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Evidence-Based Diabetic Discharge Guideline: A Standardized Initiative to Promote Nurses' Adherence

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EVIDENCE-BASED DIABETIC DISCHARGE GUIDELINE: A STANDARDIZED
INITIATIVE TO PROMOTE NURSES' ADHERENCE

Presented in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Nursing Practice

Nova Southeastern University
Health Professions Division
College of Nursing

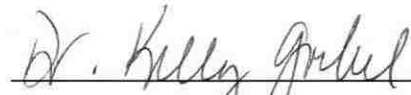
Marjorie V. Scarlett
2017

**NOVA SOUTHEASTERN UNIVERSITY
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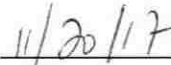
This project, written by Marjorie V. Scarlett under direction of Dr. Kelly Goebel, Project Chair, and approved by members of the project committee, has been presented and accepted in partial fulfillment of requirements for the degree of

DOCTOR OF NURSING PRACTICE

PROJECT COMMITTEE



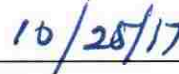
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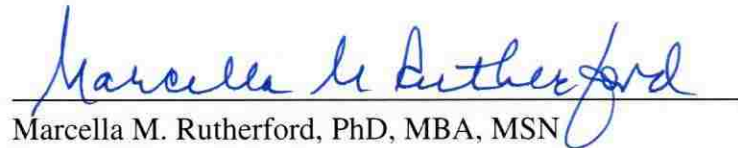
We hereby certify that this capstone project, submitted by Marjorie V. Scarlett, conforms to acceptable standards and is fully adequate in scope and quality to fulfill the project requirement for the Doctor of Nursing Practice degree.

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Abstract

Background: Diabetes mellitus (DM) affects more than 29.1 million Americans. Standardized clinical practice guidelines recommended by regulatory healthcare agencies are the standard of care for diabetic patients and must be adhered to by healthcare professionals providing care.

Purpose: The purpose of this quality improvement project was to identify Centers for Medicare and Medicaid Services', Joint Commission on Accreditation of Healthcare Organization, and other professional healthcare organizations' guidelines for nurses' knowledge of evidence-based discharge practices; determine level of nurses' knowledge on evidence-based discharge practice process; develop a quality improvement plan, including development of an evidence-based guideline for diabetic discharge instructions; present guideline to stakeholders; implement the guideline in fall of 2017; and evaluate nursing compliance with the guideline at a for-profit adult care hospital in South Florida.

Theoretical Framework: The chronic care model was utilized as the framework. This model has been used for improving practice and preventing many chronic illnesses.

Methods: Two quantitative nonparametric descriptive designs were used, the Wilcoxon signed-rank test and a paired t test. An online demographic survey and pre- and posttest surveys were administered to determine nurses' knowledge of diabetes discharge guideline practices. The Appraisal of Guidelines for Research and Evaluation II (AGREE II) evaluation tool evaluated the guideline, and data were analyzed with Wilcoxon and paired t tests.

Results: A statistically significant difference was found in the pre-posttest survey responses for question 5 ($p = 0.046$ Wilcoxon; $p = 0.041$ t test), and question 13 ($p =$

0.022 Wilcoxon; $p = 0.018$ t test), indicating improvement. With the AGREE II tool, the multidisciplinary team evaluated the guideline at 100%, and 76% of Advanced Practice Registered Nurses (APRNs) and Registered Nurses (RNs) demonstrated compliance with guideline use.

Conclusion: A standardized diabetic discharge guideline incorporated into the hospital's discharge process provided APRNs and RNs with tools for educating and providing diabetic patients for increase in quality of life after discharge. The guideline was recommended by the administrative team for continued use throughout the hospital. Implementation of an evidence-based standardized diabetic discharge guideline to promote nurses' adherence results in effective nursing practices and an informed patient population.

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Table of Contents

Title Page.....	i
Signature Pages.....	ii
Copyright.....	iv
Abstract.....	v
Acknowledgments.....	vii
Table of Contents.....	ix
List of Tables.....	xi
Chapter 1: Nature of Project and Problem Identification.....	1
Problem Statement.....	4
Purpose Statement.....	4
Project Objectives.....	4
Theoretical Foundation.....	5
Chronic Care Model.....	5
Application of CCM.....	7
Health System Organization of Healthcare.....	7
Delivery System Design.....	8
Self-Management Support.....	8
Decision Support.....	9
Clinical Information System.....	9
Community Resources and Policies.....	10
Significance of the Project.....	10
Nursing Practice.....	11
Healthcare Outcomes.....	12
Healthcare Delivery.....	12
Healthcare Policy.....	13
Summary.....	14
Chapter 2: Review of the Literature.....	16
Literature Search.....	17
Benefits of Standardized Discharge Guidelines.....	17
Incorporation of Guidelines in Clinical Practice.....	19
Successful Discharge Innovations Using Standardized Guidelines.....	20
Incorporation of the Chronic Care Model in the Discharge Process.....	21
Summary.....	22
Chapter 3: Methods.....	23
Project Design.....	24
Sample/Population.....	25
Instruments and Data Analysis.....	25
Problem Statement.....	26
Purpose of the Project.....	26
Project Setting.....	26
Inclusion Criteria.....	27
Exclusion Criteria.....	27
Ethical Considerations.....	27
Project Phases/Objectives.....	28

Timeline	30
Resources/Budget	30
Outcome Measures.....	31
Summary.....	33
Chapter 4: Results and Discussion.....	34
Demographics	35
Results: Objectives 1 and 2.....	37
Results: Objectives 3, 4, and 5.....	40
Discussion of Findings.....	43
Objective 1.....	43
Objective 2.....	43
Objective 3.....	44
Objective 4.....	44
Objective 5.....	45
Expected and Unexpected Findings.....	45
Strengths and Limitations	46
Implications for Practice	47
Healthcare Outcomes.....	47
Healthcare Delivery.....	48
Healthcare Policy.....	48
Future Research	49
Summary	50
References.....	51
Appendix A. Nova Southeastern University Institutional Review Board	
Exemption Letter	57
Appendix B. Letter of Approval and Support.....	58
Appendix C. Flyer.....	59
Appendix D. Adult Informed Consent.....	60
Appendix E. Demographic Form.....	62
Appendix F. SurveyMonkey Prequestionnaire.....	63
Appendix G. SurveyMonkey Postquestionnaire.....	66
Appendix H. Evidence-Based Diabetic Discharge Guideline	69
Appendix I. AGREE II Evaluation Tool.....	71
Appendix J. Additional Tables	73

List of Tables

Table 1. Project Resources and Budget	31
Table 2. Nursing Demographic Characteristics	35
Table 3. General Demographic Characteristics and Familiarity With Procedures	36
Table 4. Responses for Pretest Survey.....	38
Table 5. Responses for Posttest Survey	39
Table 6. Summary of AGREE II Responses.....	41
Table J1. Descriptive Statistics of Responses for Pretest and Posttest Surveys	73
Table J2. Responses by Item to AGREE II Tool.....	74

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Chapter 1

Nature of Project and Problem Identification

The effect of diabetes mellitus (DM) on the United States adult population is on the increase and is expected to reach 33% by 2050 (Salamah et al., 2011). Affecting more than 29.1 million Americans, this chronic medical condition, which is poorly controlled primarily by African-Americans, constitutes a major part of the hospital inpatient population, approximately 5% to 14% of all readmissions (Centers for Disease Control and Prevention [CDC], 2014). Providing effective and efficient evidence-based diabetic education and discharge instructions has been a significant problem for healthcare professionals in hospitals across the nation (Krall, Donihi, Hatam, Koshinsky, & Siminerio, 2016; Young, 2011). This problem could be a result of noncompliance with accepted discharge instructions by healthcare organizations nursing professionals. Diabetes discharge planning is a national priority, and therefore advanced practice registered nurses (APRNs) and registered nurses (RNs) must adhere to standardized practices set forth by regulatory agencies in providing care for diabetics.

Horwitz et al. (2013) reported that the patient transitioning process from hospital to home requires tasks of coordination of care with the outside, and nurses should provide education to patients through the use of standardized practices. APRNs and RNs who

provide care to this patient population must be educated and updated on the appropriate implementation of recommended guidelines for delivery of evidence-based management and care. Nettles (2005) observed that discharge information that it is of optimal standards and is mandated by regulatory agencies makes inpatient education essential.

Failure to acknowledge DM at discharge and failure to utilize standardized guidelines practices are associated with increased hospital 30-day readmission rates, as well as increased adverse events, such as medication errors after discharge, especially among African American and Hispanic populations. Thus, effective evidence-based standardized diabetic teaching and management are important factors for successful transition of care from hospital to home (Healy, Black, Harris, Lorenz, & Dungan, 2013). Discharge planning begins upon admission and must be structurally tailored to each patient (American Diabetes Association [ADA], 2016); Graham, Gallagher, & Bothe, 2013). Therefore, it is evident that providing healthcare professionals with the education necessary to increase compliance and plan the discharge process may have significant effects on decreasing hospital stays and readmissions in this patient population.

Saccomano (2014) reported that although scientific advancement has taken place in the management of DM, it continues to cause frequent hospital readmissions for various reasons. Elixhauser and Steiner (2013) stated that one-half million diabetics are hospitalized per year, with a 30-day hospital readmission rate of 20.3%, almost 100,000.00 patients. This readmission rate has a large impact on the cost of healthcare to the nation as well as quality of care (Dungan, 2012). Risk factors which increase readmission rates include but are not limited to poor health literacy, which includes a lack of knowledge on the disease and the process; failure of the healthcare system, which

includes the discharge process and support of the patient after discharge; inability to follow the discharge instructions; lack of assistance at home after discharge; and the inability to maintain control over the disease (Rubin, Donnell-Jackson, Jhingan, Golden, & Anuradha, 2014). As a result, and with current healthcare reform changes, development of an evidence-based quality improvement project assists APRNs and RNs to prepare patients for the discharge process. This development also assists in improving quality of life after discharge and increasing patients' compliance with treatment (Ametlli, 2011).

Diabetes affects many patients and evidence-based practice guides the management of this patient population. However, statistically the African-American population is more at risk for complications of this disease than the general population (American Diabetes Association [ADA], 2014). Kim, Ross, Melkus, Zhao, and Boockvar (2010) observed that with a better and more effective diabetic discharge planning process in place, nurses will better adhere to measures that will increase the service provided and prevent unnecessary, avoidable readmissions to hospitals. In 2010, the cost of service and care for diabetics readmitted to hospital accounted for 55.2% of total hospital stay, with average total cost for readmitted patients 2.5 higher than those without readmission (Kim et al., 2010). Therefore, creation of a quality improvement evidence-based diabetic discharge guideline for utilization by nurses results in the delivery of standardized practices for hospitalized patients.

Problem Statement

Currently, there is an absence of a standardized evidence-based diabetic discharge guideline at a for-profit acute care hospital in South Florida. This absence has affected nursing practice and prohibited practice adherence by APRNs and RNs at the hospital.

Purpose Statement

The purpose of this quality improvement project was to identify Centers for Medicare and Medicaid Services (CMS), Joint Commission on Accreditation of Healthcare Organization (JCAHO), and other professional healthcare organizations' guidelines as they relate to nurses' knowledge relating to evidence-based discharge practices; to determine level of nurses' knowledge relating to evidence-based discharge practice process; to develop a quality improvement plan which included the development of an evidence-based guideline for nurse-driven diabetic discharge instructions; to present the guideline to stakeholders; to implement the diabetic discharge guideline in fall of 2017; and to evaluate nursing compliance with the evidence-based practice discharge guideline at a for-profit adult care hospital in South Florida.

