H is reducing heart failure RSRRs in Georgia. According to

CMS (2013a), there are about 23 Medicare beneficiaries readmitted within 30 days of discharge, which this is the national average. Georgia only has three hospitals with readmission rates that are better than this national average, which means that most of the hospitals have more than 23 Medicare beneficiaries admitted within 30 days of discharge (CMS, 2013a). When at heart failure RSRRs in regard to costs, 30-day readmissions among Medicare beneficiaries, and categories of strategies associated with reducing heart failure RSRRs, Georgia is a good representation of why further research is needed in this area. In contrast to the national Bradley et al. (2013) study, this study was different because it focused on Georgia. The Bradley et al. (2013) study found that the following six hospital strategies were associated with reducing heart failure RSRRs nationally: (a) establishing partnerships with local physicians, (b) establishing partnerships with local hospitals, (c) having nurses manage medication reconciliation, (d) having staff make follow-up appointments prior to discharge, (e) having all discharge summaries sent to the patient's primary care physician post discharge, and (f) having staff follow up with the patient about lab results post discharge. This study investigated how all of the hospital strategies might play a role in impacting heart failure RSRRs in Georgia. The H2H Survey used in this study had specific questions to capture this information. The impact that the H2H has on heart failure RSRRs in Georgia was measured by the data provided from the participating hospitals.

Research Questions and Hypotheses

The questions this study aimed to answer were the following:

Research Question 1

Is there a reduction in heart failure risk-standardized readmission rates when hospitals implement the Hospital to Home Initiative?

H_1: There will be a reduction in heart failure risk-standardized readmission rates when hospitals implement the Hospital to Home Initiative.

H_0: There will not be a reduction in heart failure risk-standardized readmission rates when hospitals implement the Hospital to Home Initiative.

Research Question 2

Is the number of implemented Hospital to Home Initiative strategies associated with a reduction in heart failure RSRRs for H2H participating Georgia hospitals?

H_1: The number of implemented Hospital to Home Initiative strategies will be associated with a reduction in heart failure RSRRs for H2H participating Georgia hospitals.

H_0: The number of implemented Hospital to Home Initiative strategies will be not be associated with a reduction in heart failure RSRRs for H2H participating Georgia hospitals.

Research Question 3

Are the categories of strategies associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals?

H_1: The categories of strategies will be associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals.

H_0: The categories of strategies will be not associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals.

This study compared the associations between heart failure RSRRs, number of strategies, and categories of strategies using a series of one-way ANOVAs.

Theoretical Framework

The theoretical framework for this study was grounded upon Wagner's CCM, which was created in 1992 (Group Health Institute, 2012). The CCM was originally created to assist medical practices in improving patient outcomes in ambulatory care by implementing six systems (Coleman, Austin, Brach &Wagner, 2009). These six systems are (a) the community, (b) the hospital, (c) self-management, (d) support, (e) delivery system design, and (f) clinical information systems (Oprea, Braunack-Mayer, Rogers, & Stock, 2010). This study focused on the hospital component of the CCM because it has been used by health care organizations to deal with readmissions for chronic illnesses. The hospital component is applicable to this study because the strategies implemented by hospitals to reduce the readmission rates of heart failure patients have not changed over the years (Ross et al., 2013). Moreover, the hospital component of the CCM relates to the approach of this study because the effects of the H2H were addressed. Readmission of heart failure patients is costly and is placing an economic burden on the health care delivery system (Ross et al., 2013). Research has shown that discharge planning services and the comorbidities associated with the diagnosis of acute heart failure both contribute to the rise in readmission rates (Jack et al., 2009). Therefore, the CCM supports the problem, purpose, and background of this study.

Nature of the Study

A quantitative approach was necessary for this study because the survey design was helpful in understanding whether the H2H is reducing heart failure RSRRs in Georgia. There is plenty of research supporting various strategies that have been used to reduce heart readmissions; however, there is limited literature about the effectiveness of the H2H. A sample of 35 hospitals was sought by contacting the all of the hospitals that are participating in the H2H in Georgia. The data were collected upon the participants completing surveys administered through Survey Monkey. Survey Monkey is an online software program that is commonly used to help researchers with designing, collecting, and analyzing data (www.surveymonkey.com).

Definition of Terms

This section includes definitions of key terms that are unique to this study and have been generally used in the medical field. Any terms related to the research methodology are discussed in Chapter 3.

Accountable care organizations (ACO): These organizations are composed of doctors, hospitals, and various health care providers that voluntarily agree to coordinate care for Medicare beneficiaries. The goals of having coordinated care are to avoid duplicating the same medical services, prevent medical errors, and save Medicare resources (CMS, 2013b).

Capitation: A method of reimbursement that is based on the number of covered individuals versus the number of services rendered (Gapenski, 2008)

Cardiorenal syndrome: A term that is used to describe the relationship between heart failure and kidney failure (Wynne, Narveson, & Littman, 2011).

Comorbidities: Chronic or long-term medical conditions that often called *coexisting* or *co-occurring conditions* (CDC, 2013c).

Comorbidity: A term that is used to describe a person being diagnosed with more than one disease or condition simultaneously (CDC, 2013c).

Emergency department protocols: Strategies implemented by hospitals to deal with heart failure readmissions.

Hearth failure (HF): Heart failure occurs when the heart can no longer pump enough blood and oxygen to support other organs (CDC, 2012a).

Heart failure readmissions: Patients previously diagnosed with heart failure who have been readmitted with the same diagnosis.

Hospital Readmission Reduction Program (HHRP): This program was added to section 3025 of the Affordable Care Act, which mandated that CMS reduce payments to hospitals paid under the inpatient prospective payment system (IPPS) that have excessive readmissions for patients diagnosed with heart failure, acute myocardial infarction, and pneumonia. It became effective October 1, 2012 (MS, 2013a).

Hospital to Home Initiative (H2H): This is a national quality improvement campaign that has been sponsored by the American College of Cardiology and the Institute for Healthcare Improvement in an effort to help organizations with reducing their cardiovascular-related hospital readmissions (American College of Cardiology, 2011).

Risk-standardized readmission rates (RSRRs): These are 30-day all cause (unplanned admissions) risk standardized rates (CMS, 2011b).

Safety-net hospitals: Safety-net hospitals are hospitals that provide care for uninsured, underinsured, and low-income patients and Medicaid beneficiaries (Berenson & Shih, 2012).

Assumptions

Based on the participants receiving individual web-based surveys, it assumed that they responded honestly. It assumed that the participants answered all of the items on the survey to the best of their knowledge given the confirmed data from their respective health care organizations. Also, it assumed that the survey were instrument both valid and reliable because it was previously tested and used in the Bradley et al. (2013) study. The survey was pretested for its comprehensibility and comprehensiveness with five professional colleagues that held roles similar to those of the intended participants, and the items that were deemed ambiguous were not used (Bradley et al., 2013). It is necessary to mention these assumptions because they are directly related to this study.

Scope and Delimitations

The scope of this study included data collected from 35 hospitals in Georgia that are participating in the H2H. A convenience sample of 35 hospitals was chosen because the names of the hospitals were identified on the American College of Cardiology website. Because participation in the H2H is voluntary and free of charge, all participating hospitals in Georgia were encouraged to participate in the study. Web-based surveys were used this study because they were easily admissible to the primary contacts

at the participating hospitals once their email addresses were received. The trends observed from the survey results were used to make generalizations about the sample population.

Limitations

There were several limitations to this study that must be discussed. The major limitation of this study was the relatively small sample size. A convenience sample size of 35 hospitals in Georgia was chosen because participated in the H2H. For these reasons, the findings cannot be generalized to estimate how representative of the population this sample is based on this study alone. Because all of the participants were employees of the hospitals, response bias must be considered because they may not have answered the questions honestly in fear of reporting negative information about their hospital, even though confidentiality was explained. Most of the respondents were case managers in the hospitals, and their responses may not represent the knowledge and experiences of other staff in the hospitals. These case managers may have provided insight based on their personal experiences and knowledge without consulting with other staff.

Significance of the Study

The impact the H2H is having on heart failure RSRRs in Georgia is unknown because there is a lack of literature that is publicly available. The U.S. national rate for heart failure readmissions is 23, and Georgia only has three hospitals with rates that are better than this national rate (MS, 2013c). The Bradley et al. (2013) study found that heart failure readmissions are not only common but also costly and that the strategies

used by hospitals are limited. According to Bradley et al. (2013), there are six known hospital strategies that have been associated with reducing 30-day heart failure readmissions: (a) establishing partnerships with local physicians, (b) establishing partnerships with local hospitals, (c) having nurses manage medication reconciliation, (d) having staff make follow-up appointments prior to discharge, (e) having all discharge summaries sent to the patient's primary care physician post discharge, and (f) having staff follow up with the patient about lab results post discharge. This study is significant because it fills a gap in the literature by determining whether the H2H is reducing heart failure RSRRs in Georgia and identifies the associations between the number of strategies and the category of strategies. The results of this study provide an original contribution to the healthcare field because healthcare providers, healthcare administrators, and policy makers may gain a better understanding of the H2H. Furthermore, the finding of this study may assist health care professionals in reducing heart failure readmission rates, improving patient satisfaction, and decreasing the financial burden caused by heart failure readmissions.

This research supports part of the Affordable Care Act (ACA), in which Congress regulated CMS to penalize hospitals that do not comply with the new guidelines associated with 30-day readmission rates (Joynt & Ashish, 2012). This study focused on the readmission rate of heart failure patients because it is the most costly readmission diagnosis. The results of this study to positive social change because hospital administrators may be able to implement the most effective strategies associated with reducing heart failure RSSRs. This positive social change may increase patient

satisfaction because patients will not have to be continuously readmitted for the same medical problem. From a financial perspective, hospitals and CMS might notice a decrease in the amount of money that is being spent on unnecessary heart failure readmissions.

Summary

The readmission rates of heart failure patients continue to cause a significant financial burden for the health care delivery system in the United States. The United States government is spending nearly $34 billion annually for heart failure-related costs, which include readmissions. This financial burden has caused many health care organizations and policy makers to be very concerned about heart failure readmissions. The review of literature that various factors may contribute to heart failure RSRRs, such as medical comorbidities and discharge planning processes within health care organizations. “Hospitalizations in patients with HF represent a major public health problem; however, the cumulative burden of hospitalizations after HF diagnosis is unknown and no consistent risk factors have been identified” (Dunlay et al., 2009, p. 1695). Additionally, the review of literature indicates that some hospitals’ practices to reduce readmissions are lacking (Bradley et al., 2013). Based on these facts, there is a gap in the research literature. The purpose of this was study was to understand the impact that the H2H has on heart failure RSRRs among the 35 participating hospitals in Georgia. The review of literature in Chapter 2 reveals this gap in the literature, which may further support the purpose of this study. Hence, Chapter 2 has a very detailed review of literature that is intended to educate readers about the past and present research that has been done

to reveal the risk factors that may contribute to heart failure RSRRs in Georgia. Research highlighting the lack of consistent practices to reduce heart failure readmissions is discussed. Also, Chapter 2 includes pertinent discussions about the relevance of using the H2H and CCM for this study. The gaps in past research efforts are well documented in Chapter 2.

Chapter 2: Literature Review

Introduction

The content of this literature review features research articles related to the readmission rates of heart failure patients in the United States. It is composed of the following headings: (a) Literature Search Strategies, (b) History of Heart Failure Readmissions, (c) Reasons for Heart Failure Readmissions, (d) Centers for Medicare and Medicaid Services and the Patient Protection and Affordable Care Act, (d) Hospital to Home Initiative, (f) Chronic Care Model, (g) Conclusion, and (h) Summary. The perspective shared by research articles used for this literature review is relevant due to emphasis placed on the current and historical aspects of readmission problems. Moreover, these articles also address the present and future implications of heart failure readmissions to hospitals in the United States (Joynt & Ashish, 2012). The Patient Protection and Affordable Care Act (ACA) and MS have both suggested ways to deal with readmission issues. Because the readmission rates of heart failure patients remain a constant problem, many hospitals have adopted strategies to decrease readmissions (Bradley et al., 2012). This study particularly on the H2H Initiative that has been used by 35 hospitals in Georgia (American College of Cardiology, 2011). As previously mentioned, the purpose of this study was to understand to what extent the H2H affects the readmission rates of heart failure patients in Georgia. Moreover, the purpose of this quantitative cross-sectional study was to understand trends that may be associated among the hospitals that are participating in the H2H. The H2H was created as a national quality improvement initiative to assist hospitals with reducing cardiovascular readmissions and improving

patient transitions pre and post discharge (American College of Cardiology, 2011). The H2H is cosponsored by the American College of Cardiology and the Institute for Healthcare Improvement (American College of Cardiology, 2011). Further literature is used to thoroughly explain the origin and the purpose of the H2H.

In addition, the CCM was used as the conceptual framework for this study (American College of Cardiology, 2011). The review of literature presents research articles that define the model and justify its relevance for this research study.

Literature Search Strategies

The following databases were searched to complete the literature review: MEDLINE, CINAHL, PubMed, Google Scholar, ProQuest Central, PubMed, SAGE Premier, American Health Association (AHA), Agency for Healthcare Research and Quality, Georgia Department of Public Health, American College of Cardiology (ACC), National Institute of Health (NIH), American Diabetes Association, American Lung Association, Alzheimer's Association, Centers for Medicare and Medicaid Services, Georgia Department of Public Health, National Institute of Health, and Group Health Institute. The literature search focused on heart failure RSRR studies in the United States, including the comorbidities and hospital practices that have been associated with heart failure readmissions. The following key words were used: *heart failure risk-standardized readmission rates, heart failure readmissions in hospitals, heart failure in the United States, history heart failure readmissions, heart failure readmissions in hospitals, reasons for heart failure readmissions, heart failure and diabetes, heart failure and chronic pulmonary disease, heart failure and dementia, heart failure and renal failure, heart*

failure and hypertension, heart failure readmissions and discharge planning, heart failure readmissions and emergency departments, Hospital to Home Initiative, chronic care model, heart failure readmissions, and the Centers for Medicare and Medicaid Services and the Patient Protection and Affordable Care Act. All 56 research articles used in this literature review were dated from 2009 to 2013. These articles are listed in the references section.

History of Heart Failure Readmissions

Heart failure readmissions in hospitals pose serious concerns to the health care delivery system in the United States. There are nearly 6.5 million adults in the United States that are living with heart failure, and this number is expected to grow by 25% by 2030 (Butler & Kalogeropoulos, 2012). About 55,000 people die from this diagnosis yearly (CDC, 2012a). The prognosis for people living with heart failure is not good because most people die within 5 years of being diagnosed (CDC, 2012a). The severity of the illness contributes to the likelihood of death occurring. Medical costs associated with treating this illness are very high. "HF represents a considerable burden to the health-care system, responsible for costs of more than $39 billion annually in the USA alone, and high rates of hospitalizations, readmissions, and outpatient visits" (Bui, Horwich & Fonarow, 2011, p. 30).

Hospitalizations account for most of the revenue spent on heart failure treatment. This is why so much attention has been placed on readmissions of heart failure patients. In fact, congestive heart failure is the most prevalent readmission diagnosis among Medicare beneficiaries (Coffey et al., 2012). Health care providers are concerned with

why congestive heart failure patients are likely to be readmitted after being discharged. Coffey et al. (2012) conducted a study using Healthcare Cost and Utilization Project to answer this question by focusing on 14 participating states. The Healthcare Cost and Utilization Project features a host of databases that contain all payor sources in the United States and used to aid researchers in studying specific hospital issues, patient concerns, and inpatient hospitalization costs (Coffey et al., 2012). The Healthcare Cost and Utilization Project has proven to be a useful tool for researchers to use when studying heart failure readmissions. The research of Coffey et al. indicated that readmissions were higher for people under 65 years of age.

The number of people being discharged from hospitals in the United States with a diagnosis of heart failure continues to increase. The Ballard et al. (2010) study found that heart failure discharges increased from 877,000 in 1996 to 1.1 million in 2006 (Ballard et al., 2010). Heart failure readmissions will eventually be a lifetime financial burden to the United States if the problem is not resolved. As previously mentioned, the costs associated with treating people living with congestive heart failure can very high. Dunlay et al. (2009) conducted a research study to determine how much it costs to treat people from their initial diagnosis of heart failure until death. This was a longitudinal study that took place from 1987 to 2006 in which 1,054 heart failure patients from Minnesota were closely followed (Dunlay et al., 2009). The results indicated that it costs approximately $109, 451 over a lifetime to treat a person diagnosed with heart failure (Dunlay et al., 2009). Most of the costs were attributed to recurring hospitalizations. Nearly 72.6% of the participants died in less than (Dunlay et al., 2009). This is consistent with the year

prognosis established by the CDC as previously mentioned (CDC, 2012a). This study also found increased medical costs when patients were initially diagnosed and when patients only had a few months to live (Dunlay et al., 2009). The Ross et al. (2009) study indicated that heart failure readmissions among Medicare beneficiaries have not improved. Identifying the reasons for heart failure readmissions is important. Hospitals have a better chance of decreasing the readmissions of heart failure patients if they can determine why the problems persist.