Project Objectives

The project objectives were the following:

1. Identify CMS, JCAHO, and other professional healthcare organizations' guidelines as they relate to nurses' diabetic discharge instructions.
2. Determine level of nurses' knowledge relating to evidence-based discharge practice process.

3. Develop a quality improvement plan which included the development of an evidence-based guideline for nurse-driven diabetic discharge instructions.
4. Present guideline to stakeholders and implement diabetic discharge guideline in fall of 2017.
5. Evaluate nursing compliance with evidence-based practice discharge guideline.

Theoretical Foundation

The theoretical framework selected for this capstone project was the chronic care model (CCM), which focuses on providing high quality care and education in a timely manner to patients with chronic illnesses, such as diabetes mellitus.

Chronic Care Model

The chronic care model, designed approximately a decade ago, has been used as a framework for improving practice and as a preventative method in the improvement of a variety of chronic illnesses (Institute for Healthcare Improvement, 2013). These illnesses include DM, depression, and heart disease in and out of the healthcare setting (Dancer & Courtney, 2010). Employed to effectively guide treatment of patients with chronic illnesses, this theory has been found to be successful in increasing knowledge, decreasing morbidity and mortality, and hospital costs of treatment (Oprea, Braunack-Meyer, Rogers, & Stocks, 2010). CCM incorporates six major elements which are divided into two areas (the healthcare system and the community) to provide patients with chronic conditions positive clinical and functional outcomes. The outcomes of adherence to this model of care are more knowledgeable providers, healthier patients who

understand their disease processes, more satisfied providers, and cost savings (Stellefson, Dipnarine, & Stopka, 2013).

The CCM postulates that six elements are most appropriate for chronic illnesses. These are as follows: (a) the health system or the organization, which include how the organization is structured to facilitate care; (b) the clinical information system that is concerned with progress support tools; (c) decision support that allows clinicians to provide evidence-based guidelines for care; (d) the delivery system design, which deals with care coordination; (e) the self-management support which provides education, patient empowerment, and tools towards care; and (f) community resources, which maintain care through private and public resources and policies (Stellefson et al., 2013). For nurses to work with the CCM in hospital settings or other healthcare facilities and have adequate knowledge of each element or component are necessary for optimal results.

Providing structural change for practice, the CCM is a basic but comprehensive model. Its elements have been used to foster high-quality care that has proven successful in various countries globally. Oprea et al. (2010) reported that providing evidence-based care for patients with chronic illnesses within the healthcare system does not usually take place. Therefore, the CCM with its multiple components is a common response to solve this practice gap, as it provides strategies to prevent and manage chronic illnesses and provide care. With this care model theory, healthcare professionals play a major role as part of the multidisciplinary team in providing evidence-based care for patients. This model is also used in restructuring the provision of nursing care for patients with chronic diseases, such as DM.

The CCM is a theory of care that is most appropriate for addressment of the lack of diabetic education that impedes a proper discharge process (Stellefson et al., 2013). DM is a challenging chronic disease that requires the proper guidance from healthcare professionals towards hospitalized diabetics, and guidelines are developed to provide evidence-based care and promote high positive patient outcomes. The CCM theory with its concept of six interacting elements guide nurses in providing timely and accurate care delivery with regard to prevention and treatment.

Application of CCM

The CCM is an evidence-based response to care that is best suited for application to practice in the management of DM so that quality nursing care can be improved (Oprea et al., 2010). The elements of the CCM, which include health system, self-management support, decision support, delivery system design, clinical information system, and community resources and policies, support the provision of good patient care and were applied to this practice project.

Health System Organization of Healthcare

Within the CCM, the health system organization is composed of providers, nurses, nurse leaders, administrators, and other healthcare professionals from whom provision of comprehensive care is expected. The organization must be committed to provide the best care to chronically ill diabetic patients, from admission through to discharge. Care providers must be provided with education, teaching policies, and strategies that address diabetes education. These strategies include blood sugar checks, obtaining of prescribed medication (insulin) for administration, medication administration, discharge process, and consumption of meals. These are means in which

the CCM works within the health system to provide quality patient care (Dancer & Courtney, 2010).

Delivery System Design

The delivery design system works in conjunction with the organization and delivery of care. This system takes into account the implementation of care innovation that is needed so that the care provided to patients will be of optimal quality.

Collaborative efforts of the healthcare team in the delivery process are paramount, and effective management is also important with this system. This element is predicated on the establishment of guidelines in proper clinical practices. Practice models, diabetic education, and any information which serves as a reminder must be implemented for healthcare professionals providing care.

With this system, the provision of educational discharge instructions to include standardized discharge instructions that are interactive and which allow for teach-back by patients, in which the healthcare team ask patients what they have just learned, must be available on a consistent and continuous basis. This method is also highly encouraged in the healthcare setting, as it encourages the use of electronic media (Internet access), and collaboration of group care with the healthcare team on care delivery methods to maximize outcomes (Dancer & Courtney, 2010).

Self-Management Support

Within the CCM framework, the system supports self-management of DM in the form of providing educational material, diabetic discharge teaching, and return demonstrations as a part of providing care. Teach-back, goal setting, and action plans are encouraged to support self-care (Dancer & Courtney, 2010). Collaboration of this

element along with the healthcare system and community resources take place to maximize self-management. Technological methods of teaching, such as the use of the computer to gather information or handouts in the form of paper, are made available to patients while in hospitals. Studies have shown that self-management training and counseling produced positive patient outcomes when information is properly provided, teaching is implemented, and return demonstrations have taken place (Dancer & Courtney, 2010). The concerted efforts of the interdisciplinary team have been enforced and quality improvement and self-management techniques agreed on.

Decision Support

Dancer and Courtney (2010) reported that in an effort to obtain maximum patient outcomes, hospital cost reduction, and evidence-based guidelines, patient preferences should be supported consistently. Whatever guidelines are in place that pertain to daily practices, including appropriate discharge planning, must be made known to patients for greater support and participation. For example, sharing information includes results from point-of-care testing, use of treatment guides, and physician order sets. Such information sharing has shown to produce positive effects on patient-provider relationships and help patients to have a better understanding of care (Stellefson et al., 2013).

Clinical Information System

The clinical information system within the CCM provides for information to be available to both patients and caregivers. Hospitalized patients are exposed to their own healthcare information via a clinical information system in an effort to improve disease management. Healthcare professionals are privy to the electronic healthcare system, which will lead to a more advanced level of providing care to patients. This system also

makes patients' information readily available to multiple providers and healthcare professionals at the same time. Medication administration information that gives providers updated and timely information is provided through this system as well.

Community Resources and Policies

This element links available community resources to patients' needs for continuation of proper practices. Support groups inclusive of other diabetic patients, health programs, families, and health clinics, to name a few, have proved to be very effective in diabetic care and in maintaining diabetic practices (Dancer & Courtney, 2010).

Significance of the Project

Changes in healthcare reform and financial incentives to provide safe, efficient, and effective patient care have created quality initiatives programs, such as increasing nurses' adherence to practices and reduction of admission in healthcare institutions to emphasize the importance of nurses' teaching and patient education. The impact of nondelivery of effective patient education, especially during the discharge process, can negatively affect patient outcomes and increase healthcare costs. The current project had a positive effect on practices within the healthcare organization by nurses' proper utilization of an evidence-based discharge guideline.

This project was of significance in increasing the knowledge of nurses, with the goals of improving the education provided to diabetics, improve the quality of life, improve the quality of care, and decrease the healthcare costs to the nation in caring for these patients. By focusing on a clear endpoint in patient care, organizations have a responsibility to provide healthcare professionals with the necessary tools to provide

more effective evidence-based discharge planning for patients served. With the understanding that early readmissions may occur due to a lack of compliance with standardized guidelines, this project aimed to improve the adherence of nurses in providing care, improve patient outcomes, improve patients' quality of life after discharge, reduce hospital length of stay, and ultimately reduce hospital costs.

Nursing Practice

This project impacted nursing practice by providing a more effective discharge teaching, through a standardized evidence-based discharge process to the affected and vulnerable population. As nurses utilized a discharge guideline and additional resources, they were able to explore appropriate teaching methods through seminars and mentorship to promote efficiency, thus facilitating an improved discharge process. The process of discharge should begin upon admission and is significant for patient proper transition. Therefore, providing quality patient care in the form of education and teaching about DM will produce a more educated diabetic population, more satisfied patients, and more knowledgeable and satisfied care providers.

Input from the interdisciplinary healthcare team made coordination and planning even more critical. APRNs and RNs became more knowledgeable on practices concerning discharge, due to education provided on evidence-based diabetic discharge practices according to regulatory agencies guidelines. The discharge guideline was tailored so that capable patients and family members had complete understanding of their disease processes and the care needed postdischarge. A more comprehensive approach to a discharge guideline that is evidence-based, standardized, and patient-centered, produces a more effective healthcare organization (Dreyer, 2014).

Healthcare Outcomes

This project may impact healthcare outcomes by alleviating or reducing any potential adverse events, such as medication errors, and any unnecessary delays along the patients' hospital pathways. The effect of inadequate discharge planning on readmission rates, length of stay, healthcare outcomes, and costs to patients and healthcare providers has resulted in high costs to the nations' healthcare budget. The desired discharge guideline, therefore, may create the delivery of discharge education and teaching in a standardized manner pertinent to meet the patients' needs. The use of a standardized discharge guideline can effectively prepare patients for proper discharge, provide important implications for quality of care at discharge, enhance access to care, and assisted in reducing readmission.

Utilization of interprofessional collaboration for improving patient and population health outcomes allowed the employment of effective communication and collaboration skills that propelled the development, and implementation of the nursing diabetic discharge guideline. Effective communication skills with patients, nurses, nursing leaders, and physicians contributed to the dissemination of information in the project development. In promoting collaboration with affiliated healthcare systems and other partners, nurses had the opportunity to share learned information and promote the development of a national standardized patient method to facilitate a proper discharge process for the diabetic population.

Healthcare Delivery

This project impacted healthcare delivery by the utilization of the evidence-based diabetic discharge instrument on other nursing units of the hospital, as recommended by

the administrative team. The information provided as a result of the guideline implementation process provided a creative and straightforward approach for educating nurses on recommended guideline use and for educating the affected population about the disease process. Utilization of the available resources for discharge education at the healthcare facility for this project to translate research findings into evidence-based practice, both at the individual and healthcare system levels, was an integral part in implementing this guideline. Nurses incorporating the guideline for diabetes discharge into the nursing discharge process improved the discharge process for patients, anticipating improved patient outcomes, reduction of early readmissions, and hospital costs reduction.

Changes in discharge practices as a result of this project were based on increasing the knowledge of APRNs and RNs and their increased awareness and extended knowledge relating to diabetes. The project also identified nurses' needs for ongoing continuous diabetic education to remain in compliance with evidence-based practices. This project underscored the need for utilization of a standardized process to provide education to every admitted diabetic patient. Thus, the project and results promoted nurses' adherence to evidence-based practices, reduced readmissions, increased patients' quality of life after discharge, and reduced their hospital costs for diabetes care.

Healthcare Policy

This project will impact healthcare policy by adherence to recommendations from regulatory bodies and by conforming to guidelines for diabetic care during hospitalization. Healthcare agencies with policies that base future reimbursement to hospitals on readmissions require that hospitals and postdischarge providers work

collaboratively to increase nurses' adherence to recommended practices. Therefore, the intervention of this guideline assisted nurses to stay in compliance. Because of the effects of the costs of diabetic care to the nation, it was hoped that the combined effort of nurses and policymakers will have a measurable difference on patient outcomes.

The Affordable Care Act of 2010 made provisions to reduce payment from CMS to participating hospitals with high preventable readmission rates, thus allowing hospitals to design and implement programs that would be effective in reducing readmissions (Kaiser Family Foundation, 2017). This project supported the Affordable Care Act highlights on the hospital readmission reduction program, which provided incentive to hospitals to lower readmission rates. As a result, overall hospital, state, and national healthcare costs were positively affected. More diabetics are now being provided with diabetic education, thereby making compliance more effective and reducing early readmission throughout. Creation of this diabetic discharge process supported the recommended guidelines on diabetic care in becoming national policy.

Summary

The recommended discharge guideline for providing care to the diabetic population for better patient outcomes to render APRNs and RNs more knowledgeable on the use of standardized discharge practices were not being met at the participating hospital. As a result, diabetics were being readmitted to hospitals at an unacceptable rate, and the cost of providing care during readmission, was higher than the cost of providing care for those without readmission. A more enhanced discharge planning process for diabetics will result in more knowledgeable nursing professionals and a more informed patient population. A standardized diabetic discharge guideline incorporated into the

hospital's discharge process provided APRNs and RNs with proper tools for educating the diabetic population and provided diabetics with adequate education to contribute to an increase in quality of life after discharge.

The chronic care model was the theoretical framework for this project. The six major elements were used to assist in the collaborative process of the healthcare system and patients to maximize self-management, patient outcomes, and hospital cost savings. A standardized discharge guideline assisted healthcare providers in providing education and teaching that increased nurses' knowledge and compliance and positively impacted the diabetic population. Changes in diabetic practices, combined with provision of support for the recommended guidelines, supported the need for a national policy on diabetic care.

Chapter 2

Review of the Literature

Diabetes mellitus is a chronic disease that affects millions of Americans and in particular the African-American population, resulting in recommendations for providing evidence-based guidelines for practices (Centers for Disease Control and Prevention [CDC], 2017; Rubin et al., 2014). Due to the insurmountable cost from hospitalizations to readmissions, evidence-based standardized guidelines are recommended by regulatory agencies and professional bodies to curtail the adverse effects of this issue (Centers for Medicare and Medicaid Services [CMS], 2015; Joint Commission, 2010; Joint Commission on Accreditation of Healthcare Organizations [JCAHO], 2016; Medicare Payment Advisory Commission [Medpac], 2013; National Quality Forum [NQF], 2012). Evidence-based standardized guidelines for nurses' adherence aided in the prevention of early hospital readmissions when followed, resulted in less readmission, and lowered hospital costs (Ametlli, 2011; Greenwald, Denham, & Jack, 2007).

Evidence-based standardized guidelines recommendations rely only on the most scientifically sound evidence base (Jarrett & LaBresh, 2015). JCAHO, in conjunction with ADA, NQF, and CMS, has maintained that a standardized hospital discharge guideline must become a part of the safety regulations for increasing nurses' knowledge and adherence for improving patient outcomes. The guideline developed in this project assisted healthcare professionals, in particular APRNs and RNs, who provide direct patient care to deliver quality healthcare. The implementation and utilization of a

standardized evidence-based guideline for diabetics in line with the recommended guidelines for APRNs and RNs enabled a more educated nursing population. This implementation will be cost effective for organizations and the nation, improve patient care and outcomes, and reduce costs.

Literature Search

A literature search was conducted using search engines such as the Cumulative Index to Nursing and Allied Health Literature (CINAHL), EBSCOhost, governmental agencies, professional agencies, the Internet, and complete databases to locate articles from 2010 to 2017. The focus was on English-language, evidence-based, peer-reviewed journals and articles that specifically addressed discharge practices as they relate to standardized policies. Keywords used to conduct the search to identify potential articles were as follows: *chronic care model, discharge guidelines, discharge process, hospital and diabetic discharge, guidelines for care, nursing and diabetic readmissions, nursing discharge education, nursing process for diabetes discharge, nursing services, standardized discharge guidelines, and transition of care*. The major topics of the literature review are the benefits of standardized discharge guidelines, incorporation of guidelines in clinical practice, successful discharge innovations using standardized guidelines, and incorporation of the chronic care model in the discharge process.

Benefits of Standardized Discharge Guidelines

A standardized discharge guideline utilized by nurses in any healthcare setting assisted greatly to reduce the healthcare cost incurred by persons with chronic diseases such as diabetes (American Diabetes Association [ADA], 2017b; CMS, 2015; JCAHO, 2016; NQF, 2012). Guidelines from these regulatory bodies and professional

organizations on providing care for patients provided positive results in optimizing care, decreased cost reduction, and increased patient outcomes and quality of life. Several discharge processes through networking and interprofessional collaboration to increase nurses' adherence have resulted in lower readmissions rates, improved care processes, and system improvement (Greenwald et al., 2007; Knier, Stichler, Ferber, & Catterall, 2015; McCoy et al., 2013).

It is estimated that the cost of one hospital avoidable readmission results in a loss to hospital revenue of approximately \$7,200.00. Therefore, hospitals with vast amounts of readmissions within 30 days after discharge will ultimately be paid significantly less by CMS (Ametlli, 2011; Joynt, Sarma, Epstein, Jha, & Weissman, 2014; Nelson & Rosenthal, 2015). As a result, guidelines were set forth for use so that nurses may be educated on diabetes care and adhere to standards in place. For example, the National Institute for Health and Care Excellence (2015) recommended the use of discharge protocols that include good information-sharing arrangements between healthcare and social care providers, as well as between patients and families.

The Centers for Medicare and Medicaid Services (CMS, 2013) discharge guideline includes measures such as the use of a multidisciplinary team approach in the discharge planning process. This approach served to incorporate care coordination and collaboration that increased the effectiveness of the discharge planning process. It is recommended that although diabetic inpatients must be provided with adequate diabetic teaching in preparation for transition to the home upon discharge, more expanded outpatient diabetes education can be arranged for the maintenance of quality of life (ADA, 2017b; JCAHO, 2016).

Minott (2008) reported that in a study with a control group, implementation of guidelines of this nature showed reduced readmission by 36%. Thus, standardized guidelines are supported by current literature. The guidelines can be implemented on the national and local levels of healthcare to address the issues of education, readmission, cost, and care (American Diabetes Association [ADA], 2017a; CMS, 2015; National Institute for Health and Care Excellence, 2015).

Incorporation of Guidelines in Clinical Practice

Utilization of recommended guidelines in several hospitals allowed nurses to collaborate with other members of the multidisciplinary team to obtain favorable results (Joynt et al., 2014; Saccomano, 2014). The discharge process includes the entire team and by this incorporation mitigates readmission risk by initiation of the process upon patient admission to the hospital. The patient is informed of the actual date of discharge, if possible, and care is continued with follow-up postdischarge (Nelson & Rosenthal, 2015; Shigemi et al., 2012).

At the site for this project, the hospital's current discharge process was not specific to the diabetic population. Therefore, implementation of a standardized diabetic discharge guideline in accordance with guidelines of CMS, JCAHO, and other regulatory healthcare agencies provided a more complete discharge process to address the target population. Although the recommended guidelines for treatment of patients with chronic diseases have been given national recognition, healthcare professionals such as APRNs and RNs must be educated on the current recommended practices to be able to incorporate these guidelines into clinical practices for patients with specific illnesses to

maximize positive returns (Dancer & Courtney, 2010; Nelson-Slemmer & Thomas, 2014).

Successful Discharge Innovations Using Standardized Guidelines

Nonadherence to the required use of hospital systems has resulted in system failures in the discharge process at many hospitals (Horwitz et al., 2013). Thus, various innovative systems have been used to assist in providing quality care. The Re-Engineered Discharge Process (Project RED) designed by the Agency for Healthcare Research and Quality (AHRQ) and adopted by NQF used its patient-centered, standardized discharge process to increase nurses' levels of knowledge and to reduce unavoidable readmission in several hospitals. This process has been proven a success in cost reduction (Agency for Healthcare Research and Quality [AHRQ], 2014; Jweinat, 2010). The Reducing Avoidable Readmission Effectively (RARE) discharge program in the State of Minnesota has also shown improvement in the discharge process, as well as a system of transition of care (McCoy et al., 2013). Ametli (2011) examined the methodology used by Lean Six Sigma, which included scheduling follow-up appointments prior to discharge, use of proper communication strategies for the clinical team, and improvement of the smoothness of the discharge process by incorporation of the electronic medical record system. Ametli (2011) found that each component positively impacted the others in the discharge process.

The Better Outcome by Optimizing Safe Transitions (Project BOOST) is another statewide project in Illinois (Landman, 2013; Society of Hospital Medicine, 2012). This project used interprofessional and intraprofessional collaboration to provide nurses the education to assist in prevention and to decrease early readmission, enhancing the care

delivery and discharge processes (Hansen et al., 2013). The State Action on Avoidable Rehospitalizations (STAAR), developed by the Institute for Healthcare Improvement (2017), aimed to assist healthcare professionals to apply specific interventions as part of the discharge process, reduce 30 days readmission, and increase patient outcomes (Jweinat, 2010; Landman, 2013).

These discharge innovations with standardized methods serve to assist healthcare organizations in standardizing the respective discharge processes. Implementation was carried out in alignment with the standardized guidelines of regulatory agencies and professional organizations to educate healthcare professionals so that adherence to recommendations could occur, early hospital readmissions could be reduced, hospital costs could be decreased, and patients' quality of life could be increased postdischarge.

Incorporation of the Chronic Care Model in the Discharge Process

The chronic care model used in clinical practice as a framework for interventions to provide higher quality care for patients with chronic conditions has also been used in formulating discharge strategies and guidelines within healthcare systems (Peterson, Blackburn, Phillips & Puffer, 2014). This evidence-based healthcare delivery framework has the potential to improve the ability and skills of healthcare professionals in promoting quality healthcare practices. With its six interrelated elements for the delivery of quality care for chronic disease patients, this model is considered by numerous healthcare organizations as the optimal choice of model for caring for patients with chronic conditions from admission through to discharge (Dancer & Courtney, 2010; Kadu & Stolee, 2015).

Summary

The literature supports the views that with standardized evidence-based discharge guidelines in place to be used by nurses, the delivery of healthcare will show increasing benefits to nurses, patients, and the healthcare industry. As a result, nurses become more knowledgeable on evidence-based and recommended standardized practices. Utilization of guidelines of this nature in clinical practice allows the collaboration of members of the interdisciplinary team to provide patients with adequate support in discharge preparation and promotion.

The promotion of successful discharge innovations adopted by healthcare organizations has been shown to assist in the standardization process of hospitals' discharge initiatives in accordance with regulatory standards. With implementation of the innovative measures, readmissions rates have been reduced, healthcare outcomes have improved, and cost reimbursements have increased. With such results, these innovations have become formulas for developing and implementing discharge guidelines in various healthcare organizations. As the healthcare industry advances, standardized guidelines have become a major and normative part of the healthcare system. A standardized evidence-based discharge guideline in place promotes the use of evidence-based practices and improves patients' outcomes. The CCM with its six interrelated methods of providing care assist in formulating the standards for an evidence-based diabetic discharge guideline used by nurses in the healthcare arena.