Reasons for Heart Failure Readmissions

Understanding the reasons why patients are readmitted is pertinent to resolving the readmission problems in hospitals. It is quite common for patients that are diagnosed with heart failure to have multiple hospitalizations after their diagnosis; however, less than 50% of these hospitalizations are attributed to cardiovascular disease (Dunlay et al.2009). It is not uncommon for heart failure patients to be diagnosed with comorbidities such as diabetes, chronic pulmonary disease, dementia, renal failure, and hypertension (Hines, Yu, & Randall, 2010). These comorbidities affect the cost of care and hospital admissions (Kadam, Uttley, Jones, & Iqbal, 2013). They also contribute to readmission problems based on the severity of the disease progression (Hines et al., 2010). Researchers have suggested that adults over the age of 65 with heart failure have an increased chance of being admitted with comorbidities such as chronic obstructive pulmonary disease, diabetes, mellitus, renal failure and pneumonia (Liu, 2011,). The Blecker et al. (2012) study concluded that future strategies to reduce heart failure readmission should focus on cardiac disease as well as comorbid noncardiac conditions.

The review of literature also suggests that there are administrative reasons that may contribute to readmission problems, such as hospital discharge planning processes and emergency department admission protocols.

Diabetes

About 25.8 million people in the United States are living with diabetes (American Diabetes Association, 2013). The number of people that are newly diagnosed with diabetes is continuing to grow. In 2010, there were about 1.9 million people newly diagnosed with diabetes (American Diabetes Association, 2013).

There is a link between diabetes and cardiovascular disease that can eventually lead to heart failure (Aguilar, Bozkurt, Kumdha, & Deswal, 2009). These two diseases coexist because heart failure alone can cause a person to become insulin dependent, which increases the likelihood of developing diabetes (Aguilar et al., 2009). A recent observational study that lasted for two years indicated that 25% of the patients who were diagnosed with both heart failure and diabetes died within two years (Aguilar et al., 2009). In 2004, nearly 68% of all diabetic-related death certificates included notations relating to heart disease (American Diabetes Association, 2013). The aforementioned study also indicated an increase in the number of heart failure hospitalizations among people diagnosed with heart failure and diabetes (Aguilar et al., 2009). Therefore, diabetes does indeed affect heart failure readmissions.

Chronic Obstructive Pulmonary Disease

Chronic obstructive p disease (COPD) is a lung disease that includes chronic bronchitis and emphysema that causes difficulty with breathing (American Lung

Association, 2013). COPD is the third leading cause of death in the United States (American Lung Association, 2013). Nearly 12 million people are currently living with COPD, and it is estimated that up to 24 million may have the disease without being formally diagnosed (American Lung Association, 2013). Because of this, the number of people dying from COPD is growing (American Lung Association, 2013).

According to Hannink, van Helvoot, and Dekhuijzen and Heijdra (2010), both COPD and heart failure (HF) seem to coexist and are more problematic to treat rather than when patients are diagnosed with either COPD or heart failure. COPD is a common comorbidity that is experienced by patients with HF, and this is causing problems for primary care (Hawkins et al., 2010). A recent study indicated that this coexistence is overlooked because the clinical symptoms are similar (Mascarenhas, Azevedo, & Bettencourt, 2010). These clinical systems include low-grade systemic inflammation, vascular leakage, and atherosclerosis (Rutten & Hoes, 2012). The Ukena et al. (2010) study found that coronary artery disease (CAD), chronic heart failure (CHF), and COPD are commonly seen together and have similar systematic inflammatory reactions. Because of this, patients that may have a mild form of COPD are sometimes overlooked (Ukena et al., 2005). It is common for people to develop heart failure after being diagnosed with COPD (Rutten & Hoes, 2012). COPD is often diagnosed at an earlier age than heart failure. Kadam, Uttley, Jones, and Iqbal (2013) recently conducted a longitudinal study for 3 years to understand the severity of COPD when coupled with diabetes and hypertension. They concluded that the diagnosis of heart failure coupled with COPD had the highest level of severity, which directly affected health care costs and

hospital admissions (Kadam et al., 2013). Similarly, Boudestein, Rutten, Cramer, Lammers and Hoes (2009) found that nearly 25% of patients diagnosed with COPD and heart failure were more likely to be readmitted than patients only diagnosed with COPD. This results of this study also found that patients with COPD tend to have a high risk of experiencing heart failure and cardiovascular mortality (Boudestein, et al., 2009). Consequently, this means that COPD may increase heart failure readmission rates and mortality rates.

Some database studies have shown that heart failure patients were hospitalized three times more than COPD patients based on their discharge summaries and prescriptions (Hannik, Helvoort, Dekhuijzen, & Heijdra, 2010). Researchers have questioned whether patients with COPD and heart failure are more prone to be hospitalized for heart failure than patients with heart failure but not COPD (Hannik et al., 2013).

Dementia

Up to 36 million people worldwide are affected by dementia (National Institute on Aging, 2013). The Organization for Economic Cooperation and Development conducted a worldwide study and indicated that dementia affects about 30% of people between the ages of 85 and 89 (National Institute on Aging, 2013). Their results also indicated that nearly 40% of women over 90 years old in the United States were diagnosed with dementia (National Institute on Aging, 2013) There are different types of dementia, such as (a) Alzheimer's disease, (b) vascular dementia, (c) Lewy body dementia, (d) frontotemporal dementia, (e) Huntington disease, and (f) Creutzfeldt-Jakob disease (DC,

2011). Alzheimer's disease is known to be the most common type of dementia (CDC, 2011).

Sometimes, doctors have difficulty diagnosing dementia because the symptoms of the various types tend to overlap (Alzheimers's Association, 2013). Because of this, researchers have become more interested in the risk factors. For example, cardiovascular disease is a common risk factor for the development of dementia because it damages blood vessels all over the body, including the brain (Alzheimer's Association, 2013). Atherosclerosis, hardening of the arteries from increased plaque, is another reason why dementia is common in heart failure patients (Ng, Turek, & Hakim, 2013). There is a correlation between heart failure and cognitive impairments. In fact, the results of several studies have shown that nearly 30% to 80% of patients with heart failure also have cognitive impairments (Dardiotis et al., 2012). Cognitive impairments affect memory, recall, executive function, and psychomotor speed (Daritiotis et al., 2012). A recent study proved that cognitive impairments were more common in patients diagnosed with heart failure when compared to patients without a diagnosis of heart failure (Pressler et al., 2010). About 24% of the participants with heart failure had a significant decline in their memory, psychomotor speed, and executive function (Pressler et al., 2010). The severity of heart failure predicts the level of cognitive impairments. People with more severe heart failure complications tend to have more cognitive impairments than people with less severe complications (Pressler et al., 2010). "Cognitive impairment is particularly common in HF and is increasingly regarded as an independent prognostic factor of HF outcome since it exerts significant effects on quality of life, disability, morbidity, and

mortality of patients with HF" (Dardiotis et al., 2012, p. 5). Bunch et al. (2010) conducted a study to determine if atrial fibrillation is associated with dementia. After following 37,025 patients diagnosed with atrial fibrillation for 5 years, they concluded that atrial fibrillation was independently associated with all types of dementia, especially Alzheimer's dementia (Bunch et al., 2010).

Researchers have predicted that the high readmission rates among heart failure patients could be caused by cognitive impairments affecting their ability to be compliant with recommended therapies and to notice changes related to heart failure (Daritiotis, 2012). Cognitive impairments could contribute to patients having poor insight about their heart failure diagnosis (Dardiotis, 2012). In this case, dementia coupled with heart disease can affect heart failure readmission rates.

Renal Failure

Chronic kidney disease (CKD) affects nearly 20 million adults in the United States (CDC, 2012b). It is a major risk factor that contributes to heart failure. Research has shown that people diagnosed with CKD are more likely to die premature deaths associated with cardiovascular diseases than with end stage renal disease (ESRD; CDC, 2012b). In fact, sudden cardiac deaths are common among patients with ESRD (Wang et al., 2010).

According to the CDC, CKD is a major risk factor for people that have been diagnosed with heart attacks, heart failure, heart rhythm issues, and strokes (CDC, 2012b). *Cardiorenal syndrome* is a term that is commonly used to describe the relationship between heart failure and kidney failure (Wynne, Narveson, & Littman,

2012). Both diseases may cause patients to complain of shortness of breath and chest pain (Maisel et al., 2011). Patients with congestive heart failure (CHF) can exhibit similar signs and symptoms as patients with renal impairments (Damman et al. 2010.) A recent study indicated that patients who were initially admitted for heart failure were likely to develop problems with their renal functions (Wynn et al., 2011). There is a substantial amount of research concerning the relationship between the two diseases. Verdiani, Lastrucci, and Nozzoli (2011) conducted a study to determine whether patients hospitalized with acute heart failure experienced impaired renal functions. The results supported the aforementioned claims because about 11% of heart failure patients developed impaired renal functions (Verdiani et al., 2011). Another study also proved that nearly 23% of the patients hospitalized with acute heart failure had worsened renal function due to heart failure (Belziti, Bagnati, Ledesma, Vulcano, & Fernandez, 2009). Moreover, the Blair et al. (2011) EVEREST trial study revealed that patients had worsening renal functions while hospitalized and soon after they were discharged.

According to Belziti et al. (2009), the diagnosis of acute decompensated heart failure (ADHF) is a common admitting diagnosis that has been associated with worsening renal functions. Moreover, worsening renal functions (WRF) have also been associated with the increased hospital readmissions and excessive use of diuretics (Wynn et al., 2011). In regards to hospital readmissions, the results of a recent study indicated that patients hospitalized for heart failure with WRF were likely to intensify long-term mortality and re-hospitalizations if the renal functions did not improve upon discharge

(Lanfear et al., 2011). Consequently, this supports the notion that ESRD affects heart failure RSSRs.

Hypertension

Hypertension is a common term that is used to explain high blood pressure (National Institutes of Health, 2011). With nearly 67 million adults in the United States having high blood pressure, it is the most prevalent diagnosis in America (CDC, 2013b). High blood pressure is often referred to as a "silent killer" because the signs and the symptoms are sometimes overlooked (CDC, 2012a). About 74% of the people that are diagnosed with chronic heart failure are hypertensive (CDC, 2012b). Up to 73% of people treated in emergency departments for acute heart failure report a history of hypertension (Peacock et al., 2011). These statistics clearly support the fact that there is a relationship between hypertension and heart failure.

People with severe hypertension usually report to emergency departments in a crisis. These hypertensive crises are responsible for 25% of all emergency room visits, which greatly influences hospital readmissions rates (Peacock et al., 2011). A recent study, derived from the Studying the Treatment of Acute HyperTension (STAT) registry, sought to observe hospital readmissions among 25 hospitals with a total of 1199 participants (Peacock et al., 2011). The results indicated that about 26% of the patients diagnosed with both hypertension and acute heart failure were readmitted within 30 days (Peacock et al., 2011). Gore et al. (2010) conducted a similar study to serve the hospital readmissions for patients with acute severe hypertension. Their results indicated that nearly 35% of the patients were readmitted within 90 days and 41% were readmitted

more than one time within 90 days (Gore et al., 2010). Based on these cases, the diagnosis of hypertension does increase heart failure RSSRs.

Discharge Planning

CHF is commonly associated with increased hospital readmissions (Mudge et al., 2010). Researchers believe that heart failure readmissions could be decreased if patients receive information about disease management upon admission (Mudge et al., 2010). Bruin, Heijink, Lemmens, Struijs, and Baan (2011), recently conducted a study to determine the financial effects on disease management programs for diabetes, depression, heart failure and chronic obstructive pulmonary. Their results indicated that proper disease management can actually lower healthcare costs (Bruin, et al., 2011). Another study was conducted to learn if various interventions such as: (a) patient education, (b) individualized treatment plans, and (c) community resources would decrease admissions (Mudge et al., 2010). The results indicated that the interventions did not make a difference in the readmissions rates, however there was a noticeable decrease in mortality (Mudge et al., 2010). Subsequently, Fredericks, Beanlands, Spalding, and Da Silva (2010), conducted a similar study to detect if patient education interventions were successful and their findings suggested that most effective interventions occurred through multiple individualized sessions. These results are inconsistent with a study conducted by Scott (2010) who also examined the affects of interventions on hospital readmissions. The interventions used in this study consisted of: (a) self-management, (b) coaching from medical staff, (c) home visits, and (d) follow-up telephone calls post discharge (Scott, 2010). These interventions were successful with reducing heart failure readmissions

(Scott, 2010). Giving patients pre-packaged discharge services is another useful intervention that has been proven to reduce hospital readmission (Jack et al., 2009). Kommuri, Johnson, and Koelling (2010) conducted a study using a six-minute walk test to predict 30-day readmissions of heart failure. This test was very instrumental because it revealed that patients who walked more than 400 meters in six minutes upon discharge were about 57% less likely to die or to be readmitted within 30 days than patients who walked less than 400 meter (Kommuri, et al., 2010).

Post-discharge planning can also be effective with reducing the number of readmissions. Researchers have suggested that early physician follow-up appointments post-discharge may reduce readmission rates (Hernandez et al., 2010). This perspective may be true in some cases. For example, the results from a recent study indicated that patients who had outpatient physician follow-up appointments within seven days post-discharge had a lower risk of being readmitted in 30 days (Hernandez et al., 2010). The population in this study included 30,136 Medicare beneficiaries that were over 65 and diagnosed with heart failure (Hernandez et al., 2010). Harrison et al. (2011) conducted another study to determine the impact on readmission rates when patients receive follow-up phone calls post discharge. After analyzing 30,272 medical claims from members with commercial health plans, their results indicated that follow-up phones post discharge were effective with reducing hospital readmissions (Harrison et al., 2011). Members that did not receive follow-up phone calls within 14 days postdischarge were 1.3 more likely to be readmitted in thirty days (Harrison et al., 2011). Findings in this study indicated that when members received timely discharge follow-up phone calls, it reduced the their

likelihood of being readmitted in addition to eventually reducing the cost of their health care plans (Harrison et al., 2011).

According to Scott (2010) deficiencies in the discharge process are to blame when patients experience unplanned readmissions within 30 days of their discharge. Effective and timely discharge planning that reduces the number of readmissions has historically been a problem since the 1980's (Guerin, Grimmer-Somers, Kumar & Dolejs, 2012). Discharge planning processes affect: (a) readmissions, (b) hospital costs, and (c) patient satisfaction. Effective, safe, and timely discharges are negatively affected by: (a) poor communication, (b) incomplete, (c) postponed assessments (d) weak organizational processes, and (c) insufficient community resources (Guerin, et al., 2012).

Emergency Departments

Emergency departments play a pivotal role in the problems associated heart failure RSSRs because this is where decisions are made to admit patients or not. Based on this, emergency departments are in a great position to reduce inpatient acute heart failure (Pang, et al., 2012). Emergency departments have difficulty determining whether acute heart failure patients can be safely discharged home because "patients with HF are a complex and heterogeneous group, with significant comorbid illnesses, multiple medications, as well as socioeconomic and psychosocial concerns" (Pang, et al., 2012, p.902). As previously mentioned, the co-morbid illnesses associated with a heart failure diagnosis can be detrimental. Reducing readmissions from emergency departments can significantly impact the revenue spent on unnecessary hospitalizations. It is estimated

that there would less than 40,000 hospitalizations if there was at least a 5% decrease in the number of heart failure admissions (Pang et al., 2012).

Centers for Medicare and Medicaid Services and the Patient Protection and Affordable Care Act

CMS has started penalizing hospitals for having high readmission rates for patients diagnosed with: (a) heart failure, (b) acute myocardial infarction, and (c) pneumonia within 30 days of being discharged (Vaduganathan, Bonow, & Gheorghiade, 2013). CMS is hoping to decrease readmissions by 20% which should prevent 1.6 hospitalizations and save nearly $15 billion by the end of 2013 (Kocher & Adashi, 2011). The Patient Protection and Affordable Care Act mandated the Hospital Readmissions Program (HHRP) in an effort to deal with high readmission rates. "Section 3025 of the Affordable Care Act added section 1886 (q) to the Social Security Act establishing the Hospital Readmissions Reduction Program, which requires CMS to reduce payments to IPPS hospitals with excess readmissions, effective for discharges beginning on October 1, 2012" (CMS, 2013, para. 1). At this time, the penalties only apply to heart failure, acute myocardial infarction, and pneumonia diagnoses. Other diseases and medical interventions such as: (a) acute exacerbation of chronic pulmonary disease, (b) asthma, and (c) other optional surgical procedures may be added in the future (Kocher & Adashi, 2011).