Chapter 3

Methods

Lack of the recommended diabetic-oriented, evidence-based specific discharge guidelines specifically for diabetic patients has resulted in a high rate of unavoidable hospital readmissions, increased hospital costs, and decreased quality of life for discharged diabetic patients (Saccomono, 2014). The effect of DM on the United States population is on the increase and is expected to reach 33% by 2050 (Salamah et al., 2011). Affecting more than 29.1 million Americans, this chronic poorly controlled medical condition has also been associated with a low level of disease comprehension and management by nurses (Yacoub et al., 2015), and increased risk of early hospital readmissions (CDC, 2014). A sound understanding of evidence-based and standardized practices by APRNs and RNs who provide care to hospitalized diabetics should improve patient outcomes (Yacoub et al., 2015).

Dungan (2012) reported that persons with DM accounted for 30% of readmissions within a 1-year period. Additionally, literature has confirmed that diabetics have contributed to a high rate of hospitalizations and readmissions, which have a negative effect on the nation's healthcare cost (CDC, 2014). Regulatory agencies such as CMS and JCAHO have embarked upon general standardized measures. The standardized measures utilized by nurses are included in discharge practices for inpatients, especially those with chronic diseases.

For the current project, the implementation of the hospital's electronic health records provided a system for documentation of health information in addition to monitoring of conditions. In conjunction, the system incorporated discharge education for patients and family guidance in the preparation for transition to home. However, although the recommendations for diabetic discharge were presented by regulatory agencies, the organization did not include these recommendations in the discharge process. Therefore, healthcare professionals, and in particular nurses, were not providing adequate discharge information and the standard recommended education in preparation for the discharge of diabetic patients.

Integration of the use of a diabetic discharge guideline that conformed to regulatory and professional healthcare agencies standards significantly improved nurses' adherence in providing the care needed. Therefore, the purpose of this quality improvement project was to develop and implement an evidence-based standardized nursing diabetic discharge guideline, congruent with CMS, JCAHO, and other professional healthcare organizations' discharge standards, at a for-profit adult acute care hospital in South Florida.

Project Design

A quantitative descriptive design was used to evaluate the objectives of the project. The objectives were measured at two different times, before and after the implementation of a standardized process. The data analysis included nonparametric statistics, specifically a Wilcoxon signed-rank test and a paired *t* test, for observation of the traditional and standardized practice associated with regulatory practice guidelines.

Sample/Population

Two samples of the population were used to determine and measure outcomes associated with the project objectives. To observe nurses' compliance with the discharge process for diabetic patients on a medical-surgical/telemetry unit, electronic medical records were compared retrospectively and prospectively. In comparison, 22 nurses' electronic discharge charts, approximately 56 charts, were evaluated pre- and poststandardized guideline implementation.

Instruments and Data Analysis

Twenty-two APRNs and RNs participated in three different surveys for discharge guideline development. In addition, a six-member intraprofessional team evaluated and approved the evidence-based diabetic discharge guideline using the Appraisal of Guidelines for Research and Evaluation II (AGREE II) evaluation tool (Agreertrust.org, 2009) to be used at the institution. The four surveys were as follows: (a) an 11-item questionnaire for demographic information, (b) a pretest survey to assess the knowledge and understanding of nurses who implemented the traditional discharge process, (c) a posttest survey to reassess the knowledge and understanding of nurses who implemented the standardized discharge process, and (d) the AGREE II tool.

Statistical methods used in the analysis were the Wilcoxon signed-rank tests and paired *t* tests to determine if there was a statistically significant difference in the participants' responses to each survey item between pretest and posttest.

Problem Statement

Currently, there is an absence of a standardized evidence-based diabetic discharge guideline at a for-profit acute care hospital in South Florida. This absence has affected nursing practice and prohibited practice adherence by APRNs and RNS at the hospital.

Purpose of the Project

The purpose of this quality improvement project was to identify CMS, JCAHO, and other professional healthcare organizations' guidelines as they relate to nurses' knowledge relating to evidence-based discharge practices; to determine level of nurses' knowledge relating to evidence-based discharge practice process; to develop a quality improvement plan which included the development of an evidence-based guideline for nurse-driven diabetic discharge instructions; to present the guideline to stakeholders; to implement the diabetic discharge guideline in fall of 2017; and to evaluate nursing compliance with the evidence-based practice discharge guideline at a for-profit adult care hospital in South Florida.

Project Setting

The project setting was a 306-bed, for-profit acute care hospital in an underserved community in South Florida. The hospital has a large diabetic inpatient population and a statistically high rate of early readmission. Patients diagnosed with diabetes, or those with a history of diabetes, are admitted primarily to the medical-surgical/telemetry unit and are cared for by the hospital healthcare team. This multidisciplinary team includes attending physicians, physician assistants, APRNs, and RNs, among others.

Discharged diabetic patients received printed electronic discharge instructions reviewed by nurses providing care prior to discharge. The discharge instructions included

information on medication with side effects and follow-up care. However, there is a lack of standardized education with reference to patients' diagnosis, follow-up appointments, or history, as well as other important patient information.

Inclusion Criteria

For participants in this project, the inclusion criteria were certified telemetry APRNs and RNs who work on the medical-surgical/telemetry 47-bed unit with the adult diabetic population. These nurses had to have worked on the unit for at least 12 months. They had to be able to speak, read, and understand English.

Exclusion Criteria

The exclusion criteria applied to APRNs and RNs who did not work on the medical-surgical/telemetry unit. Excluded also were nurses who were not certified to work on the telemetry unit and those who did not speak, read, or understand English.

Ethical Considerations

Institutional Review Board (IRB) approval from Nova Southeastern University (NSU) was not required because of the quality improvement nature of the project to promote nurses' adherence, and this project did not directly affect human subjects. A letter of IRB exemption was provided (Appendix A). Administrative approval from the South Florida hospital at which the guideline was implemented was obtained (Appendix B). Support from the nursing staff of the hospital and other departments prior to the guideline development were received.

Project Phases/Objectives

The five specific and measurable project objectives with program outcome measures were carried out in five phases, as follows:

Objective 1: Identify CMS, JCAHO, and other professional healthcare organizations' guidelines as they relate to nurses' diabetic discharge instructions.

Standardized diabetic discharge guideline information from CMS, JCAHO, ADA, and other professional organizations were accessed, reviewed, and incorporated as part of the hospital's existing system for nurses' convenient access and utilization.

Objective 2: Determine level of nurses' knowledge relating to evidence-based discharge practice process.

Meetings were held with the unit nursing director to analyze the hospital discharge system. To assess and evaluate the level of nurses' knowledge with regard to diabetic discharge practices, several steps were necessary. First, a flyer announcing the project was posted on the unit's bulletin board and in the nurses' station inviting participation by interested ARNPs and RNs (Appendix C). When participants responded, informed consents were obtained (Appendix D) and they completed a demographic form (Appendix E). The pretest was then administered via SurveyMonkey (Appendix F) for baseline knowledge regarding care for diabetic patients from admission through to discharge and the recommended discharge process for diabetics. This test consisted of 13 questions, and results from this test aided the diabetic seminar information process for the recommended practice.

After the investigator met with the unit's nursing director and manager, diabetic information seminars were conducted approximately 1 week after the pretest over 3 days.

The educational seminars, conducted by the investigator, took place at lunch hour face-to-face sessions with PowerPoint presentations and lasted approximately 90 minutes each day. The seminars focused on the components of the standardized recommended guideline for discharging diabetic patients. One week posteducational sessions, participants were given the posttest via SurveyMonkey (Appendix G), used to evaluate participants' knowledge and understanding of evidence-based discharge practices. The 13-question posttest contained the same information as the pretest.

Objective 3: Develop a quality improvement plan, which included the development of an evidence-based guideline for nurse-driven diabetic discharge instructions.

A review of the hospital's discharge practices and protocol took place, after which measures recommended from regulatory agencies that showed optimal care for the hospitalized diabetic population were incorporated into the plan. The new guideline was developed based on the recommended standards and assistance obtained from the multidisciplinary team to evaluate the new guideline (Appendix H). Evaluation of the new guideline was carried out by the multidisciplinary team using the guideline evaluating tool, AGREE II (Appendix I).

Objective 4: Present guideline to stakeholders and implement diabetic discharge guideline by fall of 2017.

The new guideline was presented to the relevant stakeholders, and especially to the end users, the nurses, in a staff meeting. The evidence-based guideline then became a part of the unit's discharge process for approximately 1 week.

Objective 5: Evaluate nursing compliance with evidence-based practice discharge guideline.

One week following the new guideline implementation, utilization was analyzed to evaluate nursing compliance, and APRNs and RNs were observed on the discharge process from admission of a diabetic patient through discharge, as well as the discharge of existing diabetic patients. Returned discharge guideline sheets were reviewed for any communication of discharge needs, and the hospital's electronic discharge summary was analyzed for completion.

Timeline

For the successful implementation of this project through the various objectives, a timeline was needed for effective transformation. Objective 1, to identify CMS, JCAHO, and healthcare professional organizations' guidelines; and Objective 2, to determine the level of nurses' knowledge regarding evidence-based discharge practices, took approximately 8 weeks. Objective 3, to develop a quality improvement evidence-based diabetic discharge guideline; and Objective 4, to present the guideline to stakeholders and implement the guideline, took 12 weeks. Objective 5, to evaluate utilization of the guideline, took approximately 2 weeks.

Resources/ Budget

The resources needed to carry out this guideline implementation included people, time, and technology. The people resources were the multidisciplinary team, nursing staff, and the medical-surgical/telemetry departments. The time resources included the time needed to design, implement, and evaluate the guideline. Technology resources included the development of the flyer, PowerPoint, and handouts. The costs related to the

project for printing of guideline information, reminders/flyers, and for thank you items totaled \$135.00, as displayed in Table 1.

Table 1

Project Resources and Budget

Category	Item	Description	Quantity	Total
Printing	Paper	White printing paper	\$5.00 x 1	\$5.00
Announcement	Posters, flyers	Poster boards Colored paper	\$10.00 x 4	\$40.00
Materials	Reminders, PowerPoint		\$5.00 x 2	\$10.00
Weekly thank you items for office staff	Edibles	Snacks and juices	\$80.00 x 1	\$80.00
Total costs				\$135.00

Outcome Measures

The project outcome measures were evaluated as below:

Objective 1: Identify CMS, JCAHO, and other professional healthcare organizations' guidelines as they relate to nurses' diabetic discharge instructions.

This objective was measured by a complete literature review of approximately 15 articles on standardized measures from regulatory agencies to be incorporated into the regular discharge process. The measurement of this objective was evidenced by the use of the recommended guideline in the daily discharge process.

Objective 2: Determine level of nurses' knowledge relating to evidence-based discharge practice process.

This objective was measured by a participation level of 76% of nurses (22 out of 29 nurses) on the unit who completed the demographic form and pre-and posttest online survey questionnaires to evaluate their knowledge of recommended guidelines pertaining to the diabetic population.

Objective 3: Develop a quality improvement plan, which included the development of an evidence-based guideline for nurse-driven diabetic discharge instructions.

This objective was measured by the successful development of the guideline and the multidisciplinary team 100% approval for guideline use. Measurement took place by utilization of the AGREE II Evaluation Tool to evaluate the updated guideline.

Objective 4: Present guideline to stakeholders and implement diabetic discharge guideline in fall of 2017.