The HRRP is the most notable program to date that primarily focuses on the readmission problem. During the 2013 fiscal year, hospitals that are considered underperforming or those having higher than expected readmission rates will start getting

penalized by losing 1% or less in Medicare reimbursements (Kocher & Adashi, 2011). Medicare payment penalties are expected to be capped at 2% and 3% during 2014 and 2015 (Kocher & Adashi, 2011). These financial penalties were designed to decrease "excessive" readmissions at hospitals that are paid under Medicare's diagnostic related group (DRG) (Berenson, Paulus, & Kalman, 2012).

Excessive hospital readmissions started receiving increased criticism when the problem became associated with hospitals providing poor quality of care and excessive spending, in which both can be corrected (Berenson, et al., 2012). Kocher and Adashi (2011) have also agreed that some readmissions are preventable and correctable. Researchers believe that readmissions occurring soon after discharge are preventable and may be caused by the discharge process and the coordination of care provided by the hospital (Vaduganathan, et al., 2013). A recent study indicated that about 20% of Medicare beneficiaries are readmitted within 30 days after being discharge and this ends up costing $17 billion yearly (Berenson et al., 2012). In fact, about 25% of all heart failure patients are readmitted in 30 days and half of them are admitted for medical issues directly related to heart failure (Vaduganathan et al., 2013).

At this time, it is uncertain how the Affordable Care Act will affect the readmissions penalties at Safety-net hospitals. Safety-net hospitals are known to provide medical care for Medicaid recipients and indigent individuals (Berenson & Shih, 2012). This vulnerable population tends to have more chronic illnesses, in addition to employment and housing issues which further complicates discharge planning and increases the likelihood of readmissions (Berenson & Shih, 2012). A recent study

indicated that safety- net hospitals are 30% more likely to have higher 30-day readmission rates than other hospitals (Berenson & Shih, 2012). This was due to the challenges previously mentioned. Safety-net hospitals are at a major disadvantage because the Hospital Readmission Reduction Program does not include special stipulations for organizations that are already financially disadvantaged. Researchers believe that this dilemma may make more safety-net hospitals interested in bundled payment rates (Berenson & Shih, 2012). Bundled payments and capitation models have historically been unsuccessful, especially with Accountable Care Organizations, because independent practitioners are not well integrated into hospital systems and have issues with reconciling care plans (Froimson et al., 2013). Epstein, Jha, and Orav (2011) disagree with this speculation about the Accountable Care Organizations because the results in their study indicated that there is a relationship between regional rates of hospitalization and admission rates. These researchers believe that more emphasis should be placed on policy efforts that support a reduction in incentive to use hospital services (Epstein, et al., 2011). Moreover, they are predicting that programs with payment incentives that are similar to capitation may help with reducing future readmissions (Epstein et al., 2011). This is interesting because the Affordable Care Act includes a Bundled Payments for Care Improvement Initiative (BPCI) that allows the Centers for Medicare and Medicaid Services to develop bundling models (Froimson et al., 2013). The Centers for Medicare and Medicaid Services are in the process developing various bundling models.

Hospital to Home Initiative

The H2H is a national quality improvement campaign that has been launched to specifically help with both reducing cardiovascular readmissions and with improving issues that cardiovascular patients may experience while being transitioned from inpatient to outpatient (American College of Cardiology, 2011). The American College of Cardiology and the Institute for Healthcare Improvement are cosponsors for the H2H Initiative which began in 2009. In addition, other sponsors include individuals, foundations, and companies (American College of Cardiology, 2011). External grants are also used to fund the H2H. The H2H was created after a study was conducted to analyze Medicare claims from 2003 to 2004 which included 11,855, 702 Medicare beneficiaries (Jencks, et al., 2009). The Colorado Multiple Institutional Review Board approved the design and procedures used in this study (Jencks, et al., 2009). The study specifically focused on understanding readmissions patterns. Results indicated that 19.6% of the 11,855,702 discharged Medicare beneficiaries were readmitted within 30 days and 34% were readmitted in 90 days (Jencks, et al., 2009, p.148). The Jenks et al. study also found that 67.1% of the patients discharged with medical conditions and 51.5% of patients discharged with previous surgeries were more likely to be readmitted or dead within one year following their discharge (Jenks et al., 2009). The readmission rate in the state of Georgia was 19.1% within 30 days after discharge (Jencks et al., 2009). Heart failure was the leading cause for readmissions in this study. Furthermore, the study revealed that "Medicare payments for unplanned rehospitalizations in 2004 accounted for about $17.4 billion of the $102.6 billion in hospital payments from Medicare, making them a large

target for cost reduction" (Jencks, et al., p.1426) Hence, the significant results from this study prompted the emergence of the H2H.

The American Heart Association sponsored a national study that specifically focused on the H2H and hospital strategies associated with 30-day heart failure RSSRs (Bradley et al. 2013). The national sample consisted of 599 hospitals across the United States that participated in the H2H (Bradley et al. 2013). The results indicated that the following six strategies from the H2H were associated with reducing 30-day readmission rates: (a) collaborating with physicians in the community and physician groups, (b) collaborating with local hospitals, (c) ensuring that nurses were assisting with medication reconciliation, (d) making follow-up appointments scheduled prior to discharge, (e) encouraging hospitals to implement a process to send to a patient's primary care physician, and (f) encouraging hospitals to have staff follow up with patients about pending lab results post discharge (Bradley et al. 2013).

There are currently over 1,300 facilities and 50 strategic partners supporting the H2H (American College of Cardiology, 2011). These supporters represent different phases of the health care continuum such as: (a) hospitals, (b) home health agencies, (c) practices, (d) community leaders, and (e) specialty societies (American College of Cardiology, 2011). All of these supporters were encouraged to share their expertise, literature, and best practices in an effort to deal with the readmission problem. The leadership team that guides the H2H is led by a steering committee and a group of volunteers. This leadership team includes the following individuals:

1. Dr. Akshay Desai is an Associate Director for Brigham and Women's Hospital.
2. Dr. Kathleen Grady is an Administrator Director for the Center for Heart Failure at Northwestern University.
3. Adrian Hernandez is a Associate Professor at Duke University
4. Jane Linderbaum is an Inpatient Operations Manager and Assistant Professor at the Mayo Clinic.
5. Kathy Makkar is a Clinical Pharmacy Specialist of Cardiology at Lancaster Memorial Hospital.
6. Dr. Mary Walsh is a Director of CHF & Nuclear Cardiology at The Care Group, LLC.

This leadership team and other supporters work in collaboration towards obtaining the goal of the H2H which is to ultimately reduce heart failure and myocardial infarction readmission rates by 20%. (American College of Cardiology, 2011). Because the H2H is a national campaign, it has developed a web-based community for the supporters to share their experiences and ideas through a listserv that offers four topics monthly (American College of Cardiology, 2011). The website also has tools and resources including webinars to assist hospitals with addressing their readmission issues (American College of Cardiology, 2011).

Chronic Care Model

Dr. Wagner is the founding director for the Group Health Research Institute and the MacColl Center for Health Care Innovation which was developed in 1992 (Group

Health Institute, 2012). He focused his efforts on advancing his quality improvement research into practice (Group Health Institute, 2012). As a result of his interests in improving the quality of care for chronically ill patients, Dr. Wagner and his team developed the CCM (Group Health Institute, 2012). The Robert Wood Johnson Foundation (RWJF) funded the research which gave Dr. Wagner and his team the opportunity to promote and to use CCM. The CCM was originally developed to assist many health care plans and provider groups with improving care for low income populations, especially those that provide care for chronically ill patients (Group Health Institute, 2012).

The CCM has six components: (a) health system-organization of healthcare, (b) self-management support, (c) decision support, (d) delivery system design, (e) clinical information systems, and (f) community resources and policies (Barr et al., 2003). The health system-organization component helps organizations with establishing measurable goals in order to improve better chronic care outcomes. The self-management support component is focuses on patients taking an active role in their care such being receptive to educational resources offered by practitioners. The decision support component is inclusive of the entire medical team using evidence based practices (Barr et al., 2003). The team approach is also encouraged with delivery system design component because teams are encouraged to support chronic care patents by staying closely involved with follow-up care. The clinical information systems component is responsible for developing data systems that track client data. This would include any information that is relative the chronic illness. The community resources and policies component is

instrumental with helping organizations in developing partnerships with community organizations. This information is usually used for patient referrals.

Overall, the CCM is a well-known framework that has been used throughout the United States and internationally (Coleman, Austin, Brach & Wagner, 2009). The Coleman et al. (2009) study indicated that the CCM has been beneficial in helping with improving the quality of care and health outcomes in both United States and internationally (Coleman et al., 2009). A similar longitudinal study also indicated that the CCM was effective with improving the quality of care and patient outcomes. Based on these studies, the CCM has been used to transform organizations. Research has suggested that these transformations can eventually advance to better patient care outcomes; however it is uncertain as to how much this will affect health care costs because it would probably depend on the medical diagnosis (Coleman, et al., 2009).

Conclusion

The review of literature contributes to this study because it thoroughly explains the significance of the heart failure readmission problems that are affecting health care organizations in the United States. Reducing heart failure RSSRs have been problem for many years and it still remains unresolved. It is indeed a complex problem that involves many layers to address. In an effort to address the problems with heart failure RSRRs, this study evaluated the effectiveness of H2H that is currently being utilized in participating hospitals throughout the state of Georgia. In addition, this study looked at the associations between the heart failure RSSRs, the number of implemented strategies, and the categories of strategies.

Summary

Over the years, policy makers and hospital administrators have become increasingly concerned about heart failure readmissions because they are costly and may negatively affect the bottom line. As previously mentioned, the United States government is spending about $39 billion annually on treating heart failure patients and this includes inpatient hospitalizations, outpatient visits, and readmissions (Bui et al., 2011). Reasons for heart failure readmissions have been associated with patients having other comorbid illnesses such as: (a) diabetes, (b) COPD, (c) dementia, (d) renal failure, and (e) hypertension (Hines, 2010). Protocols followed by emergency departments may affect heart failure RSSRs because they make final decisions about hospital admissions. In addition, discharge planning is also a factor to consider when addressing heart failure RSSRs. Some research studies have indicated that multiple readmissions interventions are more effective than a single discharge intervention. The Patient Protection and Affordable Care Act have mandated that the HRRP be enforced by CMS as means of dealing the financial burdens of hospital readmissions. The review of literature suggests that there are some successful interventions used to decrease heart failure RSSRs. However, there is very little data that examines the associations between heart failure readmission rates in Georgia, the number of strategies and the categories of strategies. This presents a gap in the literature. This study successfully filled the gap in literature by evaluating these associations. Coffey et al. (2012), believe that researchers need to place more emphasis on effective strategies to decrease readmissions rather than who and why patients were admitted. Furthermore, the CCM has been identified as the most relevant

conceptual framework for this study because it is widely used by many organizations in the United States to assist chronic illness readmissions (Coleman et al., 2009).

Chapter 2 introduced a review of the research literature on heart failure readmissions that clearly indicated a gap in literature as it relates to effective strategies that may reduce heart failure RSSRs and the comorbidities that may affect heart failure readmissions. Chapter 3 introduces the research methodology that was used in this study. Also, chapter 3 includes discussions about the population, sample, sampling methods, survey design, survey instrument, and the data analysis. There is also a discussion about the reliability and validity of the study. Chapter 3 provides a more in depth discussion about research methodology that was used in this study. This discussion includes more information about the research question and the hypotheses. The following information is discussed in Chapter 3: (a) sample population, (b) sampling frame, (c) informed consent, (d) confidentiality, (e) geographic location, (f) data collection, (g) instrumentation, (h) validity and reliability, and the (i) data analysis.

Chapter 3: Research Method

Introduction

This chapter includes in-depth information about the methods used for this study. An overview of the purpose of the study and the appropriateness of the research design is presented. The setting and sample size of the population are discussed, in addition to the measuring instrument. In addition, the methods for collecting and analyzing the data are discussed. Lastly, ethical considerations concerning the protection of participants' rights are briefly mentioned.

Purpose of the Study

The purpose of this study was to understand the impact that the H2H has on heart failure RSRRs among the 35 participating hospitals in Georgia. The research questions for this study focused on whether the number of strategies used affected the reduction of heart failure RSSRs and whether categories of strategies affected the reduction of heart failure RSSRs.

Research Design and Rationale

This study used a nonexperimental, quantitative cross-sectional research design. I chose this design because the study used a survey to determine the relationships between the H2H and the reduction of heart failure RSRRs in Georgia. Cross-sectional designs are commonly used in the social sciences, especially with survey research (Frankfort-Nachmias & Nachmias, 2008). Researchers typically use cross-sectional designs to describe the relationships between variables (Frankfort-Nachmias & Nachmias, 2008). This design was very beneficial because it helped me with addressing

the research questions. It allowed me to describe the associations between the reduction in heart failure RSRRs, number of strategies implemented, and the categories of the strategies. Additionally, there was one major advantage of using a cross-sectional design for this study. Cross-sectional designs allow researchers the opportunity to increase external validity by using probability samples in natural environments (Frankfort-Nachmias & Nachmias, 2008). It should be noted that a quantitative cross-sectional design was successfully used in the Bradley et al. (2013) study.

A nonexperimental quantitative cross-sectional design was chosen over a qualitative or mixed methods design because the impact the H2H has in reducing heart failure RSRRs was expressed in quantitative measures based on the survey responses collected from the participants. This type of quantitative survey research was beneficial for this study because I was able to describe trends that were associated within the sample. Using a nonexperimental design versus an experimental design, such as the survey, was practical for this study because I was not seeking to determine whether a specific treatment was affecting an outcome. Additionally, using this survey was economical, and the turnaround for data collection was relatively fast.

The independent variable in this study was the fully implemented H2H, which included all 30 readmission strategies. The dependent variable was heart failure RSRRs.

Population and Setting

The target population of this study was 35 individuals who were employed at the hospitals that participated in the H2H. The employees held different roles in the hospitals. A more detailed explanation of the demographics of the sample population is presented in

Chapter 4. Participants were automatically eligible to participate in the study because their hospitals were participating in the H2H.

Sampling Frame and Sampling Procedures

A nonprobability convenience sample was chosen for this research study because information about the hospitals participating in the H2H in Georgia was conveniently available through the American College of Cardiology. A convenience sample was also used because there were only 35 hospitals in Georgia that were participating in the H2H Initiative. One primary contact person was chosen to complete the survey from following hospitals:

- Athens Regional Medical Center
- Atlanta Medical Center
- Carl Vinson Veterans Administration Medical Center
- Cartersville Medical Center
- Charlie Norwood Veterans Administration Hospital
- Coliseum Medical Center
- DeKalb Medical Center
- Doctors Hospital of Augusta
- Fairview Park Hospital
- Grady Memorial Hospital
- Gwinnett Medical Center
- Hutcheson Medical Center
- Liberty Regional Medical Center

- Medical College of Georgia Medical Center
- Memorial Health University Medical Center
- Murray Medical Center
- Newton Medical Center
- North Fulton Medical Center
- Northside Hospital
- Northeast Georgia Medical Center
- Palmyra Park Hospital
- Phoebe Putney Memorial Hospital
- Piedmont Fayette Hospital
- Piedmont Hospital
- Saint Joseph's Hospital
- South Fulton Hospital
- Southeast Georgia Health System
- Spalding Regional Medical Center
- St. Mary's Health Care System
- Sylvan Grove Hospital
- Tanner Medical Center-Villa Rica
- Tanner Medical Center
- Atlanta Veterans Administration Medical Center
- Walton Regional Medical Center

- Wellstar Cobb Hospital (Hospital to Home, 2013).

Data Collection and Analysis

This nonexperimental, cross-sectional quantitative research study used web-based surveys to contact the 35 hospitals that are participating in the H2H in Georgia. I started my data collection by contacting all of the hospitals and requesting the publicly available email addresses for the persons responsible for implementing the H2H. The Institutional Review Board strongly urged me to follow this protocol. After receiving the correct email addresses, an invitational email (see Appendix C) was sent to each potential participant. The invitational email served as an introduction the researcher and to the research study. This invitational email also included a copy of the consent form (see Appendix D) with an attachment for a unique link to Survey Monkey at the bottom of the page. The consent form invited the participants to take part in the research study and advised them about what information would be collected for the study and why. The form also advised the potential participants about any potential risks they might experience and the confidentiality of their responses. In addition, the participants were informed about how this information would be used and disseminated. In an effort to increase the response rate, the participants were offered a detailed explanation of the findings of the study if desired.