The new guideline was presented at a meeting with the multidisciplinary team, the nurses who participated in the study, nurses who did not participate, and the unit's secretaries. Information on guideline use and expectations were provided to the entire team, and in particular the APRNs and RNs. Implementation of the nurse-driven evidence-based diabetic discharge guideline measured this objective. CMS, JCAHO, and other professional healthcare organizations' guidelines on inpatient diabetic management were sources of evidence in implementing this practice change.

Objective 5: Evaluate nursing compliance with evidence-based practice discharge guideline.

A compliance rate of 78% of nurses using the evidence-based standardized recommended practices measured this objective. Data were obtained with descriptive

data from the hospital's database, as well as data from completed guideline utilization forms.

Summary

This project with its emphasis on utilization of a standardized discharge approach for the diabetic population to promote nurses' adherence included the implementation of an evidence-based guideline for inpatient diabetics. Because this project did not directly affect human subjects and served primarily for quality improvement purposes, NSU IRB approval was not required. With descriptive statistics and a retrospective design, this project was carried out in an acute care for-profit hospital through several phases in approximately 22 weeks. The five specific and measurable project objectives with outcome measures were completed in phases.

Chapter 4

Results and Discussion

The development and utilization of an evidence-based standardized diabetic guideline was focused on increasing nurses' compliance with regulatory agencies' standardized diabetic discharge practices. The purpose of this quality improvement project was to identify CMS', JCAHO's, and other professional healthcare organizations' guidelines as they relate to nurses' knowledge regarding evidence-based discharge practices; develop a quality improvement plan, which included the development of an evidence-based guideline for nurse-driven diabetic discharge instructions; present guideline to stakeholders; implement diabetic discharge guideline in fall of 2017; and evaluate nursing compliance with the evidence-based practice discharge guideline at a for-profit adult care hospital in South Florida.

Prior to the data analysis, the project objectives demonstrated a significant p level, $p < 0.05$. Four survey instruments were used to collect data from 22 participants. Based on the information collected, these surveys assisted with development of the guideline. The four survey instruments were as follows: a demographic form with 11 questions, the 13-question pretest survey instrument for assessing participants' knowledge and understanding of the discharge process, the 13-question posttest survey instrument for reassessing participants' knowledge and understanding of the discharge process, and the AGREE II guideline evaluation tool. A Wilcoxon signed-rank test and paired t test were

the statistical analysis methods used to determine if there was a statistically significant difference in the responses of each survey item between pretest and posttest.

Demographics

The demographic survey (Appendix E), consisting of 11 items, was administered to participants, and the results are shown in Tables 2 and 3. Twenty-two nurses completed the demographic form. The ages of the nurses ranged from 27 to 66 with an average age of 43.00 ($SD = 11.50$). On average, survey participants worked as a nurse for a total of 8.60 years, at the current hospital for 4.11 years, and on the current unit for 2.89 years (Table 2).

Table 2

Nursing Demographic Characteristics

Characteristic	Mean (SD)	Median	Min	Max
Age (years)	43.00 (11.50)	44.50	27	66
How long (years) have you been working as a nurse?	8.60 (9.97)	4.50	1.25	40
How long (years) have you worked in this hospital?	4.11(4.49)	3.00	0.75	21
How long (years) have you worked on this unit?	2.89 (2.72)	2.00	0.67	13

The majority of nurses were female (77.3%), and over half of the participants (54.5%) spoke English. Approximately one-third (36.4%) were of Caribbean descent. The highest level of education for the participants was either Associate Degree in Nursing (45.5%), Baccalaureate of Science in Nursing (50.0), or Doctorate of Science in Nursing (4.5%). Almost all nurses were familiar with the hospital discharge procedures

for diabetics (90.9%) and were familiar with the recommended discharge procedures for diabetics (81.8%; Table 3).

Table 3

General Demographic Characteristics and Familiarity With Procedures

Characteristic		Frequency (%)
Gender	Male	5 (22.7)
	Female	17 (77.3)
Primary language	Creole	1 (4.5)
	English	12 (54.5)
	English/Creole	1 (4.5)
	French	3 (13.6)
	Hindi	1 (4.5)
	Spanish	4 (18.2)
Nationality	American	1 (4.5)
	British	1 (4.5)
	Cuba	3 (13.6)
	Haitian	5 (22.7)
	Haitian-American	1 (4.5)
	Hispanic	2 (9.1)
	Jamaican	8 (36.4)
	Latin	1 (4.5)
Highest level of nursing education	ADN	10 (45.5)
	BSN	11 (50.0)
	DNP	1 (4.5)
Are you familiar with the hospital discharge procedures for diabetics?	No	2 (9.1)
	Yes	20 (90.9)
Are you familiar with the recommended discharge procedures for diabetics?	No	4 (18.2)
	Yes	18 (81.8)

Results: Objectives 1 and 2

Objective 1: Identify CMS, JCAHO, and other professional healthcare organizations' guidelines as they relate to nurses' diabetic discharge instructions by the second week after Nova Southeastern University's Institutional Review Board approval.

This objective was achieved by review of several for-profit organizations' standardized practice affiliated with CMS, JCAHO, ADA, and NQF. Hospitals such as Mayo Clinic that is among the 10 best hospitals for diabetes care in the United States (Mayo Clinic Health System, 2017) utilized the JCAHO-ADA recommended evidence-based diabetic discharge guidelines for care continuity.

Objective 2: Utilize a pretest-posttest survey process to assess nurses' knowledge pertaining to evidence-based diabetic discharge practice.

This objective was achieved by the use of descriptive statistics to analyze the pretest and posttest surveys (Appendices F and G). The pretest and posttest survey instruments consisted of 13 5-point Likert scale questions ranging from *Strongly agree* to *Strongly disagree* (some with subquestions). These surveys were completed by the participants. The results are displayed in Tables 4 and 5. A comparison of the pretest-posttest scores by mean and standard deviation appears in Appendix J, Table J1.

Table 4

Responses for Pretest Survey

Frequency (%) of Survey Responses						
	1	2	3	4	5	Missing
Q1_1	0	3 (20.0)	3 (20.0)	0	9 (60.0)	7
Q1_2	0	3 (25.0)	5 (41.7)	0	4 (33.3)	10
Q1_3	0	6 (60.0)	1 (10.0)	0	3 (30.0)	12
Q2	0	2 (18.2)	2 (18.2)	7 (63.5)	0	11
Q3	0	3 (13.6)	2 (9.1)	8 (36.4)	9 (40.9)	0
Q4_1	7 (53.8)	2 (15.4)	1 (7.7)	0	3 (23.1)	9
Q4_2	6 (46.2)	3 (23.1)	0	1 (7.7)	3 (23.1)	9
Q4_3	0	0	1 (4.5)	6 (27.3)	15 (68.2)	0
Q4_4	11 (84.6)	1 (7.7)	0	0	1 (7.7)	9
Q5_1	0	0	1 (5.3)	5 (26.3)	13 (68.4)	3
Q5_2	1 (5.0)	1 (5.0)	0	7 (35.0)	11 (55.0)	2
Q5_3	0	1 (5.6)	0	6 (33.3)	11 (61.1)	4
Q5_4	0	1 (5.6)	0	6 (33.3)	11 (61.1)	4
Q6	0	0	3 (14.3)	7 (33.3)	11 (52.4)	1
Q7	0	2 (9.1)	3 (13.6)	6 (27.3)	11 (50.0)	0
Q8	0	3 (15.0)	2 (10.0)	6 (30.0)	9 (45.0)	2
Q9	0	0	4 (18.2)	7 (31.8)	11 (50.0)	0
Q10_1	0	0	0	7 (33.3)	14 (66.7)	1
Q10_2	0	1 (4.8)	0	9 (42.9)	11 (52.4)	1
Q10_3	0	0	0	7 (33.3)	14 (66.7)	1
Q10_4	0	0	0	8 (38.1)	13 (61.9)	1
Q10_5	10 (71.4)	2 (14.3)	0	1 (7.1)	1 (7.1)	8
Q11	3 (13.6)	2 (9.1)	2 (9.1)	8 (36.4)	7 (31.8)	0
Q12	0	2 (9.1)	0	8 (36.4)	12 (54.5)	0
Q13	1 (4.5)	2 (9.1)	5 (22.7)	8 (36.4)	6 (27.3)	0

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Neither, 4 = Agree, 5 = Strongly agree

Table 5

Responses for Posttest Survey

	Frequency (%) of Survey Responses					
	1	2	3	4	5	Missing
Q1_1	0	1 (7.7)	0	0	12 (92.3)	9
Q1_2	0	6 (42.9)	3 (21.4)	0	5 (35.7)	8
Q1_3	0	5 (45.5)	2 (18.2)	0	4 (36.4)	11
Q2	0	1 (12.5)	2 (25.0)	5 (62.5)	0	14
Q3	2 (9.1)	1 (4.5)	2 (9.1)	2 (9.1)	15 (68.2)	0
Q4_1	12 (70.6)	3 (17.6)	1 (5.9)	0	1 (5.9)	5
Q4_2	11 (64.7)	4 (23.5)	1 (5.9)	0	1 (5.9)	5
Q4_3	0	0	0	2 (9.1)	20 (90.9)	0
Q4_4	13 (86.7)	1 (6.7)	0	0	1 (6.7)	7
Q5_1	0	0	0	4 (19.0)	17 (81.0)	1
Q5_2	0	1 (4.5)	0	5 (22.7)	16 (72.7)	0
Q5_3	0	0	1 (4.8)	4 (19.0)	16 (76.2)	1
Q5_4	0	0	0	3 (14.3)	18 (85.7)	1
Q6	0	0	0	4 (19.0)	17 (81.0)	1
Q7	0	1 (4.5)	0	3 (13.6)	18 (81.8)	0
Q8	0	3 (13.6)	0	4 (18.2)	15 (68.2)	0
Q9	1 (4.5)	0	0	5 (22.7)	16 (72.7)	0
Q10_1	0	0	0	5 (22.7)	17 (77.3)	0
Q10_2	0	0	0	6 (27.3)	16 (72.7)	0
Q10_3	0	0	0	3 (13.6)	19 (86.4)	0
Q10_4	0	0	0	5 (22.7)	17 (77.3)	0
Q10_5	15 (83.3)	2 (11.1)	0	0	1 (5.6)	4
Q11	1 (4.5)	0	4 (18.2)	3 (13.6)	14 (63.6)	0
Q12	0	0	0	4 (18.2)	18 (81.8)	0
Q13	0	0	4 (18.2)	3 (13.6)	15 (68.2)	0

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Neither, 4 = Agree, 5 = Strongly agree

The results of the Wilcoxon signed-rank tests and paired t test suggested the following:

- There was a statistically significant difference in the survey responses of question 5 (“How do you assist in the prevention of readmission of the diabetic patient? Medication reconciliation”) (Appendix J, Table J1; $p = 0.046$ for Wilcoxon signed-rank test; $p = 0.041$ for paired t test). It appeared that participants provided more assistance in medication reconciliation after the intervention ($M = 4.86$, $SD = 0.36$), than before the intervention ($M = 4.50$, $SD = 0.79$).
- There was a statistically significant difference in the survey responses of question 13 (“Are there any assessment tools used in assessing educational needs of diabetics at discharge?”) (Appendix J, Table J1; $p = 0.022$ for the Wilcoxon signed-rank test; $p = 0.018$ for the paired t test). It appeared that participants used more assessment tools in assessing the educational needs of diabetics at discharge after the intervention ($M = 4.50$, $SD = 0.08$), than before the intervention ($M = 3.373$, $SD = 1.12$).
- There were no statistically significant differences in the survey responses for the other survey items between pretest and posttest (Appendix J, Table J1; $p > 0.05$ for both Wilcoxon signed-rank test and paired t tests).