The participants were able to gain immediate access to the surveys once the online SurveyMonkey link was selected. Participants were asked to complete the surveys in week. They had access to the online SurveyMonkey link 24 hours a day, seven days a week. Follow-up emails (see Appendix E) were sent out two days after the initial e-mail

as a gentle reminder. Because the response rate was initially very low, reminder emails with the introduction letters were sent out weekly, and then one follow-up email was sent weekly. The surveys were closed after the participants agreed to participate, completed the survey, or until they advised me that they did not want to participate. Once the surveys were closed, the information from SurveyMonkey was exported into SPSS for data analysis. Thank you emails (see Appendix F) were sent to the participants after they completed the survey.

Analysis

All survey questions were entered into Survey Monkey and coded. After the data were received in the SurveyMonkey database, it were exported into SPPS, cleaned, and then analyzed. Cleaning the data was imperative because SPSS could not calculate the statistics when there were missing values. The missing values were blank fields that were the result of participants not answering some of the questions. The missing values were recoded with .99 in order for SPSS to identify the values as missing and not include them in the statistical calculations. Both descriptive statistics and inferential statistics were calculated to fully analyze the data. Descriptive statistics were calculated to analyze the demographics about the sample population. The descriptive statistics were used to identify the role of the participants. Inferential statistics were used (a) to make inferences about the collected data and (b) to test the research hypotheses. A series of one-way ANOVAs was used to calculate the inferential statistics, which allowed me to test the hypotheses and to make inferences about the associations between variables. Statistically significant relationships were determined based on the alpha level (p value of .05 or less).

The null hypotheses was rejected when $p \leq .05$. All of the data in this study were analyzed using SPSS. The independent variable the fully implemented H2H and the dependent variable is the heart failure RSRR.

Instrumentation and Materials

The H2H Survey that was used in this study was an already established instrument that had been used in the Bradley et al. (2013) study. Researchers conducted a web-based, cross-sectional quantitative study from 2010 to 2011 (Bradley et al., 2013). Their total sample size was 599 hospitals that were participating in the H2H, and the response rate was 91% (Bradley et al., 2013). These researchers developed the H2H survey by compiling various readmission reduction strategies from the H2H, STAAR, and Better Outcomes for Older Adults through Safe transitions campaigns (Bradley et al., 2013). The survey was pretested for its and comprehensiveness with five professional colleagues who held roles similar to those of the intended participants, and the items that were deemed ambiguous were not used (Bradley et al., 2013). Furthermore, the H2H Survey was used because it was applicable and the instrument has already been validated. Permission to use the H2H survey was granted; a copy of the license is in Appendix A. The H2H Survey consists of 49 close-ended questions and 30 readmission hospital strategies (Appendix B). Two further questions were added to the survey:

- Was your hospital participating in the H2H Initiative from 2009 to 2012?
- What is your heart failure risk-standardized readmission rate now?

Validity and Reliability

The validity and reliability of the survey instrument had already been tested by Bradley et al. (2013). Researchers "pretested the survey for its comprehensibility and comprehensiveness with 5 professionals in roles similar to intended respondents and revised or excluded items that were ambiguous or imprecise" (Bradley et al., 2013, p. 445). Validity is determined by whether or not an instrument measures what is intended to measure (Field, 2009). In order to accurately measure the validity of the instrument used in this study, content validity had to be considered. Content validity means that a survey measures all of the conceptual domains without leaving out relevant information (Frankfort-Nachmias & Nachmias, 2009). Reliability determines whether an instrument is consistent under different circumstances (Field, 2009). The test-retest method is the easiest way to test the reliability of an instrument (Field, 2009). It is done by testing the same group twice and getting similar results each time (Field, 2009). It is assumed that the H2H survey is both valid and reliable.

Research Questions and Hypotheses

Research Question 1

Is there a reduction in heart failure risk-standardized readmission rates when hospitals implement the Hospital to Home Initiative?

H_1: There will be a reduction in heart failure risk-standardized readmission rates when hospitals implement the Hospital to Home Initiative.

H_0: There will not be a reduction in heart failure risk-standardized readmission rates when hospitals implement the Hospital to Home Initiative.

Research Question 2

Is the number of implemented H2H strategies associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals?

$H_{1:}$ The number of implemented H2H strategies will be associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals.

$H_{0:}$ The number of implemented H2H strategies will be not be associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals.

Research Question 3

Are the categories of strategies associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals?

$H_{1:}$ The categories of strategies will be associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals.

$H_{0:}$ The categories of strategies will be not associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals.

The H2H Survey was sufficient to answer these research questions.

Ethical Procedures

The initial invitational email that was sent to the participants explained that participants' personal information and the name of their organization would remain confidential. The participant's organization was assigned a unique link through SurveyMonkey, and participants were only identified in SurveyMonkey by their respondent IDs. The consent form was attached to the invitational email and again invited participants to take part in the survey. The consent form advised the participants that: (a)

their participation was voluntary, (b) there were no risks to their safety, (c) there would be no compensation, and (d) all data would be kept confidential and secured on my personal computer for 5 years, as required by the university. The Institutional Review Board approved the application for this research study, and the approval number is 03-02-15—264860 (see Appendix G).

Summary

This research study used descriptive and inferential statistics to analyze the data. I was interested in determining whether heart failure RSRRs were reduced when the H2H was implemented. In addition, I was interested in determining the associations between reduced heart failure RSRRs, the number of strategies implemented, and the categories of strategies used.

Chapter 4: Results

Introduction

This chapter contains a description of the data and analysis used to address the three research questions developed for this study. It consists of four major sections: (a) purpose of the study and the research questions with hypotheses, (b) data collection, (c) results, and (d) summary of the findings. In the first section, I briefly describe the purpose of the study and restate the research questions with the hypotheses. The second section contains detailed explanations of the data collection process, which include the time frame for the data collection as well as the actual recruitment procedures and the response rate. The second section has two subsections: (a) demographic characteristics of the sample and (b) data analysis procedures. The third section is the lengthiest section of the chapter and has four subsections contain the results for the research questions. The first subsection includes the demographic data statistics that characterize the sample. The second subsection includes the statistical assumptions that are associated with using the one-way ANOVA. In the third subsection, I provide a report of the statistical analysis findings that are directly related to the research questions and hypotheses. The fourth section includes a summary of the data findings that specifically address the research questions. Tables are used to illustrate the results throughout this chapter.

Purpose of the Study and Research Questions With Hypotheses

The purpose of this study was to understand the impact that the H2H Initiative has on heart failure RSRRs among the 35 participating hospitals in Georgia. The 2H includes all of the various readmission reduction hospital strategies from H2H, STAAR, and the

Better Outcomes for Older Adults Through Safe Transitions campaigns, which were used by researchers to develop the H2H Survey (Bradley et al., 2013).

The following three research questions and hypotheses were developed to determine (a) if a fully implemented H2H duce heart failure RSRRs in Georgia, (b) if the number of implemented H2H strategies would or would not be associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals, and (c) if categories of strategies would or would not be associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals.

Research Question 1

Is there a reduction in heart failure risk-standardized readmission rates when hospitals implement the Hospital to Home Initiative?

$H_{1:}$ There will be a reduction in heart failure risk-standardized readmission rates when hospitals implement the Hospital to Home Initiative.

H_0: There will not be a reduction in heart failure risk-standardized readmission rates when hospitals implement the Hospital to Home Initiative.

Research Question 2

Is the number of implemented H2H strategies associated with a reduction in heart failure RSRR for the H2H participating Georgia hospitals?

$H_{1:}$ The number of implemented H2H strategies will be associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals.

$H_{0:}$ The number of implemented H2H strategies will be not be associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals.

Research Question 3

Are the categories of strategies associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals?

$H_{1:}$ The categories of strategies will be associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals.

$H_{0:}$ The categories of strategies will be not associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals.

Data Collection

The data were collected from March 16, 2015 to May 11, 20, is period of nearly 2 months. The actually data collection period was significantly longer than indicated in the plan discussed in Chapter 3. It took longer than anticipated to collect the data because some of the initial publicly available email addresses that were obtained from the hospitals were not the best contacts. Most of the initial acts were for personnel from the quality departments in the hospitals. However, it was discovered that not all quality departments were familiar with the H2H, and additional contact information was needed. The actual data collection process began when the best contact person for the hospitals was identified and that person's publicly available email address was obtained. Potential participants were emailed an invitational email letter (see Appendix C) that included an attachment with a copy of the consents (see Appendix D). The unique links to the SurveyMonkey survey (see Appendix B) were included at the bottom of the consent form. Thank you emails (see Appendix F) were sent to the participants upon completion of the survey.

As previously discussed in Chapter 3, SurveyMonkey is an online software program that is commonly used to help researchers with designing, collecting, and analyzing data. Weekly Email reminders were sent to all potential participants who promised to complete the survey; these were sent weekly or until they indicated that they were not interested in participating. Table 1 shows the number of hospitals that were surveyed, the number of hospitals that participated in the study, and final response rate. Twenty-one hospitals agreed to participate in the research study. The sample included 21 of the 35 surveys sent for a 60% response rate.

Table 1

Hospitals Surveyed, Responses, and Final Response Rate

Hospitals selected	Hospitals Surveyed	Responses	Rate (%)
All H2H hospitals	35	21	60

Demographic Characteristics of Sample

All of the hospital participants in the sample were familiar with and had implemented the H2H. Because this study consisted of a convenience sample of 35 hospitals in Georgia, it is unlikely that the sample population is representative of all of the hospitals in the state.

Data Analysis Procedures

The survey data in SurveyMonkey were exported into SPSS (Statistical Package for Social Sciences) for all of the analyses. The three research questions were analyzed using descriptive statistics, including means and standard deviations. The means provided the central tendency for each group, and the standard deviations showed the potential variations for each distribution. Data were analyzed by using a series of one-way ANOVAs to determine whether RSRRs differed based on various readmission strategies implemented. This was useful in determining the associations between the reduction in RSRRs and specific readmission strategies associated with that reduction. This statistical test measured the influence of the independent variable, which in this study was the implementation of the H2H on a dependent variable, which was the RSRRs. Statistically significant relationships were determined based on the alpha level of .05 or less. Statistical assumptions were evaluated to make sure the one-way ANOVA was able to accurately analyze the data for this study. The statistical assumptions are discussed in the next section.

Results

The results are presented in four sections: (a) the first section describes and presents results for demographics, (b) the second section describes and presents results to address the first hypothesis, (c) the third section describes and presents results to address the second hypothesis, (d) and the fourth section describes and presents results to address the last hypothesis.

Demographic Data

As previously mentioned, the entire sample population consisted of 21 hospitals that were familiar with the H2H. The H2H Survey included one question about the participants' primary role in the hospital. Question 54 asked participants to indicate their primary role in the hospital by choosing from among the following responses: (a) quality improvement, quality management, quality assurance, performance; (b) case management, care coordination, social work, discharge planning; (c) cardiology; (d) other clinical role; or (e) other nonclinical role. Table 2 shows the results for this question. Table 2 shows the frequency of the demographics; 18 participants answered the question, and three participants skipped the question. The case management group comprised the largest percentage, with a total of 10 (47.6%). The quality improvement group had the second to largest percentage, with a total of four (19%). There were no cardiology participants in the study. The other clinical role group had a total of two (9.5%). The other nonclinical group had a total of four (19%).

Table 2

Participants' Role in 18 of the 21 Participating Hospitals

Role	Frequency	Percent
Quality improvement, quality management, quality assurance, performance	4	19.0%
Case management, care coordination, social work, discharge planning	10	47.6%
Cardiology	0	0%

Other clinical role	2	9.5%
Other nonclinical role	2	9.5%

Note. $N = 18$.

Statistical Assumptions

The following three assumptions were evaluated because one-way ANOVAs were used: (a) testing for outliers using a boxplot, (b) testing for the Shapiro-Wilk test of normality, (c) testing for homogeneity of variances using Levene's test for equality of variances. Figure 1 shows the box plot. There were no outliers in the data, as assessed by inspection of the box plot. The Shapiro-Wilk test of normality was used to test whether the data were normally distributed for each group of the independent variable, which in this case was the H2H. Table 3 shows the result of the Shapiro-Wilk test. The RSRR scores were normally distributed for the *below the national rates* and *don't know* groups, as assessed by Shapiro-Wilk's test (p>.05). Table 4 shows the Levene homogeneity of variances test. There was homogeneity of variances, as assessed by Levene's test for equality of variances (p=.120), which indicates that the variances
are equal and the assumption was met. Because all three of the previously mentioned assumptions were met, the one-way ANOVA was used.

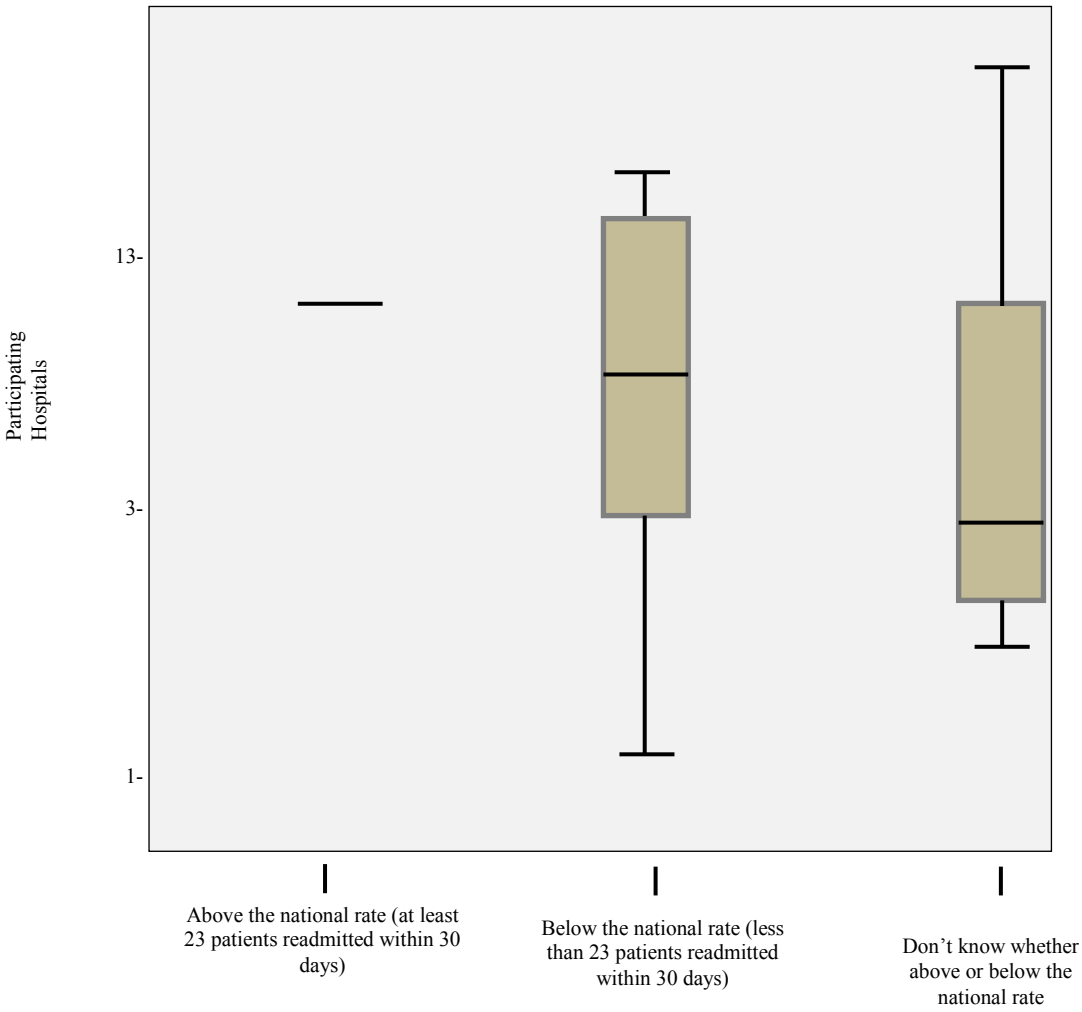

Figure 1. The boxplot was used to test for outliers in the dataset. The y axis measures the number of participating hospitals that answered the question 7. 17 out of the 21 participating hospitals answered the question. There were no outliers in the data.* There is no full box plot for "above the national rate" because only one hospital reported being "above the national rate" prior to implementing H2H.