Results: Objectives 3, 4, and 5

Objective 3: Develop a quality improvement plan which included the development of an evidence-based guideline for nurse-driven diabetic discharge instructions.

This objective was achieved by the development of the new evidence-based diabetic discharge guideline. The guideline was approved by the intraprofessional team, who then rated the guideline at 100%. The individual responses for the AGREE II evaluation tool are found in Appendix J, Table J2. Table 6 summarizes the responses to the AGREE II tool.

Table 6

Summary of AGREE II Responses

AGREE II Domain	Percentage Score
Domain 1: Scope and Purpose	100.00%
Domain 2: Stakeholder Involvement	98.89%
Domain 3: Rigor of Development	90.83%
Domain 4: Clarity and Presentation	100.00%
Domain 5: Applicability	76.67%
Domain 6: Editorial Independence	NA
Recommended This Guideline	100.00%

The AGREE II tool is an internationally accepted standard evaluation tool that is used to assess the quality of practice guidelines (Appendix I). The tool consists of 23 key items organized within six domains, followed by two global ratings items (Overall Assessment). Each of the AGREE II items and the two global ratings items are rated on a 7-point scale (1 = *Strongly disagree* to 7 = *Strongly agree*). Each domain captures a unique

dimension of guideline quality (Brouwers et al., 2010). Six nurses participated in the evaluation survey.

Objective 4: Present guideline to stakeholders and implement guideline in fall of 2017.

This objective was achieved by the investigator conducting a meeting and presenting the guideline to the stakeholders. Stakeholders included the chief nursing officer, nursing supervisor, unit nursing director, survey participants, and the multidisciplinary team. After this meeting, the guideline was implemented on two of the medical-surgical/telemetry units on June 29, 2017, for 7 days. During this period of implementation, a total of 56 discharge diabetic guidelines were appropriately used by nurses who received the evidence-based diabetic discharge guideline instructions. The guideline feasibility was further evaluated by the members of the administrative team for electronic systemwide implementation by fall of 2017.

Objective 5: Evaluate nursing compliance with evidence-based practice discharge guideline.

This objective was met as evidenced by a 78% implementation rate of the diabetic discharge guideline by nurses on the 56 charts. The discharge guideline was distributed in a checklist format (Appendix H). Two items showed statistical significance: item 1 and item 8. For item 1, “Begin discharge teaching upon admission and daily,” 28%, or 16 charts, showed nurses’ nonadherence. For item 8, “Demonstration of insulin administration and written material provided,” 41%, or 23 charts, showed nurses’ lack of adherence.

Additional checklist items showed that diabetic discharge educational material was disseminated to 76% of discharge patients, 98% had new and existing medication reconciliation completed, 100% of follow-up appointments were arranged, 82% community service referrals were generated, and 24% of electronic discharge summaries lacked diabetic information. After analysis of the discharge data, the administrative team, which included the chief nursing officer, unit nursing director, nurse manager, director of nursing support services, and clinical informaticist, was provided with feedback on the diabetic discharge implementation outcomes of the new evidence-based process. The administrative team recommended to the nursing department that the evidence-based practice guideline be utilized systemwide by the fall of 2017.

Discussion of Findings

Objective 1

The objective reflected significance in the application for hospital utilization and best practice outcomes associated with the regulatory guidelines. From literature regarding regulatory agencies, such as CMS, JCAHO, and other professional healthcare organizations' recommendations for the discharge process for the diabetic patient, all agencies recommended practice standards to assist with healthcare professionals' adherence and compliance, as well as readmission reduction.

Objective 2

The majority of the participants in the study were female (77.3%), and they were familiar with the hospital discharge procedures for diabetics (90.4%) and familiar with the recommended discharge procedures for diabetics (81.8%). In the pre- and posttest question 5 of the survey ("How do you assist in the prevention of readmission of the

diabetic patient? Medication reconciliation”), it appeared that 85.7% of participants provided more assistance in medication reconciliation after the intervention ($M = 4.86$, $SD = 0.36$) than 61.1% before the intervention ($M = 4.50$, $SD = 0.79$). The answers to question 13 of the survey (“Are any assessment tools used in assessing educational needs of diabetics at discharge?”) also showed a large difference pre- and postintervention. A total of 68.2% used more assessment tools in assessing educational needs of diabetics at discharge after the intervention ($M = 4.50$, $SD = 0.80$) than the 27.3% before the intervention ($M = 3.73$, $SD = 1.12$). From these results, it can be concluded that the participants had more knowledge on prevention of readmission and tools used for educational needs postintervention.

Objective 3

Coordination with the nursing director and utilization of recommendation from healthcare regulatory agencies regarding the diabetic discharge process directed the guideline development. A total of 20 items completed the new guideline (Appendix H). The multidisciplinary team evaluated the guideline by utilizing the AGREE II evaluation tool (Appendix I). Of the six participants who evaluated the guideline, 100% recommended that the guideline be adapted for practice.

Objective 4

Overwhelming approval from stakeholders was given for the adaptation of the guideline for implementation. The guideline was implemented on June 29, 2017, on the medical-surgical/telemetry units for approximately 1 week, and 100% use was accomplished by APRNs and RNs on two shifts (7:00 a.m. to 7:00 p.m. and 7:00 p.m. to 7:00 a.m.).

Objective 5

One week postguideline implementation, 100% of guideline use was collected and the hospital's electronic discharge data explored to evaluate nursing compliance. This review was conducted over a 2-week period. Data analysis showed that of the 56 discharges completed and guideline sheets collected, 76% of APRNs and RNs were in compliance with the recommended practices. It was noted that the remaining 24% of APRNs and RNs who did not adhere to recommendations were those who did not participate in the survey (those who did not meet inclusion criteria) and were new nurses to the profession. The Hawthorne effect could have contributed to this result, in which APRNs and RNs increase their compliance level with recommended practices during the study. According to McCambridge, Witton, and Elbourne (2014), "awareness of being observed or having behavior assessed engenders beliefs about researcher expectations" (para 4).

Expected and Unexpected Findings

An unexpected and interesting finding of the project was the attitudes of APRNs and RNs. They felt more comfortable with the guideline than without it in providing care to diabetic patients, and utilization of the guideline made the discharge process more effective in educating patients. Pretest-posttest findings revealed a gap in nursing knowledge related to recommendations from healthcare regulatory agencies. Of the APRNs and RNs who attended the diabetic seminars, 98% understood the content, as evidenced by results from the posttest. Nurses' knowledge of the recommended diabetic discharge instructions improved, as evidenced by adherence to the discharge guideline process. The guideline evaluation tool AGREE II proved to be an effective standard, as

evidenced by the 100% acceptance level of the multidisciplinary team regarding guideline evaluation.

Unexpected findings were that APRNs and RNs who did not participate in the survey (those who did not meet inclusion criteria) did not properly utilize the new guideline, despite attending the diabetic educational seminars. It was also unexpected, and raised questions, that after the diabetic educational seminars, only two items on the survey showed significant differences.

Strengths and Limitations

Strengths of the study included the positive attitudes of the practice staff in utilizing the new guideline, the collaborative support of the unit's director, and the 100% support from the multidisciplinary team in completing the guideline evaluation. The guideline evaluation was completed in 2 days by all members of the multidisciplinary team, who reported that the AGREE II guideline evaluation tool was very useful and effective in evaluating the new guideline. The diabetic seminars were lively and interactive, and APRNs and RNs expressed their willingness to use the new tool. After the week of implementation, requests were made by APRNs and RNs for continued use of the guideline. Due to the positive results of guideline utilization, members of the administrative team explored the feasibility of the guideline for utilization in other areas or units of the hospital and possibly within the electronic health system.

The small sample size was a limitation of the study. This sample included nurses from only one nursing unit of the hospital, thus limiting generalizability. Additionally, the timeframe for the study could be extended over a longer period and a longitudinal study format used to analyze any change over time. Lack of full completion of the survey

by some participants, as evidenced by several missing answers to survey questions, could have altered the survey results. Finally, the diabetic educational seminars did not extend to the night shifts (7:00 p.m. to 7:00 a.m.), and several shift schedules prohibited 100% attendance at diabetic seminars.

Implications for Practice

A standardized diabetic discharge guideline as a part of an integrated healthcare system assisted APRNs and RNs with adherence to evidence-based practices to include care continuity. Utilization of the guideline may also assist in reducing the rate of readmissions, as well as improving patient quality of life postdischarge. The significance of developing a standardized evidence-based guideline as a method of delivering care to the diabetic population was determined and will impact healthcare outcomes, healthcare delivery, and healthcare policy.

Healthcare Outcomes

The guideline implementation and evaluation of a diabetic discharge guideline at a for-profit hospital in South Florida fostered nurses' compliance and competence in the utilization of evidence-based standards to guide and enhance care and care delivery. The utilization of a standardized practice guideline can be helpful in alleviating or reducing potential adverse events, such as medication errors, and unnecessary delays throughout patients' hospital experience pathway. The guideline can enhance delivery of the discharge education process in a standardized manner to meet patients' needs as well as improve the organizational benchmark status among top hospital nursing staff.

Organizational benchmarking is used to determine how organizations are performing or achieving desired performance. Through benchmarking, the organization

can identify potential or actual gaps in its performance of the project objectives. Then, with critiques, the organization strives for gap closure and performance improvement (National Academies of Sciences and Engineering Medicine, 2017).

Healthcare Delivery

Implementation of the standardized evidence-based diabetic discharge guideline can change the standard of current healthcare practices to that of evidence-based practice. The information gathered from this study can be used to identify strategies to address change. The information can be used to promote nurses' adherence to practices, improve the discharge process, reduce readmissions, increase patients' quality of life after discharge, and reduce hospital costs for diabetes care. As reported, the effective collaboration and communication with the leadership group and interprofessional team in implementing this guideline can be helpful as a model to other hospitals and units in creation of a working relationship adhering to guidelines and practice.

The guideline created and implemented may serve as a model for evidence-based information delivery, increase awareness and extended knowledge as they relate to diabetes, and provide a straightforward method of delivery for utilization in other nursing units of the hospital. The guideline may be used as a vehicle to demonstrate that a standardized process should be utilized to promote healthcare professionals' adherence to and compliance with evidence-based processes. Use of the guideline will also meet the current and future needs of the diabetic patient population.

Healthcare Policy

This project will impact healthcare policy by encouragement of adherence to recommendations from regulatory bodies and by the conformity to evidence-based

guidelines for diabetic care during hospitalization. Creation of this evidence-based diabetic discharge process supported the recommended guidelines on diabetic care and may allow the incorporation of recommended guideline practices within healthcare organizations statewide and nationwide to promote institutional practice and assist nurses to initiate and remain in compliance with best practices.

Future Research

This study was undertaken to promote nurses' adherence to recommended guidelines to provide care to the diabetic hospital population and to assist in the discharge process. In the future, a quantitative practice study of this nature could increase and widen in size and diversity the nurse population with inclusion of a larger sample size to replicate this project. Nurses could be studied at multiple sites, such as different hospital units, hospitals, and states to enhance generalizability. Future researchers could also investigate different types of healthcare institutions, such as aftercare clinics, to identify different cultures of research acceptance. Healthcare evolvement, especially for nurses, stems from evidence-based research that improves healthcare delivery and outcomes. When a research culture governs nursing practice globally, a congruent healthcare delivery system can emerge, producing care continuity through practice standardization (Tingen, Burnett, Murchison, & Haidong, 2009).

Follow-up studies could also be conducted with data collection via a convenience sample on the hospital implementation unit with APRNs and RNs at 3, 6, and 9 months to ascertain maintenance of adherence or compliance. Continuous education on evidence-based practices at orientation of new staff members and physicians is also recommended. The integration of the new discharge guideline as part of the hospital electronic medical

records, and even the healthcare system globally, would serve as a standardized measure for diabetic care. Finally, future research may be undertaken with a qualitative approach to capture patients' views and experiences regarding care delivery in nurses' utilization of evidence-based recommended guideline practices and nurses' views and experiences with the guideline practices.

Summary

The diabetic discharge guideline was successfully implemented. Evaluation of nurses' knowledge took the form of pretest and posttest surveys, and data analysis revealed statistically significant differences in survey responses for several survey questions. The findings also showed a 100% approval rating for guideline use by the multidisciplinary team. The overall findings in implementation and evaluation indicated that 76% of nurses showed adherence to guideline recommendations. The remaining 24% who did not properly adhere to guideline recommendations were new nurses who did not participate in the survey. Overall, the project was a success; the new guideline was recommended by the administrative team for continued use on the medical/surgical-telemetry units and in other nursing units of the hospital. This use would assure greater nursing healthcare delivery and patient benefits on discharge.

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Appendix A

Nova Southeastern University Institutional Review Board Exemption Letter



MEMORANDUM

To: **Marjorie V Scarlett, MSN, BSN, RN**
College of Nursing

From: **Jo Ann Kleier, Ph.D., Ed.D.,**
Center Representative, Institutional Review Board

Date: **December 27, 2016**

Re: **IRB #: 2016-624; Title, "Evidence-based Diabetic Discharge Guideline: A Standardized Initiative to Promote Nurses Adherence"**

I have reviewed the above-referenced research protocol at the center level. Based on the information provided, I have determined that this study is exempt from further IRB review under **45 CFR 46.101(b) (Exempt Category 1 Exempt Category 2)**. You may proceed with your study as described to the IRB. As principal investigator, you must adhere to the following requirements:

- 1) **CONSENT:** If recruitment procedures include consent forms, they must be obtained in such a manner that they are clearly understood by the subjects and the process affords subjects the opportunity to ask questions, obtain detailed answers from those directly involved in the research, and have sufficient time to consider their participation after they have been provided this information. The subjects must be given a copy of the signed consent document, and a copy must be placed in a secure file separate from de-identified participant information. Record of informed consent must be retained for a minimum of three years from the conclusion of the study.
- 2) **ADVERSE EVENTS/UNANTICIPATED PROBLEMS:** The principal investigator is required to notify the IRB chair and me (954-262-5369 and Jo Ann Kleier, Ph.D., Ed.D., respectively) of any adverse reactions or unanticipated events that may develop as a result of this study. Reactions or events may include, but are not limited to, injury, depression as a result of participation in the study, life-threatening situation, death, or loss of confidentiality/anonymity of subject. Approval may be withdrawn if the problem is serious.
- 3) **AMENDMENTS:** Any changes in the study (e.g., procedures, number or types of subjects, consent forms, investigators, etc.) must be approved by the IRB prior to implementation. Please be advised that changes in a study may require further review depending on the nature of the change. Please contact me with any questions regarding amendments or changes to your study.

The NSU IRB is in compliance with the requirements for the protection of human subjects prescribed in Part 46 of Title 45 of the Code of Federal Regulations (45 CFR 46) revised June 18, 1991.

Cc: **Kelly Goebel**

Appendix B**Letter of Approval and Support****NORTH SHORE**
Medical Center

1100 Northwest 95th Street
Miami, Florida 33150-2098
Tel 305.835.6103

To: Dr. Eglintine Rigaud
Director of the DNP program
Nova Southeastern University
College of Nursing

This letter is to inform you that I have read and approved the DNP project entitled: *Evidence-based Diabetic Discharge Guideline: A Standardized Initiative to Promote Nurse Adherence* by Marjorie Scarlett, MSN, RN. I give consent for the project and will support her through the implementation process at North Shore Medical Center located at 1100 NW 95th Street, Miami, Florida, 33150.

Name: Elva Hamilton, MSN, RN
Director of Medical Surgical Service


Signature

11/21/16
Date

Appendix C

Flyer



**Nova Southeastern University DNP Student,
Marjorie Scarlett invites you to participate in
the development of a proposed guideline for
RN's and APRN's usage on the unit!**

For more details please see Marjorie Scarlett,
No later than January 2017

Appendix D

Adult Informed Consent

Consent Form for Participation in the Research Study Entitled:

Evidence-based Diabetic Discharge Guideline: A Standardized Initiative to Promote Nurses' Adherence

Funding Source: None.

IRB protocol #

Principal investigator
Marjorie Scarlett, MSN, RN
12768 SW 21st Street
Miramar, Florida, 33027
(954) 240-2385
(239) 274-6974

Co-investigator
Dr. Kelly Goebel, DNP, APRN, RN
College of Nursing
3650 Colonial Court
Fort Myers, Florida, 33913

For questions/concerns about your research rights, contact:
Human Research Oversight Board (Institutional Review Board or IRB)
Nova Southeastern University
(954) 262-5369/Toll Free: 866-499-0790

IRB@nsu.nova.edu

Site Information:
North Shore Medical Center
1100 NW 95th Street,
Miami, Florida, 33150

Initials: _____

Date: _____

What is the study about?

The purpose of this project is to develop an evidence-based quality improvement guideline for Registered Nurses (RNs) and Advanced Practice Registered Nurses (APRNs) to enhance competency in discharge patient education for the diabetic population.

The project aim is to:

- (1) identify CMS, JCAHO, and other professional healthcare organizations guidelines as they relate to nurses' diabetic discharge instructions.
- (2) determine level of nurses' knowledge relating to evidence-based discharge practice process
- (3) develop a quality improvement plan which included the development of an evidence-based guideline for nurse-driven diabetic discharge instructions.
- (4) present guideline to stakeholders, and implement diabetic discharge guideline
- (5) evaluate nursing compliance with evidence-based practice discharge guideline.

Why are you asking me?

You are being asked to participate in this project because you are a healthcare professional, who provides direct care to patients with diabetes mellitus in an acute care hospital.

What will I be doing if I agree to be in the study?

You will be asked to complete a demographic form, answer two sets of 13 questions, using a Likert scale in an online format, one at the beginning, and the other at the end of the project. After which, you will be asked to attend a 90 minute educational session on 2 separate days for the new guideline. You may also be asked to complete a guideline evaluation for final guideline analysis.

Is there any audio or video recording?

There will be no audio or video recording of the meeting to be held.

What are the dangers to me?

There are no dangers associated with this project. If you have questions about the research, your research rights, or if you experience any injury because of the research, please contact Marjorie Scarlett, principal investigator, and Dr. Kelly Goebel, project chair. You may also contact the IRB at the numbers indicated above with questions about your research rights.

Are there any benefits to me for taking part in this research study?

There are no benefits to you for participating in this project.

Will I get paid for being in the study? Will it cost me anything?

There are no costs to you or payments made for participating in this project.

Initials: _____

Date: _____

Appendix E
Demographic Form

1. What is your age? _____
2. What is your gender?
 - a. Male
 - b. Female
3. What is your primary language? _____
4. What is your nationality? _____
5. What is your highest level of nursing education?
 - a. ADN
 - b. BSN
 - c. MSN
 - d. DNP
6. What certifications do you hold? _____
7. How long have you been working as a nurse? _____
8. How long have you worked in this hospital? _____
9. How long have you worked on this unit? _____
10. Are you familiar with the hospital discharge procedures for diabetics?

11. Are you familiar with the recommended discharge procedures for diabetics?

Appendix F

SurveyMonkey Prequestionnaire

Please answer the following questions on a 5-point scale:

1= Strongly Disagree, 2 = Disagree, 3 = Neither, 4 = Agree, 5 = Strongly Agree

1. What are your views on the hospital's current discharge education protocol?

- Provides adequate time for discharge teaching
1 2 3 4 5
- Disagree with institution's protocol on discharge
1 2 3 4 5
- Not familiar with hospital's discharge guidelines for diabetics
1 2 3 4 5
- Guideline does not provide enough education for diabetic discharge teaching
1 2 3 4 5

2. Discharge instructions for the diabetic patient presented in a clear and concise manner.

1 2 3 4 5

3. Discharge planning utilizes a team like approach.

1 2 3 4 5

4. When do you begin discharge planning and teaching for the diabetic patient?

- Upon Discharge
1 2 3 4 5
- Within two to three days of admission
1 2 3 4 5
- Upon Admission
1 2 3 4 5
- Never
1 2 3 4 5

5. How do you assist in the prevention of readmission of the diabetic patient?

- Explanation of discharge instructions
1 2 3 4 5
- Self-care and ongoing discharge instructions
1 2 3 4 5
- Interprofessional collaboration with other healthcare professionals
1 2 3 4 5
- Medication reconciliation
1 2 3 4 5

6. Are your current discharge instructions sheets written at a reading level that is easily understood as recommended by the Joint Commission?

1 2 3 4 5

7. Question and answer period is allowed during the discharge process

1 2 3 4 5

8. Do you conduct daily teaching at a suitable time to the patient?

1 2 3 4 5

9. Do you utilize a discharge facilitator for patients who speak a language besides English, or have a disability such as deafness?

1 2 3 4 5

10. What are some of the resources you provide to patients to assist in the transition process from hospital to home?

- Educational material
1 2 3 4 5
- Referral to community services
1 2 3 4 5
- Discharge instructions
1 2 3 4 5
- Follow up appointments
1 2 3 4 5
- Nothing
1 2 3 4 5

11. Follow-up phone calls done 24 to 48 hours after patients are discharged.

1 2 3 4 5

12. Do you incorporate teach-back method in the discharge process?

1 2 3 4 5

13. Are any assessment tools used in assessing educational needs of diabetics at discharge?

1 2 3 4 5

Appendix G

SurveyMonkey Postquestionnaire

Please answer the following questions on a 5-point scale:

1= Strongly Disagree, 2 = Disagree, 3 = Neither, 4 = Agree, 5 = Strongly Agree

1. What are your views on the hospital's current discharge education protocol?

- Provides adequate time for discharge teaching
1 2 3 4 5
- Disagree with institution's protocol on discharge
1 2 3 4 5
- Not familiar with hospital's discharge guidelines for diabetics
1 2 3 4 5
- Guideline does not provide enough education for diabetic discharge teaching
1 2 3 4 5

2. Discharge instructions for the diabetic patient presented in a clear and concise manner.

1 2 3 4 5

3. Discharge planning utilizes a team like approach.

1 2 3 4 5

4. When do you begin discharge planning and teaching for the diabetic patient?

- Upon Discharge
1 2 3 4 5
- Within two to three days of admission
1 2 3 4 5
- Upon Admission
1 2 3 4 5
- Never
1 2 3 4 5

5. How do you assist in the prevention of readmission of the diabetic patient?

- Explanation of discharge instructions
1 2 3 4 5
- Self-care and ongoing discharge instructions
1 2 3 4 5
- Interprofessional collaboration with other healthcare professionals
1 2 3 4 5
- Medication reconciliation
1 2 3 4 5

6. Are your current discharge instructions sheets written at a reading level that is easily understood as recommended by the Joint Commission?