Table 3

Shapiro-Wilk Test

Groups	Shapiro-Wilk Statistic	*Df*	*Sig.*
Below the national rate	.911	13	.187
Don't know	.924	3	.467

Table 4

Levene's Test for Homogeneity of Variance

Levene statistic	*df1*	*df2*	*Sig.*
1.370	1	14	.261

Research Question 1

The first research question asked if the participant's hospital had a reduction in heart failure RSRRs when all H2H strategies were implemented. Question 7 on the survey specifically asked participants what their heart failure RSRRs were after implementing all H2H strategies. It is important to remember that all of the participants had implemented all H2H strategies, so responses for this question were relevant to whether the initiative was associated with a reduction in heart failure RSRRs. Participants answered these questions on a 3-point Likert scale: *above the national rate* (at least 23 patients readmitted within 30 days of discharge) = 1, *below the national rate* (less than 23 patients readmitted within 30 days of discharge) = 2, and *don't know* = 3. Table 5 shows the frequencies based on the responses. There were a total of 17 responses; 4 participants skipped the question. One (4.8%) hospital reported being above the national rate after

implementing all H2H strategies. A total of 13 participants (61.9%) reported being below the national rate after implementing all H2H strategies. A total of three participants (14.3) reported not knowing if their hospitals were above or below the national rate after implementing the H2H. Table 6 shows the mean ± standard deviation. After implementation of the H2H, the RSRRs fell below the national rate (*n*=1, 1.0) to (*n*=13, 2.1 ± .40).

Table 5

RSRR Hospital Performance After Implementing the H2H Initiative

Percentage data is based on the 21 participating hospitals.

Rates	Frequency	Percent
Above the national rate	1	4.8
Below the national rate	13	61.9
Don't know	3	14.3
Skipped	4	19.0
Total	21	100

Table 6

Descriptives of RSRRs after Implementing the H2H for17 of the 21Participating Hospitals

	N	Mean	Std. deviation	Std. error	95% confidence interval for mean		Minimum	Maximum
					Lower Bound	Upper bound		
1.00	1	1.0000					1.00	1.00
2.00	16	2.1875	.40311	.10078	1.9727	2.4023	2.00	3.00
Total	17	2.1176	.45807	.11765	1.8682	2.3670	1.00	3.00

To address the answer to Research Question 1, a one-way ANOVA test was calculated to assess whether there was a significant difference in the reduction of RSRRs after implementing the H2H. The one-way ANOVA test was also used to determine whether there was any significant difference between the means of the groups as it relates to their RSRRs after implementing the H2H. The significance (*P* value) threshold was set at .05. Table 7 shows the $p = .012$. The RSSRs were statistically significantly different for the different hospital groups, for the different groups of hospitals, $F(1, 15) = 8.167$, $p = .012$. Table 7 shows the results of this analysis.

Table 7

Analysis of Variance in Heart Failure RSRRs

Source	Sum of squares	*Df*	Mean square	*F*	Significance
Between groups	1.327	1	1.327	8.167	.012
Within groups	2.438	15	.163		
Total	3.765	16			

Note. The mean difference is significant at the 0.05 level.

Research Question 2

The second research question asked if the number of implemented H2H strategies were associated with a reduction of heart failure RSRRs. Participants answered questions

eight to 48 from the survey that specifically inquired about the strategies used in their hospitals.

To answer Research Question 2, a one-way ANOVA test was calculated to assess whether there was a significance difference between the means of the groups. Out of a total of 30 strategies associated the H2H, 10 strategies resulted in a statistical significance between the means of the groups that had a reduction in heart failure RSRRs. The significance column represents the *p* value which was used to determine whether there was any significant difference between the means of groups. The significance threshold was set at .05.

Table 8 displays the results from the one-way ANOVA for the 10 strategies. The significance values show a p = .0005 for question 8, p = .053 for question 15, p = .015 for question 19, p = .050 for question 24, p = .008 for question 26, p = .048 for question 27, p = 003 for question 38, p = .043 for question 39, p = .001 for question 41, and p = .006 for question 42. Table 8 displays the questions and a report of analysis in a meaning way.

Table 8

Analysis of Variance for the Number of Strategies and Reduced RSSRs

Source	Sum of squares	*Df*	Mean square	*F*	Significance
Question 8					
Between groups	3.438	2	1.260	17.875	.0005
Within groups	2.251	3	.071		
Total	3.438	15			
Question 15	5.083	2	2.542	3.706	.053
Between groups	8.917	13	.686		
Within groups	14.000	15			
Total					
Question 19	3.333	2	1.667	5.909	.015
Between groups	3.667	13	.282		
Within groups	7.000	15			
Total					
Question 24					
Between groups	1.418	2	.709	3.900	.050
Within groups	2.182	12	.182		
Total	3.600	14			
Question 27					
Between groups	6.312	2	3.156	7.637	.008
Within groups	4.545	11	.413		
Total	10.857	13			
Question 28					
Between groups	6.206	2	3.103	3.964	.048
Within groups	9.394	12	.783		
Total	15.600	14			
Question 38					
Between groups	1.067	2	.533	9.600	.003
Within groups	.667	12	.056		
Total	1.733	14			
Question 39					
Between groups	.741	1	.741	5.203	.043
Within groups	1.567	11	.142		
Total	2.308	12			
Question 41					
Between groups	4.114	2	2.057	14.143	.001
Within groups	1.600	11	.145		
Total	5.714	13			
Question 42					
Between groups	1.048	2	.524	8.643	.006
Within groups	.667	11	.061		
Total	1.714	13			

Note. The mean difference is significant at the 0.05 level.

Table 9

All H2H Strategies Associated With a Reduction in RSRRs

Strategies/Questions	Results
8. During a patient's hospitalization is the risk of death estimated in any formal way and used in clinical care?	The risk of death estimated in any formal way and in clinical care score was statistically significantly different for the different hospitals F (2, 13) = 17.875, $p < .0005$.
15. How often is contact made with the primary care physician as part of the medication reconciliation process at your hospital?	The contact made with primary care physicians as part of the medication reconciliation score was statistically different for the different hospitals, F (2, 13) = 3.706, $p < .053$
19. How often are your patients discharged from the hospital with their new medications in hand?	The patient discharged from the hospital with medication in hand score was statistically significantly different for different hospitals, F (2, 13) = 5.909, $p < .015$.
24. Are patients screened by a case manager using explicit criteria to identify post-discharge needs?	The patients screen by a case manager using explicit criteria to identify post-discharge needs score was statistically significant different for different hospitals, F (2, 12) = 3.900, $p < .050$.
27. In what proportion of patients is a paper or electronic discharge summary sent directly to the patient's primary MD?	The proportion of patients directly sent with a paper or electronic discharge summary to their primary care MD score was statistically significant different for the different hospitals F (2, 11) =7.637, $p < .008$.
28. What proportion of patients are cared for by outpatient physicians with access to inpatient electronic records?	The proportion of patient that are cared for by outpatient physicians with access to inpatient electronic records score was statistically significant different for the different hospitals, F (2, 12) = 3.964, $p < .048$.
38. Does your hospital run its own post-discharge clinic in which patients can be seen within 7 days of discharge?	The hospital run its own post-discharge clinic in which patients can be seen within 7 days of discharge score was statistically significant different for the different hospitals, $F(2,12) = 9.600$, $p < .003$.
39. For how many of your patients does your hospital arrange telemonitoring after discharge?	The number of patients that the hospital arranges telemonitoring after discharge score was statistically significantly for the different hospitals, F (1,11) = 5.203, $p <.043$
41. How many of your patients does your hospital enroll in chronic care disease management programs after discharge?	The number of patients that the hospital enroll in chronic care disease management programs after discharge score was statistically significantly different for the different hospitals $F(2,11) = 14.143$, $p < .001$.
42. Is there a physician assigned to coordinate with visiting nurse agencies about recently discharged patients in the post-discharge period?	The physician assigned to coordinate with visiting nurse agencies about recently discharged patients in the post-discharge period score was statistically significantly different for the different hospitals F (2,11) = 8.643, $p < .006$.

Research Question 3

The third research question asked if the categories of H2H strategies were associated with a reduction in heart failure RSRRs. The survey consisted of 30 readmission strategies in five categories: (a) in hospital care, (b) medication reconciliation, (c) patient and family education, (d) transition process, (e) post acute care and support. Table 10 shows the categories and the questions associated with each. Table 11 shows the categories and the number of strategies that were statistically significant in each category.

To answer Research Question 3, a one-way ANOVA test was calculated to assess whether there was a significant difference between the means of the group as it relates to the categories associated with the reduction of heart failure RSRRs. Table 12 shows the actual questions from the post acute and support category and the statistical significant differences. The significance threshold was set at .05. Table 12 shows results noting that statistical significance was found to be $p = .003$ for question 38, $p = .043$ for question 39, $p = .001$ for question 41, and $p = .006$ for question 42. Table 12 shows the questions and a report of analysis in a meaning way.

Table 10

Categories of H2H Strategies and Stratification of Questions

In hospital care	Medication reconciliation	Patient/Family education	Transition process	Post acute care and support
Question numbers	Question numbers	Question numbers	Question numbers	Question numbers
8	15	20	22	31
9	16	21	23	32
10	17		24	33
11	18		25	34
12	19		26	35
13			27	36
14			28	37
			29	38
			30	39
				40
				41
				42
				43
				44
				45
				46
				47

Table 11

Categories and Number of Statistically Significant H2H Strategies

Categories	Number of strategies
In hospital care	1
Medication reconciliation	2
Patient and family education	3
Transition process	3
Post acute care and support	4

Table 12

Post Acute Care/Support H2H Strategies Associated With Heart Failure RSRRs

Strategies/Questions	Results
38. Does your hospital run its own post discharge clinic in which patients can be seen within 7 days of discharge?	The hospitals that run their own post-discharge clinic in which patients can be seen within 7 days of discharge score was statistically significant different for the different hospitals, $F(2,12) = 9.600$, $p < .003$.
39. For how many of your patients does your hospital arrange telemonitoring after discharge?	The number of patients that the hospital arranges telemonitoring after discharge score was statistically significantly for the different hospitals, $F(1,11) = 5.203$, $p <.043$
41. How many of your patients does your hospital enroll in chronic care disease management programs after discharge?	The number of patients that the hospital enroll in chronic care disease management programs after discharge score was statistically significantly different for the different hospitals $F(2,11) = 14.143$, $p < .001$.
42. Is there a physician assigned to coordinate with visiting nurse agencies about recently discharged patients in the post discharge period?	The physician assigned to coordinate with visiting nurse agencies about recently discharged patients in the post-discharge period score was statistically significantly different for the different hospitals $F(2,11) = 8.643$, $p < .006$.

Summary

This chapter began with an overview of the purpose of the study and the data collection procedures. The results were then discussed by providing specific data analyses that answered each research question.

Research Question 1

Is there a reduction in heart failure risk-standardized readmission rates when hospitals implement the Hospital to Home Initiative?

The findings from the data analysis, supports the hypothesis that there is a reduction in heart failure RSRRs when hospitals implement the H2H. Results from the one-way ANOVA confirmed an association with $p = .012$. The heart failure RSRRs were statistically significantly different for the different hospital groups, $F(1, 15) = 8.167$, $p = .012$. The group means were statistically significant different ($p < .012$) and, therefore the null hypothesis has been rejected and the alternative hypothesis has been accepted. There is a reduction in heart failure RSRRs when hospitals implement the H2H.

Research Question 2

Is the number of implemented H2H strategies associated with a reduction in heart failure risk standardized readmission rates for the H2H participating Georgia hospitals?

The findings from the data analysis, supports the hypothesis because 10 out of 30 H2H strategies were are associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospital. These 10 strategies showed statistical significant differences. The group means were all statistically significant different (all p values were $< .05$) and, therefore the null hypothesis has been rejected and the alternative hypothesis

has been accepted. The number of implemented H2H strategies is associated with a reduction in heart failure risk standardized readmission rates for the H2H participating Georgia hospitals.

Research Question 3

Are the categories of strategies associated with a reduction in heart failure RSRR for the H2H participating Georgia hospitals?

The findings from the data analysis, supports the hypothesis that the categories of strategies are associated with the reduction in heart failure RSRRs for the H2H participating Georgia hospitals. The post-acute care linkages and supports category had the most statistically significant strategies that were associated with the heart failure RSRRs in comparison to the other 4 categories. The differences in group means score were all statistically significant (all p values were $< .05$) and, therefore the null hypothesis has been rejected and the alternative hypothesis has been accepted. The categories of strategies are associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals.

The results of this research study will contribute to the lack of data regarding reducing heart failure RSSRs in Georgia. The findings suggest that when the H2H is implemented it can help with reducing heart failure RSSRs. Findings also suggest that the number of strategies implemented and categories of these strategies are associated with reducing heart failure RSSRs in Georgia. Chapter 5 will provide an interpretation of the findings, limitations of the study, and recommendations for future research. The findings will be discussed in manner that extends the knowledge about reducing heart failure

RSRRs by comparing what has been found in the literature review. In addition, Chapter 5 includes a discussion about how this study contributes to positive social change and a conclusion that summarizes the essence of this research study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This chapter is composed of five major sections in which I (a) provide an interpretation of the findings discussed in Chapter 4 with comparisons from the literature review, (b) explain the limitations of the study, (c) provide recommendations for future research studies, (d) describe the study's potential impact for positive social change, and (e) end with a conclusion.

The purpose of this study was to understand the H2H affects heart failure RSRRs among the 35 participating hospitals in Georgia. The nature of the study was quantitative using the H2H Survey to gain information from hospitals about their experience with the H2H and readmission strategies. This study was conducted to increase knowledge about how the implementation of the H2H is affecting heart failure RSSRs and to determine which specific strategies are more closely associated with reducing these rates in Georgia. Furthermore, it is important to mention that since the inception of H2H in 2009, there has been no research to date that has determined its effects of heart failure RSRRs in Georgia. This further contributes to the necessity of this research study.

The key findings of the study suggest that the implementation of the H2H goes far beyond implementing the initiative. It is important to understand which specific strategies and categories are associated with reducing heart failure RSRRs. In addition, the findings suggested that the number of implemented H2H strategies was associated with a reduction in heart failure RSRRs for the H2H participating Georgia hospitals. There were actually 10 out of 30 strategies identified as having an association with reducing heart

failure RSRRs. Understanding which categories of strategies associated with reducing heart failure RSRRs was also important. The post acute care linkages and supports category had the most statistically significant strategies associated with reducing heart failure RSRRs when compared to the other four categories.

Interpretation of Findings

The findings of this research study did extend knowledge beyond what has been observed by other researchers in terms of specific strategies are associated with heart failure RSRRs when the H2H is implemented. Findings from the Bradley et al. (2013) study indicated that six strategies were associated with reducing heart failure RSRRs: (a) collaborating with physicians in the community and physician groups, (b) collaborating with local hospitals, (c) ensuring that nurses assist with medication reconciliation, (d) scheduling follow-up appointments prior to discharge, (e) encouraging hospitals to implement a process to send patients' primary care physicians, and (f) encouraging hospital staff to have follow up with patients about pending lab results postdischarge. Most of these strategies are part of the post acute care linkages and supports category.

The responses by the participants in this study denoted differences regarding the associations between the strategies and heart failure RSSRs and therefore expanded the knowledge base. Findings from this study suggested that there were 10 different strategies associated with reducing heart failure RSRRs:

- estimating the risk of death during the hospitalization and using it in clinical care;

- making contact with patient's primary care physicians as part of the medication reconciliation;
- making sure patients are discharged with new medications;
- having case managers screen patients for post discharge needs;
- sending paper or electronic discharge summaries to patients' primary care physicians;
- making sure that patients cared for by outpatient physicians have access to their electronic medical records;
- having hospitals run their own post discharge clinics for patients to be seen within 7 days of discharge;
- arranging telemonitoring after discharge;
- enrolling patients in chronic care disease management programs after discharge; and
- assigning physicians to coordinate care with visiting nurse agencies about recently discharged patients in the postdischarge period.

It is important to mention that both this research study and the Bradley et al. (2013) study suggest that most of the strategies associated with heart failure RSRRs were part of the post acute care linkages and supports category.

The findings of the study also confirmed what has been observed by other researchers concerning the associations between reducing heart failure RSRRs and postdischarge planning. Researchers have suggested that early physician follow-up appointments post discharge may reduce readmission rates (Hernandez et al., 2010). This

has been proven to be true based on the findings in this study and Hernandez et al. (2010) study. The Hernandez et al. (2010) study also found that patients who had outpatient physician follow-up appointments within seven days post discharge had a lower risk of being readmitted within 30 days. This study found that there was a strong association between hospitals that run postdischarge clinics in which patients could be seen within seven days of discharge and reduced heart failure RSRRs. Similarly, this research study also found an association between reduced heart failure RSSRs when hospitals enrolled patients in chronic care disease management programs after discharge. The findings in this research study suggest that specific H2H readmission strategies are associated with reducing RSRRs in Georgia. These findings are unique and add to what is known about H2H because there are now data that suggest the most beneficial strategies used by hospitals in Georgia. This is important for hospitals because perhaps more emphasis can be placed on implementing these specific strategies, which may lead to a decrease in heart failure RSRRs as well as cost savings.

Limitations of the Study

There were several limitations of this study. The major limitation of this study was the relatively small sample size. A convenience sample of 35 hospitals in Georgia was chosen because these hospitals participated in the H2H. Because 21 out of 35 hospitals participated in the study, the response rate was 60%. For this reason, the findings cannot be generalized to estimate how representative of the population this sample is based on this study alone. Because all of the participants were employees of hospitals, response bias must be considered because they may not have answered the

questions honestly in fear of reporting negative information about their hospital even though confidentiality was explained. Given that most of the respondents were case managers in the hospitals, their responses may not represent the knowledge and experiences of other staff in the hospital. These case managers may have just provided insight based on their personal experiences and knowledge without consulting with other staff.

Recommendations for Future Research

The following recommendations for further research are presented based on the findings in this study. Using another sample design might be useful for increasing the sample size. Perhaps increasing the sample size to include all hospitals in the southeast region of the United States might make it possible to increase the generalizability of the population. Distinguishing the types of hospitals participating in the study might provide additional insight on their implementation of the H2H and their resources. Whether hospitals are publicly or privately owned might have an impact on whether they have adequate staffing to implement and monitor the H2H. Generally, public hospitals are owned and operated based on the government's funding and money. Private hospitals are typically owned by people who manage their own finances. Private hospitals may have more resources to hire additional staff. Lastly, it would be worth investigating whether hospitals provide their staff with specific training on how to implement the H2H Initiative. Based on the literature review in Chapter 2, researchers conducting future studies may want to ask participants about the comorbidities their heart failure patients have because diabetes, COPD, dementia, renal failure, and hypertension have been

associated with heart failure diagnoses. Patients with these comorbidities may have been erroneously admitted with heart failure diagnoses. The literature review also suggests that further research should be sought on the association between the role of emergency departments in hospitals and the reduction of heart failure RSRRs. A study concerning the protocols emergency departments use to admit complex heart failure patients with comorbidities might be beneficial, as physicians make the final decision to admit or not.

Implications for Positive Social Change

The findings from this study may promote positive social change for health care professionals working at the federal, state, and local levels by providing insight on whether the H2H can be used to help in reducing heart failure RSRRs. Moreover, the findings from this study certainly have the potential to promote positive social change in Georgia because the study specifically focused on the hospitals in this state. It may assist hospital administrators and their staff in implementing the 2H strategies that were closely associated with reducing heart failure RSRRs.

The social change implications of this study for health care professionals working on the state and local levels are the most profound. The state of Georgia witnessed a $2.1 billion increase in hospital charges for patients admitted for cardiovascular disease between 2003 and 2010 (Georgia Department of Public Health, 2012). Locally, chief executive officers and chief financial officers in local hospitals face challenges in trying to find strategies to reduce heart failure RSRRs. educing heart failure RSSRs in Georgia would definitely impact the financial state of hospitals by lessening the burdens that are associated with these costly readmissions. Furthermore, the results of this study have

implications for positive social change because the Patient Protection and Affordable Care Act includes financial incentives for hospitals that successfully participate in Hospital Inpatient Quality Reporting programs such as the H2H by reducing readmissions. Perhaps the findings from this study will help hospital administrators to focus on implementing the most effective admission strategies associated with the reduction of heart failure RSRRs.

The implications for positive social change as a result of the findings in this study can essentially impact health care professionals and advocates working on the federal level because reducing heart failure readmissions is a national problem. The United States government spends over $39 billion annually to treat people diagnosed with heart failure, includes outpatient visits, initial hospitalizations and readmissions (Bui, Horwich, & Fonarow, 2010). In 2015 hospital spending is expected to increase by 5.4 % a result of the Affordable Care Act insurance expansions (CMS, 2014). For the period from 2014 to 2024, it is projected that health spending grows 1.1% faster than the gross domestic product (GDP) per year during these years (MS, 2014). This will ultimately result in the expected GDP rising from 17.4 % in 2013 to 19.6 % by 2024 (CMS, 2014). It is clear that the increase in health care spending is sparking many debates because it impacts the whole economy. Perhaps ongoing federal legislation may be considered in regard to reducing health care spending.

Conclusion

In this study, I met my goal of determining whether the H2H is affecting heart failure RSRRs in Georgia. The findings from the study also provide some insight into the

specific strategies and categories that are strongly associated with reducing heart failure RSSRs in Georgia. This is important because the staff of hospitals that are participating in the H2H may gain a better understanding of which strategies are the most effective. This, coupled with financial readmission penalties, should prompt hospitals to be more proactive in reducing their heart failure RSRRs. Although the sample of this study was relatively small, the findings do provide some very valuable information for hospitals. Reducing heart failure RSRRs by accurately identifying the most effective strategies to focus on would help with reducing the health care burden in the United States, but also in improving the economy overall. Hospital administrators may have a better understanding of the H2H is based on the findings of this study and start focusing on the implementation of small changes that will eventually help in reducing heart failure RSRRs and in reducing the costly government penalties associated with readmissions.

References

Aguilar, D., Bozkurt, B., Ramasubbu, K., & Deswal, A. (2009). Relationship of hemoglobin A1C and mortality in heart failure patients with diabetes. *Journal of the American College of Cardiology, 54,* 422-428. doi:10.1016j.jacc.2009.04.049

Alzheimer's Association. (2013) What is dementia? Retrieved from http:// www.alz.org /what-is-dementia.asp

American College of Cardiology. (2011). Hospital to Home. Retrieved from http://www.h2hquality.org/Home/tabid/38/Default.aspx

American Diabetes Association. (2013). Diabetes statistics. Retrieved from http://www.diabetes.org/diabetes-basics/diabetes-statistics/

American Lung Association. (2013). About COPD. Retrieved from http://www.lung.org /lung-disease/copd/about-copd/

Ballard, D., Ogola, G., Fleming, N., Stauffer, B., Leonard, B., Khetan, R., & Yancy, C. (2010). Impact of a standardized heart failure order set on mortality, readmissions, and quality and costs of care. *International Journal for Quality in Health Care, 22,* 437-444.

Barr, V., Robinson, S., Marin-Link, B., Underhill, L., Dotts, A., & Ravensdale, D. (2003). The expanded chronic care model: An integration of concepts and strategies from population health promotion and the chronic care model. *Hospital Quarterly, 7,* 73-82.

Belziti, C., Bagnati, R., Ledesma, P., Vulcano, N., & Fernandez, S. (2010). Worsening renal function in patients admitted with acute decompensated heart: Incidence, risk factors, and prognostic implications. *Revista Espanola de Cardiologia, 63,* 294-302.

Berenson, J., & Shih, A. (2012). Higher readmissions at safety-net hospitals and potential policy solutions. *Common Fund, 34,* 1-16.

Berenson, R., Paulus, R., & Kalman, N. (2012). Medicare's readmission-reduction program: A positive alternative. *New England Journal of Medicine, 366,* 1364-1366.

Blair, J. E., Pang, P., Schrier, R., Metra, M., Traver, B., Cook, T, …Gheorghiade, M. (2011). Changes in renal function during hospitalization and soon after discharge in patients admitted for worsening heart failure in the placebo group of the EVEREST trial. *European Heart Journal, 32,* 2563-2572. doi:10.1093.eurheartj /ehr238

Blecker, S., Paul, M., Taksler, G., Ogedegbe, G., & Katz, S. (2013). Heart failure-associated hospitalizations in the United States. *Journal of the American College of Cardiology, 61,* 1259-1267.

Boudestein, L., Rutten, F., Cramer, M., Lammer, J., & Hoes, A. (2009). The impact of concurrent heart failure on prognosis in patients with chronic obstructive pulmonary disease. *European Journal of Heart Failure, 11,* 1182-1188. doi:10.1093/eurjhf/hfp148

Bradley, E. H., Curry, L., Horwitz, L., Sipsma, H., Thompson, J., Elma, M. … Krumholz, H. M. (2012). Contemporary evidence about hospital strategies for reducing 30-day readmissions. *Journal of the American College of Cardiology, 60,* 607-614.

Bradley, E. H., Curry, L., Horwitz, L., Sipsma, H., Wang, Y., Walsh, M. N., Krumholz, H. M. (2013). Hospital strategies associated with 30-day readmissions rates for patients with heart failure. *Circulation: Cardiovascular Quality and Outcomes, 6,* 444-450.

Bruin, S. R., Heijink, R., Lemmens, L .C., Struijs, J. N., & Baan, C. A. (2011). Impact of disease management programs on healthcare expenditures for patients with diabetes, depression, heart failure, or chronic obstructive pulmonary disease: A systematic review of the literature. *Health Policy, 101,* 105-121. doi:10.1016/jhealthpol.2011.03.006

Bui, A., Horwich, T., & Fonarow, G. (2011). Epidemiology and risk profile of heart failure. *National Review of Cardiology, 8,* 30-41.doi:10.1038/nrcardio.2010.165

Bunch, J. T., Weiss, P., Crandall, B., May, H., Bair, T., Osborn, J., … Day, J. (2010). Atrial fibrillation is independently associated with senile vascular, and Alzheimer's dementia. *Heart Rhythm, 7,* 433-437. doi:1016/j.hrthm.2009.12.004

Butler, J., & Kalogeropoulos, A. (2012). Hospital strategies to reduce heart failure readmissions. *Journal of the American College of Cardiology, 60,* 615-617.

Centers for Disease Control and Prevention. (2010). About high blood pressure. Retrieved from http://www.cdc.gov/bloodpressure.about.htm

Centers for Disease Control and Prevention. (2011). Dementia/Alzheimer's disease. Retrieved from http://www.cdc.gov/mentalhealth/basics/mental-illness/dementia.htm

Centers for Disease Control and Prevention. (2012a). Heart failure fact sheet. Retrieved September 3, 2013, from http://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_heart_failure.htm

Centers for Disease Control and Prevention. (2012b). National chronic kidney disease fact sheet 2010. Retrieved September 4, 2013, from http://www.cdc.gov/diabetes/pubs/Factsheets/kidney.htm

Centers for Disease Control and Prevention. (2013a). About high blood pressure. Retrieved October 5, 2013, from http://www.cdc.gov/bloodpressure/about.htm

Centers for Disease Control and Prevention. (2013b). High blood pressure facts. Retrieved October 5, 2013, from http://www.cdc.gov/bloodpressure/facts/htm

Centers for Disease Control and Prevention. (2013c). Comorbidities. Retrieved December 7, 2013, from http://www.cdc.gov/arthritis/data_statistics/comorbidities.htm

Centers for Medicare and Medicaid Services. (2011a). Medicare hospital quality chartbook 2011. Performance report on readmission measures for acute myocardial Infarction, heart failure and pneumonia. Retrieved from http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Downloads/HospitalChartBook2011.pdf

Centers for Medicare and Medicaid Services. (2011b). Hospital-wide (All Conditions)

30-day risk-standardized readmission measure. Retrieved from https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/MMS/downloads/MMSHospital-WideAll-ConditionReadmissionRate.pdf

Centers for Medicare and Medicaid Services. (2013a). Readmissions reduction program. Retrieved from http://www. http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Readmissions-Reduction-Program.html

Centers for Medicare and Medicaid Services. (2013b). Accountable care organizations. Retrieved from http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/index.html?redirect=/ACO/

Centers for Medicare and Medicaid Services. (2013c). Hospital compare. Retrieved from https://data.medicare.gov/data/hospital-compare

Centers for Medicare and Medicaid Services. (2014). National health expenditure Projections 2014-2024. Retrieved from https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/proj2014.pdf

Coffey, R., Misra, A., Barrett, M., Andrews, R., Mutter, R., & Moy, E. (2012). Congestive heart failure: Who is likely to be readmitted? *Medical Care Research Review, 69,* 602-616.

Coleman, K., Austin, B., Brach, C., & Wagner, H. E. (2009). Evidence on the chronic care model in the new millennium. *Health Affairs, 28,* 75-85. doi: 10.1377/hlthaff.28.1.75

Creswell, J.W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches.* (3 rd ed.). Thousand Oaks, CA: Sage Publications.

Damman, K., Voors, A., Hillege, H., Navis, G. Lechat, P., van Veldhuisen, D., … Dargie, H. (2010). Congestion in chronic systolic heart failure is related to renal dysfunction and increased mortality. *European Journal of Heart Failure, 12,* 974-982. doi:10.1093/eurjh/hfq118

Dardiotis, E., Giamouzis, G., Mastrogiannis, D., Vogiatzi, C., Skoularigis, Triposkiadis, F.,...Hajigeorgiou, G. (2012). Cognitive impairment in heart failure. *Cardiology Research and Practice,* 1-9. doi: 10.1155/2012/595821

Dunlay, S., Redfield, M., Weston, S., Therneau, T., Hall, K., Shah, N., & Roger, V. (2009). Hospitalizations after heart failure diagnosis. *Journal of the American College of Cardiology, 54,* 1695-1702. doi:10.1016/j/acc.2009.08.019

Epstein, M. A., Ashish, K. J. & Orav, E. J. (2011). The relationship between hospital admission rates and rehospitalizations. *The New England Journal of Medicine, 365,* 2287-2295.

Field, A. (2009). *Discovering statistics using SPSS.* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Frankfort-Nachmias, C. & Nachmias, D. (2008). *Research methods in the social sciences.* (7th ed.). New York, NY: Worth Publishers.

Fredericks, S., Beanlands, H., Spalding, K., & Da Silva, M. (2010). Effects of the characteristics of teaching on the outcomes of heart failure patient education

interventions: A systematic review. *European Journal of Cardiovascular Nursing, 9,* 30-37. doi: 10.1016/j.ejcnurse.2009.08.002

Froimson, M., Rana, A., White, R., Marshall, A., Schutzer, S., Healy, W.,…Parsley, B. (2013). Bundled payments for care improvement initiative: The next evolution of payment formulations. *The Journal of Arthoplasty, 28,* 157-165.

Georgia Department of Public Health. (2012). Cardiovascular disease program and data summary. Retrieved from http://www.dph.georgia.gov/cardiovascular-disease-surveillance

Gapenski, L. (2008). *An introduction to accounting and financial management. (*4th ed.). Chicago, IL: Health Administration Press.

Gore, J., Peterson, E., Amin, A., Anderson, F., Dasta, J., Levy, P.,…Granger, C. (2010). Predictors of 90-day readmissions among patients with acute severe hypertension. The cross sectional observational studying the treatment of acute hypertension (STAT) study. *American Heart Journal, 160,* 521-527. doi: 10.1016/jahj.2010.06.032

Group Health Institute. (2012). Edward H. Wagner, MD, MPH. Retrieved from http://www.grouphealthresearch.org/faculty/profiles/wagner.aspx

Guerin, M., Grimmer-Somers, K., Kumar, S., & Dolejs, W. (2012). The discharge of individuals from hospital: Do we need to refocus our research? *Journal of Nursing Education and Practice, 2,* 1-8. doi: 10.5430/jnep.v2n3p1

Hannink, J., van Helvoort, H., Dekhuijzen, R. & Heijdra, Y. (2010).

Heart failure and COPD: Partners in crime? *Respirology, 15,* 895-901. doi:10.1111/j.1440-1843.2010.01776.x

Harrison, P., Hara, P., Pope, J., Young, M., & Rula, E. (2011). The impact of post-discharge telephonic follow-up on hospital readmissions. *Population Health Management, 14,* 27-32. doi:10.1089/pop.2009.0078

Hawkins, N., Jhund, P., Simpson, C., Petrie, M., MacDonald, M., Dunn, F., … McMurray, J. (2010). Primary care burden and treatment of patients with heart failure and chronic obstructive pulmonary disease in Scotland. *European Journal of Heart Failure, 12,* 17-24. doi:10.1093/eurjhp1 60

Hernandez, A., Greiner, M., Fonarow, G., Hammill, B., Heidenreich, P., Yancey, C.,… Curtis, L. (2010). *The Journal of the American Medical Association, 303,* 1716-1722.

Hines, P., Yu, K., & Randall, M., (2010). Preventing heart failure readmissions: Is your organization prepared? *Nursing Economics, 28,* 74-86.

Hospital to Home. (2013). Retrieved from http://www. h2hquality.org/Home/tabid/ 38/Default.aspx

Jack, B., Chetty, V. K., Anthony, D., Greenwald, J., Sanchez, G., Johnson, A.,…Culpepper, L. (2009). A reengineered hospital discharge program to decrease rehospitalization: A random trial. *Annals of Internal Medicine, 150,* 178-187.

Jencks, S., Williams, M., & Coleman, E. (2009). Rehospitalizations among patients in the Medicare fee-for-service programs. *The New England Journal of Medicine, 360,*

1418-1428.

Joynt, K. & Ashish, K, J. (2012). Thirty-day readmissions-truth and consequences. *New England Journal of Medicine, 366,* 1366-1369.