1 2 3 4 5

7. Question and answer period is allowed during the discharge process

1 2 3 4 5

8. Do you conduct daily teaching at a suitable time to the patient?

1 2 3 4 5

9. Do you utilize a discharge facilitator for patients who speak a language besides English, or have a disability such as deafness?

1 2 3 4 5

10. What are some of the resources you provide to patients to assist in the transition process from hospital to home?

- Educational material
1 2 3 4 5
- Referral to community services
1 2 3 4 5
- Discharge instructions
1 2 3 4 5
- Follow up appointments
1 2 3 4 5
- Nothing
1 2 3 4 5

11. Follow-up phone calls done 24 to 48 hours after patients are discharged.

1 2 3 4 5

12. Do you incorporate teach-back method in the discharge process?

1 2 3 4 5

13. Are any assessment tools used in assessing educational needs of diabetics at discharge?

1 2 3 4 5

Appendix H

Evidence-Based Diabetic Discharge Guideline

Patient's Label

●(Check Below)

- Begin discharge teaching upon admission and daily

- Teaching sessions conducted without medical jargons

- Care Transition Time Out completed (Social worker and RN or APRN)

- Medication reconciliation (Home medications updated)

- Prescriptions handed to patients and new medications explained

- Medications side effects done by 2 RNs or APRNs

- Patient able to teach-back side effects (RNs and APRNs must sit and speak with patient regarding discharge instructions and medication side effects)

- Demonstration of insulin administration and written material provided
_____ is easily understood

- Oral and written instructions provided on diabetes care or other patient care

- Assessment of need to administer next dose of medication prior to discharge

- Core Measure elements all met (attach core measure time out sheet)

- Question and Answer time allowed

- Discharge teaching conducted at a time suitable to patient/family

- Utilization of discharge facilitator for patients who speak another language besides English, or for patients with certain disabilities

- Wound pictures taken (if applicable)

- Problem list completed (Classification, SNOMED for all problems)

- Address common myths about diabetes that patients refer to or may encounter

- Vaccines: PN _____ FLU _____

- Follow-up appointment made/referral to community services done

- Follow-up with telephone calls within 24 to 48 hours after being discharged

Sign: _____ RN/APRN

Sign: _____ RN/APRN

Appendix I

AGREE II Evaluation Tool

Please answer the following questions on a 7-point scale:

1= Strongly Disagree to 7 = Strongly Agree

SCOPE AND PURPOSE

1. The overall objective of the guideline is specifically described.
1 2 3 4 5 6 7
2. The health problem addressed by the guideline is specifically described.
1 2 3 4 5 6 7
3. The population to whom the guideline is meant to apply is specifically described.
1 2 3 4 5 6 7

STAKEHOLDER INVOLVEMENT

4. The guideline evaluation group includes all relevant professionals.
1 2 3 4 5 6 7
5. The views and preferences of the target group (healthcare professionals) have been sought.
1 2 3 4 5 6 7
6. The target users of the guideline are clearly defined.
1 2 3 4 5 6 7
7. The guideline has been piloted among target users.
1 2 3 4 5 6 7

RIGOR OF DEVELOPMENT

8. Systematic methods were used to search for evidence.
1 2 3 4 5 6 7
9. The criteria for selecting evidence are clearly described.
1 2 3 4 5 6 7
10. The methods used for formulating the recommendations are clearly described.
1 2 3 4 5 6 7
11. The health benefits, side effects, and risks have been considered in formulating the recommendations.
1 2 3 4 5 6 7
12. There is an explicit link between the recommendations and the supporting evidence.
1 2 3 4 5 6 7
13. The guideline will be externally reviewed by experts prior to finalization.
1 2 3 4 5 6 7
14. A procedure for updating the guideline is provided.
1 2 3 4 5 6 7

CLARITY AND PRESENTATION

15. The recommendations are specific and unambiguous.

1 2 3 4 5 6 7

16. The different options for management of the condition (discharge instructions) are clearly presented.

1 2 3 4 5 6 7

17. Key recommendations are easily identifiable.

1 2 3 4 5 6 7

18. The guideline provides tools (advice) on how the recommendations can be put into practice.

1 2 3 4 5 6 7

APPLICATION

19. The potential organization barriers in applying the recommendation have been discussed.

1 2 3 4 5 6 7

20. The possible cost implications of applying the recommendations have been considered.

1 2 3 4 5 6 7

21. The guideline presents key review criteria for monitoring and /or audit purposes.

1 2 3 4 5 6 7

EDITORIAL INDEPENDENCE

22. The guideline is editorially independent from the funding body.

1 2 3 4 5 6 7

23. Conflicts of interest of guideline development members have been reported.

1 2 3 4 5 6 7

GENERAL COMMENTS:**OVERALL GUIDELINE ASSESSMENT**

1. Rate the overall quality of this guideline.

1 2 3 4 5 6 7

2. I would recommend this guideline for use

Yes _____

Yes, with the following modifications

No _____

Appendix J
Additional Tables

Table J1

Descriptive Statistics of Responses for Pretest and Posttest Surveys

	Pretest			Posttest		p_w	p_t
	N	Mean (SD)	Median	Mean (SD)	Median		
Q1_1	10	4.00 (1.31)	5.00	4.77 (0.83)	5.00	0.077	0.081
Q1_2	9	3.42 (1.24)	3.00	3.29 (1.38)	3.00	0.586	0.594
Q1_3	5	3.00 (1.41)	2.00	3.27 (1.42)	3.00	0.317	0.374
Q2	2	3.45 (0.82)	4.00	3.50 (0.76)	4.00	0.317	0.500
Q3	22	4.05 (1.05)	4.00	4.23 (1.34)	5.00	0.452	0.611
Q4_1	11	2.23 (1.69)	1.00	1.53 (1.07)	1.00	0.242	0.251
Q4_2	11	2.38 (1.71)	2.00	1.59 (1.06)	1.00	0.141	0.134
Q4_3	22	4.64 (0.58)	5.00	4.91 (0.29)	5.00	0.058	0.056
Q4_4	10	1.38 (1.12)	1.00	1.33 (1.05)	1.00	0.785	0.872
Q5_1	18	4.63 (0.60)	5.00	4.81 (0.40)	5.00	0.157	0.163
Q5_2	20	4.30 (1.08)	5.00	4.64 (0.73)	5.00	0.107	0.107
Q5_3	17	4.50 (0.79)	5.00	4.71 (0.56)	5.00	0.096	0.111
Q5_4	17	4.50 (0.79)	5.00	4.86 (0.36)	5.00	0.046*	0.041*
Q6	20	4.38 (0.74)	5.00	4.81 (0.40)	5.00	0.059	0.057
Q7	22	4.18 (1.01)	4.50	4.73 (0.70)	5.00	0.061	0.056
Q8	20	4.05 (1.10)	4.00	4.41 (1.05)	5.00	0.313	0.343
Q9	22	4.32 (0.78)	4.50	4.59 (0.91)	5.00	0.144	0.329
Q10_1	21	4.67 (0.48)	5.00	4.77 (0.43)	5.00	0.480	0.493
Q10_2	21	4.43 (0.75)	5.00	4.73 (0.46)	5.00	0.166	0.162
Q10_3	21	4.67 (0.48)	5.00	4.86 (0.35)	5.00	0.157	0.162
Q10_4	21	4.62 (0.50)	5.00	4.77 (0.43)	5.00	0.257	0.267
Q10_5	11	1.64 (1.28)	1.00	1.33 (0.97)	1.00	0.564	0.588
Q11	22	3.64 (1.40)	4.00	4.32 (1.09)	5.00	0.101	0.074
Q12	22	4.36 (0.90)	5.00	4.82 (0.39)	5.00	0.059	0.057
Q13	22	3.73 (1.12)	4.00	4.50 (0.80)	5.00	0.022*	0.018*

Note. SD = standard deviation. p_w = p -value of Wilcoxon signed-rank test. p_t = p -value of paired t -test.

*Indicates significance at the 0.05 level.

Table J2

Responses by Item to AGREE II Tool

Item	Frequency of Survey Responses						
	1	2	3	4	5	6	7
1	0	0	0	0	0	0	6
2	0	0	0	0	0	0	6
3	0	0	0	0	0	0	6
4	0	0	0	0	0	1	5
5	0	0	0	0	0	0	6
6	0	0	0	0	0	0	6
7	0	0	1	0	3	2	0
8	0	0	0	0	0	0	6
9	0	0	0	0	0	0	6
10	0	0	0	0	0	0	6
11	0	0	0	0	0	0	6
12	0	0	0	0	0	1	5
13	0	0	0	1	3	2	0
14	0	0	0	0	0	0	6
15	0	0	0	0	0	0	6
16	0	0	0	0	0	0	6
17	0	0	0	0	0	0	6
18	0	0	0	0	1	1	4
19	0	1	0	1	1	1	2
20	0	0	0	0	4	1	1
21	0	0	0	0	1	3	2
22	NA	NA	NA	NA	NA	NA	NA
23	NA	NA	NA	NA	NA	NA	NA
Overall quality of the guideline	0	0	0	0	0	1	5

Note. Domain 1: Scope and Purpose (items 1-3); Domain 2: Stakeholder Involvement (items 4-6); Domain 3: Rigor of Development (items 7-14); Domain 4: Clarity of Presentation (items 15-17); Domain 5: Applicability (items 18-21); Domain 6: Editorial Independence (items 22-23). Overall assessment includes the rating of the overall quality of the guideline and whether the guideline would be recommended for use in practice. NA: not applicable.

Editor Verification for Marjorie V. Scarlett

Noelle Sterne, Ph.D.

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October 3, 2017

By email:

To: Dr. Kelly Goebel

From: Dr. Noelle Sterne

Cc: Marjorie V. Scarlett

Dear Dr. Goebel:

As an approved professional editor for Nova Southeastern University, I have reviewed, edited, and provided corrections on grammar, format, and style conventions consistent with the *Nova Southeastern University College of Nursing Doctor of Nursing Practice Project Guide (2017)* and the *Publication Manual of the American Psychological Association (6th edition)* for the DNP Project which Marjorie V. Scarlett has submitted to her committee at Nova Southeastern University College of Nursing.

Other than my editorial assistance to Ms. Scarlett as described above, I did not participate in the rewriting of her original work. I trust her DNP Project will be a significant and important contribution to academic scholarship in the professional nursing community.

A pleasure to serve.

Sincerely,

Noelle Sterne, Ph.D.

Where we are is where we give.

Noelle Sterne, Ph.D.

Website: <http://www.trustyourlifenow.com/>

Author, *Challenges in Writing Your Dissertation: Coping With the Emotional,*

Interpersonal, and Spiritual Struggles. Rowman & Littlefield Education, 2015.
<https://rowman.com/ISBN/9781475815030/Challenges-in-Writing-Your-Dissertation-Coping-with-the-Emotional-Interpersonal-and-Spiritual-Struggles>

Author, *Trust Your Life: Forgive Yourself and Go After Your Dreams*. Unity Books, 2011.
https://www.amazon.com/Trust-Your-Life-Forgive-Yourself-ebook/dp/B005EN73MG/ref=sr_1_2?ie=UTF8&qid=1480446174&sr=8-2&keywords=noelle+sterne