Kadam, U., Uttley, J., Jones, P., & Iqbal, Z. (2013). Chronic disease multimorbidity transitions across healthcare interfaces and associated costs: a clinical-linkage database study. *BMJ Open, 3,* 1-9. doi: 10.1136/bmjopen-2013-003109

Kocher, R., & Adashi, E. (2011). Hospital readmissions and the Affordable Care Act. *Journal of the American Medical Association, 306,* 1794-1795.

Kociol, R. O., Peterson, E. O., Hammill, B., Flynn, K. E., Heidenreich, P. A., Pina, I. L., …Lytle, B.L. (2012). National survey of hospital strategies to reduce heart failure readmissions: Findings from the get with guidelines-heart failure registry. *Circulation: Heart Failure.* Retrieved from http://www.circheartfailure.ahajournals.org/ content/early/2012/08/28/circheartfailure112.967406. doi:10.1161/circheartfailur.112.967406

Kommuri, N., Johnson, M., & Koelling, T. (2010). Six-minute walk distance predicts 30-day readmission in hospitalized heart failure patients. *Archives of Medical Research, 41,* 363-368. doi:10.1016/j.arcmed.2010.07.005

Lanfear, D. E., Peterson, E., Campbell, J., Phatak, H., Wu, D., Wells, K.,… Williams, K. (2011). Relation of worsened renal function during hospitalization for heart failure to long-term outcomes and rehospitalization. *American Journal of Cardiology, 107,* 74-78. doi:10.1016/j.amjcard.2010.08.045

Liu, L. (2011). Changes in cardiovascular hospitalization and comorbidity of heart failure in the United States: Findings from the national hospital discharge surveys 1980-1006. *International Journal of Cardiology, 149,* 39-45. doi:10.1016/j.ijcard.2009.11.037

Maisel, A., Katz, N., Hillege, H., Shaw, A., Zanco, P., Bellomo, …Ronco, C. (2011). Biomarkera in kidney and heart disease. *Nephronology Dialysis Transplantation, 26,* 62-74. doi:10.1093/ndt/gfq647

Mascarenhas, J., Azevedo, A., & Bettencourt, P. (2010). Coexisting chronic obstructive Pulmonary disease and heart failure: implications for treatment, course and mortality. *Current Opinion in Pulmonary Medicine, 16,* 106-111. doi: 10.1097/MCP.obo013e328335dc90

Mudge, A., Denaro, C., Scott, I., Bennett, C., Hickey, A., & Jones, MA. (2010). hospitalized patients with heart failure. *Journal of Hospital Medicine, 5,* 148-153. doi:10.1002/jhm.56

National Institutes of Health. (2011). Hypertension. Retrieved from http: www.nlm.nih.gov/medlineplus/ency/article/000468.htm

National Institute on Aging. (2013). The burden of dementia (2013). Retrieved from http://www.nia.nih.gov/research/publication/longer-lives-and-disability/burden-dementia

Ng, J., Turek, M., & Hakim, A. (2013). Heart disease as a risk factor for dementia. *Clinical Epidemiology, 5,* 135-145.

Pang, P., Jessee, R., Collins, S., & Maisel, A. (2012). Patients with acute heart failure in the emergency department: Do they all need to be admitted? *Journal of Cardiac Failure, 18,* 900-903. doi: 10.1093/eurheart/ehs041

Peacock, F., Amin, A., Granger, C., Pollack, C., Levy, P., Nowak, R.,…Gore, J. (2011). Hypertensive heart failure: patient characteristics, treatment, and outcome. *American Journal of Emergency Medicine, 29,* 855-862. doi:10.1016/j.ajem.2010.03.022

Pressler, S., Subramanian, U., Kareken, S., Gradus-Pizlo, I., Sauve, M., Ding, Y., … Shaw, R. (2010). Cognitive deficits in chronic heart failure. *Nursing Research, 59,* 127-139. doi: 10.1097/NNR.0b013e3181dla747

Ross, J., Chen, J., Lin, Z., Bueno, H., Curtis, J., Keenan, P.,…Krumholz, H.M. (2009). Recent national trends in readmission rates after heart failure hospitalizations. *Journal of the American Heart Association, 3,* 97-103.

Rutten, F., & Hoes, Arno. (2012). Chronic obstructive pulmonary disease: a slowly progressive cardiovascular disease masked by its pulmonary effects? *European Journal of Heart Failure, 14,* 348-350. doi:10.1093/eurjh/h022

Scott, I. (2010). Preventing the rebound: improving care transition in hospital discharge processes. *Australian Health Review, 34,* 445-451.

Ukena, C., Mahfoud, F., Kindermann, M., Kindermann, I., Bals, R., Voors, A.,… Bohm, M. (2010). The cardiopulmonary continuum systemic inflammation as 'common soil' of heart and lung disease. *International Journal of Cardiology, 145,* 172-175. doi:10. 1016./jijcard.2010.04.082

Vaduganathan, M., Bonow, R., & Gheorghiade, M. (2013). Thirty-day readmissions: The clock is ticking. (2013). *Journal of the American Medical Association, 309,* 345-346. doi: 10.1001/jama.2012.205110

Verdiani, V., Lastrucci, V. & Nozzoli, C. (2011). Worsening renal function in patients hospitalized with acute heart failure: risk factors and prognostic significances. *International Journal of Nephrology,* 1-5. doi: 10.4061/2011/785974

Wagner, H. E., Austin, B., Davis, C., Hindmarsh, M., Schaefer, J., & Bonomi, A. (2001). Improving chronic illness care: translating evidence into action. *Health Affairs, 20,* 64-78. doi: 10. 1337/hlthaff.20.6.64

Wang, Y. A., Wai-Kei Lam, C., Hiu-Shuen Chan, I., Wang, M., Lui, A. & Sanderson, J. E. (2010). Sudden cardiac death in end-stage renal disease patients: A 5-year prospective analysis. *Hypertension Journal of the American Heart Association, 56,* 210-216. doi: 10.1161/hypertensionaha.110.115.151167

White, N. (2011). Hospital to home initiative-reviewing the goals and challenges. *US Cardiology, 8,* 84-87.

Wynne, J., Narveson, S., & Littmann, L. (2012). Cardiorenal syndrome. *Heart & Lung, 41,* 157-160. doi: 10.1016/j.hrtlng.2011.06.001

Appendix A: Copy of License

WOLTERS KLUWER HEALTH LICENSE TERMS AND CONDITIONS

Jun 05, 2014

This is a License Agreement between Carisa Sellers ("You") and Wolters Kluwer Health ("Wolters Kluwer Health") provided by Copyright Clearance Center ("CCC"). The license consists of your order details, the terms and conditions provided by Wolters Kluwer Health, and the payment terms and conditions.

All payments must be made in full to CCC. For payment instructions, please see information listed at the bottom of this form.

License Number 3402570044340

License date Jun 05, 2014

Licensed content publisher Wolters Kluwer Health

Licensed content publication Circulation: Cardiovascular Quality and Outcomes

Licensed content title Hospital Strategies Associated With 30-Day Readmission Rates for Patients With Heart Failure

Licensed content author Elizabeth H. Bradley, Leslie Curry, Leora I. Horwitz, Heather Sipsma, Yongfei Wang, Mary Norine Walsh, Don Goldmann, Neal White, Ileana L. Piña, Harlan M. Krumholz

Licensed content date Jul 1, 2013

Volume Number 6

Issue Number 4

Type of Use Dissertation/Thesis

Requestor type Individual

Portion Figures/table/illustration

Number of figures/tables/illustrations

1

Figures/tables/illustrations used

The Hospital to Home Survey

Author of this Wolters Kluwer article

No

Order reference number CAO2841_Christine

Title of your thesis / dissertation

A quantitative cross sectional study: the effects of the hospitals to home initiative on heart failure readmission rates in Georgia

Expected completion date Aug 2014

Estimated size (pages) 81

Billing Type Invoice

Billing address 3522 Louella Lake Court

SNELLVILLE, GA 30039

United States

Page 1 of 3Rightslink Printable License

6/5/2014https://s100.copyright.com/App/PrintableLicenseFrame.jsp?publisherID=130&publisherNa ...

Total 0.00 USD

Terms and Conditions

Terms and Conditions

1. A credit line will be prominently placed and include: for books - the author(s), title of book, editor, copyright holder, year of publication; For journals -the author(s), title of article, title of journal, volume number, issue number and inclusive pages. 2. The requestor warrants that the material shall not be used in any manner which may be considered derogatory to the title, content, or authors of the material, or to Wolters Kluwer. 3. Permission is granted for a one time use only within 12 months from the date of this invoice. Rights herein do not apply to future reproductions, editions, revisions, or other derivative works. Once the 12-month term has expired, permission to renew must be submitted in writing. 4. Permission granted is non-exclusive, and is valid throughout the world in the English language and the languages specified in your original request. 5. Wolters Kluwer cannot supply the requestor with the original artwork or a "clean copy." 6. The requestor agrees to secure written permission from the author (for book material only). 7. Permission is valid if the borrowed material is original to a Wolters Kluwer imprint (Lippincott-Raven Publishers, Williams & Wilkins, Lea & Febiger, Harwal, Igaku-Shoin, Rapid Science, Little Brown & Company, Harper & Row Medical, American Journal of Nursing Co, and Urban & Schwarzenberg - English Language). 8. If you opt not to use the material requested above, please notify Rightslink within 90 days of the original invoice date. 9. Please note that articles in the ahead-of-print stage of publication can be cited and the content may be re-used by including the date of access and the unique DOI number. Any final changes in manuscripts will be made at the time

of print publication and will be reflected in the final electronic version of the issue.?Disclaimer: Articles appearing in the Published Ahead-of-Print section have been peer-reviewed and accepted for publication in the relevant journal and posted online before print publication. Articles appearing as publish ahead-of-print may contain statements, opinions, and information that have errors in facts, figures, or interpretation. Accordingly, Lippincott Williams & Wilkins, the editors and authors and their respective employees are not responsible or liable for the use of any such inaccurate or misleading data, opinion or information contained in the articles in this section. 10. 1This permission does not apply to images that are credited to publications other than Wolters Kluwer journals. For images credited to non-Wolters Kluwer journal publications, you will need to obtain permission from the journal referenced in the figure or table legend or credit line before making any use of the image(s) or table(s). 11. In case of Disease Colon Rectum, Plastic Reconstructive Surgery, The Green Journal, Critical Care Medicine, Pediatric Critical Care Medicine, the American Heart Publications, the American Academy of Neurology the following guideline applies: no drug brand/trade name or logo can be included in the same page as the material re-used 12. When requesting a permission to translate a full text article, Wolters Kluwer/Lippincott Williams & Wilkins requests to receive the pdf of the translated document 13. “Adaptations of single figures do not require Wolters Kluwer further approval if the permission has been granted previously. However, the adaptation should be credited as follows: Adapted with permission from Lippincott Williams and Wilkins/Wolters Kluwer Health: [JOURNAL NAME] (reference citation), copyright (year of publication)”Please note that

modification of text within figures or full-text articles is strictly forbidden. 14. The following statement needs to be added when reprinting the material in Open Access journals only: 'promotional and commercial use of the material in print, digital or mobile device format is prohibited without the permission from the publisher Lippincott Williams & Wilkins. Please contact journalpermissions@lww.com for further information". 15. Other Terms and Conditions:

v1.8

If you would like to pay for this license now, please remit this license along with your Page 2 of 3Rightslink Printable License

6/5/2014https://s100.copyright.com/App/PrintableLicenseFrame.jsp?publisherID=130&publisherNa ...

payment made payable to "COPYRIGHT CLEARANCE CENTER" otherwise you will be invoiced within 48 hours of the license date. Payment should be in the form of a check or money order referencing your account number and this invoice number 501321062. Once you receive your invoice for this order, you may pay your invoice by credit card. Please follow instructions provided at that time.

Make Payment To: Copyright Clearance Center Dept 001 P.O. Box 843006 Boston, MA 02284-3006

For suggestions or comments regarding this order, contact RightsLink Customer Support: customercare@copyright.com or +1-877-622-5543 (toll free in the US) or +1- 978-646-2777.

Appendix B: Hospital to Home Survey

Note: All questions refer to patients with acute myocardial infarction (AMI) or heart failure (HF). Please reflect upon your hospital's quality improvement efforts that are CURRENTLY in place.

Hospital-to-Home (H2H) Survey Instructions

This survey typically takes about 20 minutes to complete. Please note the following:

- **Finish Later** – If unable to complete the survey in a single session, you may save your answers by clicking the "Finish Later" button located at the bottom of each page. You may return to your survey as many times as needed using your ID and password until you complete the survey.
- **Logging Out -** The survey will automatically log you out if left open and idle for more than 30 minutes. You will be required to log back in. Your answers on completed pages of the survey will be saved, but answers on the survey page left open will not be saved and will require re-entry. I suggest using the "Finish Later" button if you need to leave the survey idle for more than 30 minutes.
- **Submit Survey -** When you are satisfied that your survey is complete, click the "Complete" button located on the bottom of the last page. Once completed, you will not be able to return to your survey.
- **Discussion and Collaboration –** with others at the hospital to help answer the questions may be necessary and is welcome.

If you would like to preview the survey questions before proceeding, click on **"Preview Survey",** located in the left column of the Survey Home page. I will be available to assist you via email (carisa.sellers@waldenu.edu) with questions or difficulties.

Thank you very much for your time and participation!

Note: All questions refer to patients with acute myocardial infarction (AMI) or heart failure (HF). Please reflect upon your hospital's quality improvement efforts that are CURRENTLY in place.

I. Organizational support and quality improvement (QI) efforts for reducing readmission rates

1. Reducing preventable readmissions is a written objective for your hospital.

   ○ Strongly agree ○ Agree ○ Not sure ○ Disagree ○ Strongly disagree

2. Does your hospital have any quality improvement teams devoted to reducing preventable readmissions for the following types of patients?

   a. Patients with heart failure ○ Yes ○ No

   b. Patients with acute myocardial infarction ○ Yes ○ No

If "No" to both, skip to #4

3. Please indicate who belongs to any of the quality improvement teams devoted to reducing readmission rates

	QI team members for team focusing on readmission for patients with HF			**QI team members for team focusing on readmission for patients with AMI**		
	Yes	No	Don't	Yes	No	Don't

			know			know
a. Senior management of the hospital						
	QI team members for team focusing on readmission for patients with HF			**QI team members for team focusing on readmission for patients with AMI**		
b. Hospital governing board members						
c. Physicians						
d. Advanced practice nurses or physician assistants						
e. Nurses						
f. Pharmacists						
g. Social workers and/or case managers						
h. Quality Improvements/Quality Management staff						
i. Patient or family						

representatives						
j. Others, specify:						

Note: All questions refer to patients with acute myocardial infarction (AMI) or heart failure (HF). Please reflect upon your hospital's quality improvement efforts that are CURRENTLY in place.

II. Participation in readmission collaboratives or campaigns

4. For each of the following please indicate if your hospital participates in any of the collaborative or campaigns.

   a. State Action on Avoidable Rehospitalizations (STAAR)/IHI

      ○ Yes ○ No ○ Don't know

   b. Interventions to reduce acute care transfers (INTERACT)

      ○ Yes ○ No ○ Don't know

   c. Centers for Medicare & Medicare/Quality Improvement Organizations Care Transitions Project

      ○ Yes ○ No ○ Don't know

   d. Better Outcomes for Older Adults through Safe Transitions (BOOST)/Society for Hospitalist Medicine

      ○ Yes ○ No ○ Don't know

e. Project Reengineered Discharge (RED)

○ Yes ○ No ○ Don't know

f. Hospital-to-Home (H2H)

○ Yes ○ No ○ Don't know

g. Care Transitions Intervention (Coleman)

○ Yes ○ No ○ Don't know

h. Transitional Care Model (Naylor)

○ Yes ○ No ○ Don't know

i. University Health Systems Consortium collaborative

○ Yes ○ No ○ Don't know

j. State hospital association collaborative

○ Yes ○ No ○ Don't know

k. Local or regional collaborative

○ Yes ○ No ○ Don't know

l. Others (please specify) _____

III. Systems to reduce readmissions

<u>In-Hospital Care</u>

5. During a patient's hospitalization, is the risk of death estimated in any formal way and also used in clinical care? ○ Yes ○ No

5a. If Yes, how? _____

6. During a patient's hospitalization, is the risk of readmission estimated in any formal way and also used in clinical care? ○ Yes ○ No

6a. If Yes, how? _____

Note: All questions refer to patients with acute myocardial infarction (AMI) or heart failure (HF). Please reflect upon your hospital's quality improvement efforts that are CURRENTLY in place.

7. Does your hospital have a multidisciplinary team to manage the care of patients who are at high risk of readmission? ○ Yes ○ No

8. Does your hospital have a reliable process in place to identify patients with heart failure at the time they are admitted? ○ Yes ○ No

9. Does your hospital have a reliable process in place to identify patients with acute MI at the time they are admitted? ○ Yes ○ No

10. What proportion of your patients with AMI have a cardiologist involved in their care?

○ All ○ Most ○ Some ○ None

11. What proportion of your patients with HF have a cardiologist involved in their care?

○ All ○ Most ○ Some ○ None

Medication Reconciliation

12. How often does each of the following occur as part of the medication reconciliation process at your hospital?

a. Emergency medicine staff obtains medication history

○ Always ○ Usually ○ Sometimes ○ Never

Note: All questions refer to patients with acute myocardial infarction (AMI) or heart failure (HF). Please reflect upon your hospital's quality improvement efforts that are CURRENTLY in place.

b. Admitting medical team obtains medication history

○ Always ○ Usually ○ Sometimes ○ Never

c. Pharmacist or pharmacy technician obtains medication history

○ Always ○ Usually ○ Sometimes ○ Never

d. Contact is made with outside pharmacies

○ Always ○ Usually ○ Sometimes ○ Never

e. Contact is made with primary physician

○ Always ○ Usually ○ Sometimes ○ Never

f. Outpatient and inpatient prescription records are linked electronically

○ Always ○ Usually ○ Sometimes ○ Never

g. We subscribe to third party prescription database that provides historical fill and refill information (e.g., Health Care Systems)

○ Always ○ Usually ○ Sometimes ○ Never

h. Other (specify): _____

Note: All questions refer to patients with acute myocardial infarction (AMI) or heart failure (HF). Please reflect upon your hospital's quality improvement efforts that are CURRENTLY in place.

13. What tools are in place to facilitate medication reconciliation at your hospital? (Check all that apply)

○ Paper-based standardized form ○Web-based tool ○Form/tool built into electronic medical record ○ No standardized form or tool is used for medication reconciliation

○ Other, specify: _____

14. Who is responsible for conducting medication reconciliation at discharge?

a. Discharging physician, physician assistant or nurse practitioner

○ Always ○ Usually ○ Sometimes ○ Never

b. Nurse

○ Always ○ Usually ○ Sometimes ○ Never

c. Pharmacist

○ Always ○ Usually ○ Sometimes ○ Never

d. Responsibility is not formally assigned

○ Always ○ Usually ○ Sometimes ○ Never

e. Other (specify): _____

Note: All questions refer to patients with acute myocardial infarction (AMI) or heart failure (HF). Please reflect upon your hospital's quality improvement efforts that are CURRENTLY in place.

15. Is it a component of the discharge process to ask patients whether they can afford their medications?

○ Yes, for all patients ○ Yes, for some patients and/or for certain medications

○ No, not routine

16. How often are your patients discharged from the hospital with their new medications in hand?

○ Always ○ Usually ○ Sometimes ○ Never

Patient/Family Education

17. Does your hospital promote the use of teach-back techniques (having the patient "teach" new information back to the educator) for patient and family education?

○ Yes ○ No

18. What proportion of PATIENTS OR THEIR CAREGIVERS receive each of the following in written form at the time of discharge?

a. Discharge instructions

○ All ○ Most ○ Some ○ None

b. Discharge summary

○ All ○ Most ○ Some ○ None

Note: All questions refer to patients with acute myocardial infarction (AMI) or heart failure (HF). Please reflect upon your hospital's quality improvement efforts that are CURRENTLY in place.

c. Educational information about heart failure, when relevant

○ All ○ Most ○ Some ○ None

d. Educational information about AMI

○ All ○ Most ○ Some ○ None

e. Action plan for patients with heart failure to help them manage changes in condition

○ All ○ Most ○ Some ○ None

f. Personal health record (e.g., list of diagnoses, allergies, medications, physicians, contact information)

○ All ○ Most ○ Some ○ None

g. Names, doses, and frequency of all discharge medications

○ All ○ Most ○ Some ○ None

h. The purpose of each medication

○ All ○ Most ○ Some ○ None

i. Information about which medications are new

○ All ○ Most ○ Some ○ None

Note: All questions refer to patients with acute myocardial infarction (AMI) or heart failure (HF). Please reflect upon your hospital's quality improvement efforts that are CURRENTLY in place.

j. Information about which medications have changed in dose or frequency

○ All ○ Most ○ Some ○ None

k. Information about which medications are to be stopped

○ All ○ Most ○ Some ○ None

l. The signs or symptoms that should prompt an immediate call to a physician or a return to the hospital

○ All ○ Most ○ Some ○ None

m. Direct contact information for a specific physician to contact in case of emergency

○ All ○ Most ○ Some ○ None

n. Any other type of emergency plan

○ All ○ Most ○ Some ○ None

Transition Process

19. Are all patients screened by a case manager using explicit criteria to identify post-discharge needs? ○ Yes ○ No

Note: All questions refer to patients with acute myocardial infarction (AMI) or heart failure (HF). Please reflect upon your hospital's quality improvement efforts that are CURRENTLY in place.

20. On the day of discharge, do patients leave the hospital with an outpatient follow-up appointment already arranged?

○ Always ○ Usually ○ Sometimes ○ Never

21. Is there a reliable process in place to ensure outpatient physicians are alerted to the patient's admission within 24 hours of admission?

○ Yes ○ No

22. Is there a reliable process in place to ensure outpatient physicians are alerted to the patient's discharge within 48 hours of discharge?

○ Yes ○ No

23. How quickly is a patient's discharge summary typically completed and available for viewing?

○ On discharge Or Within 48 hours of discharge

○ Within 7 days

○ Within 30 days

○ There are no explicit goals or policies defining a time-frame for completing the discharge summary

24. In what proportion of patients is a paper or electronic discharge summary sent directly to the patient's primary MD?

○ All ○ Most ○ Some ○ None

Note: All questions refer to patients with acute myocardial infarction (AMI) or heart failure (HF). Please reflect upon your hospital's quality improvement efforts that are CURRENTLY in place.

25. What proportion of patients are cared for by outpatient physicians with access to inpatient electronic records?

○ All ○ Most ○ Some ○ None

26. Is there someone within the hospital assigned to follow up on test results that return after the patient is discharged?

○ Yes ○ No

27. Is there a process in place to ensure pending test results are listed in the discharge?

summary?

○ Yes ○ No

Post-acute care linkages and supports

28. Has your hospital partnered with community home care agencies and/or skilled nursing facilities to reduce readmission rates?

○ Yes ○ No

29. Has your hospital partnered with community physicians or physician groups to reduce readmission rates?

○ Yes ○ No

30. Has your hospital partnered with other local hospitals to reduce readmission rates?

○ Yes ○ No

31. Does your hospital regularly call patients after discharge to either follow up on post- discharge needs or to provide additional education?

○ Yes ○ No

If no, skip to #34

Note: All questions refer to patients with acute myocardial infarction (AMI) or heart failure (HF). Please reflect upon your hospital's quality improvement efforts that are CURRENTLY in place.

32. How long after discharge does your hospital regularly call patients? (Check all that apply, if multiple calls are made)

○ Within 48 hours of discharge

○ Within 1 week of discharge

○ Within 2 weeks of discharge

○ Within a month of discharge

33. Who conducts the calls? (Check all that apply)

○ Clerical staff

○ Care coordination/social work staff

○ Nurses

○ Pharmacist

○ Physician

○ Other, specify: _____

34. For how many of your patients does your hospital arrange home visits after discharge? ○ All Patients ○ Most ○ Some ○ None

35. Does your hospital run its own post-discharge clinic in which patients can been seen within 7 days of discharge? ○ Yes ○ No

36. For how many of your patients does your hospital arrange telemonitoring after discharge? ○ All Patients ○ Most ○ Some ○ None

37. How many of your patients with AMI does your hospital refer to cardiac rehabilitation after discharge?

○ All Patients ○ Most ○ Some ○ None

Note: All questions refer to patients with acute myocardial infarction (AMI) or heart failure (HF). Please reflect upon your hospital's quality improvement efforts that are CURRENTLY in place.

38. How many of your patients does your hospital enroll in chronic care disease management programs after discharge?

○ All Patients ○ Most ○ Some ○ None

39. Is there a physician assigned to coordinate with visiting nurse agencies about recently discharged patients in the post-discharge period?

○ Yes ○ No

40. For patients discharged with home health services, does your hospital provide direct contact information for a specific inpatient physician to contact in case of questions? ○ Yes ○ No

For the following questions, please consider patients who are transferred to skilled nursing facilities:

41. Does your hospital conduct a nurse-to-nurse report prior to transfer?

○ Always ○ Usually ○ Sometimes ○ Never

42. Does your hospital send a completed discharge summary with the patient?

○ Always ○ Usually ○ Sometimes ○ Never

43. Does your hospital send a reconciled medication list with the patient?

○ Always ○ Usually ○ Sometimes ○ Never

Note: All questions refer to patients with acute myocardial infarction (AMI) or heart failure (HF). Please reflect upon your hospital's quality improvement efforts that are CURRENTLY in place.

44. Does your hospital send a medication administration record with the patient?

○ Always ○ Usually ○ Sometimes ○ Never

45. Does your hospital provide a direct contact number to reach the inpatient treating physician?

○ Always ○ Usually ○ Sometimes ○ Never

IV. Measures and tracking

46. Does your hospital have a designated person or group to review unplanned readmissions that occur within 30 days of the original discharge? ○ Yes

○ No [If NO, skip to #48]

47. How long after the unplanned readmission are cases typically reviewed?

○ Within one week of the readmission

○ Within one month of the readmission

○ Within 3 months of the readmission

○ Other (please specify) _____

○ We do not have a set timeframe for reviewing readmissions

48. Which of the following does your hospital track for quality improvement efforts?

a. Timeliness of discharge summaries ○ Yes ○ No

b. Proportion of discharge summaries that are sent to primary physician

○ Yes ○ No

c. Percent of patients discharged with a follow-up appointment

○ Yes ○ No

d. Percent of patients discharged with a follow-up appointment within 7 days

○ Yes ○ No

e. Accuracy of medication reconciliation ○ Yes ○ No

f. Content of discharge instructions ○ Yes ○ No

g. 30-day readmission rate ○ Yes ○ No

h. Early (<7 day) readmission rate ○ Yes ○ No

i. Proportion of patients readmitted to another hospital ○ Yes ○ No

j. Other, specify: _____

49. Please indicate your primary role in the hospital, check all that apply:

○ Quality improvement, quality management, quality assurance, performance management

○ Case management/care coordination/social work/discharge planning

○ Cardiology

○ Other clinical role

○ Other non-clinical role

Appendix C: Invitational Email

Hello Colleague:

I would like to you invite you to participate in my research study titled "A Quantitative Cross-Sectional Study: The Effect of the Hospital to Home Initiative on Heart Failure Readmission Rates in Georgia." I am presently a doctoral student at Walden University working to complete a Doctor of Health Care Administration degree. The purpose of this study is to determine if the Hospital to Home Initiative is significantly reducing heart failure risk-standardized readmission rates in Georgia. If you agree to participate in the study, you will be asked to complete a questionnaire that typically takes about 20 minutes to complete. The results of this study will be beneficial for your organization because it may help with reducing costly heart failure readmissions, which will eventually lead to cost savings. Moreover, these results may help your organization with creating or enhancing heart failure readmission reduction strategies. You will receive a complimentary summary of my research results once the study is completed. The confidentiality of your organization will be maintained at all times. There are no perceived risks to you or your organization for participating in this study. Your organization will be assigned a unique link through Survey Monkey that will allow you to have access to the survey. This will ensure and protect your confidentiality. Please see the attached consent form with the survey link at the bottom of the form. Please contact me if you have any problems accessing the link for the survey at carisa.sellers@waldenu.edu. Your participation is greatly appreciated.

Sincerely,

Carisa Sellers

Appendix D: Consent Form

You are invited to take part in a research study about how the Hospital to Home Initiative is affecting heart failure risk-standardized readmission rates in Georgia. You have been invited to participate in this study because your hospital is presently participating in the Hospital to Home Initiative. Please note that you must familiar with the Hospital to Home Initiative in order to participate in this study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is conducted by a researcher named Carisa Sellers, who is a doctoral student at Walden University.

Background Information:

The purpose of this study is to determine if the Hospital to Home Initiative is significantly reducing heart failure risk-standardized readmission rates in Georgia.

Procedures:

If you agree to be in this study, you will be asked to:

- Complete only one survey that typically takes about 20 minutes

Voluntary Nature of the Study:

This study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. No one at the American College of Cardiology will treat you

differently if you decide not be in the study. If you decide to join the study now, you can still change your mind later. You may stop at any time with no penalty.

Risks and Benefits of Being in the Study:

Being in this study will not pose risk to your safety or well-being.

The results of this study will be beneficial for your hospitals because it may help with reducing costly heart failure readmissions, which will eventually lead to cost savings. Also, it may help your hospital with creating or enhancing heart failure readmission reduction strategies.

Payment:

There will be no compensation for your participation in this study. You will receive a complimentary summary of the survey results once the study is completed.

Privacy:

Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure by using my personal computer that has password protection. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions:

You may ask any questions you have now. Or if you have questions later, you may contact the researcher via email carisa.sellers@waldenu.edu. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 612-312-

1210. Walden University's approval number for this study is 03-02-15-0264860 and it expires on March 1, 2016.

Please print or save this consent form for your records.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By completing this on-line survey, I understand that I am consenting.

https://www.surveymonkey.com/s/F7SBXXP

Appendix E: Follow-Up Email

Hello Colleague:

I just wanted to follow up with you in regards to completing the Hospital to Home Initiative Survey. Please see the attached consent form with the survey link at the bottom of the form. Please contact me if you have any problems accessing the link for the survey at carisa.sellers@waldenu.edu. Your participation is greatly appreciated. Do you need any further information from me? Please let me know if there is anything I can do to help. Thank you in advance for taking time out of your busy schedule to help me with my research study.

Sincerely,

Carisa Sellers

Appendix F: Thank You Email

Hello Colleague:

I would like to thank you for your participation in my research study on the Hospital to Home Initiative. I appreciate you taking time out of your busy schedule to complete the survey. As promised, I will be sending you a complimentary summary of the research results soon.

Sincerely,

Carisa Sellers

Appendix G: IRB Approval Letter

Dear Ms. Sellers,

This email is to notify you that the Institutional Review Board (IRB) has approved your application for the study entitled, "A Quantitative Cross-Sectional Study: The Effect of the Hospital to Home Initiative on Heart Failure Readmission Rates in Georgia."

Your approval # is 03-02-15-0264860. You will need to reference this number in your dissertation and in any future funding or publication submissions. Also attached to this e-mail is the IRB approved consent form. Please note, if this is already in an on-line format, you will need to update that consent document to include the IRB approval number and expiration date.

Your IRB approval expires on March 1, 2016. One month before this expiration date, you will be sent a Continuing Review Form, which must be submitted if you wish to collect data beyond the approval expiration date.

Your IRB approval is contingent upon your adherence to the exact procedures described in the final version of the IRB application document that has been submitted as of this date. This includes maintaining your current status with the university. Your IRB approval is only valid while you are an actively enrolled student at Walden University. If you need to take a leave of absence or are otherwise unable to remain actively enrolled, your IRB approval is suspended. Absolutely NO participant recruitment or data collection may occur while a student is not actively enrolled.

If you need to make any changes to your research staff or procedures, you must obtain IRB approval by submitting the IRB Request for Change in Procedures Form. You will receive confirmation with a status update of the request within 1 week of submitting the change request form and are not permitted to implement changes prior to receiving approval. Please note that Walden University does not accept responsibility or liability for research activities conducted without the IRB's approval, and the University will not accept or grant credit for student work that fails to comply with the policies and procedures related to ethical standards in research.

When you submitted your IRB application, you made a commitment to communicate both discrete adverse events and general problems to the IRB within 1 week of their occurrence/realization. Failure to do so may result in invalidation of data, loss of academic credit, and/or loss of legal protections otherwise available to the researcher.

Both the Adverse Event Reporting form and Request for Change in Procedures form can be obtained at the IRB section of the Walden website:

http://academicguides.waldenu.edu/researchcenter/orec

Researchers are expected to keep detailed records of their research activities (i.e., participant log sheets, completed consent forms, etc.) for the same period of time they retain the original data. If, in the future, you require copies of the originally submitted IRB materials, you may request them from Institutional Review Board.

Both students and faculty are invited to provide feedback on this IRB experience at the link below:

http://www.surveymonkey.com/s.aspx?sm=qHBJzkJMUx43pZegKlmdiQ_3d_3d

Sincerely,

Libby Munson

Research Ethics Support Specialist

Office of Research Ethics and Compliance

Email: irb@waldenu.edu

Fax: 626-605-0472