

Fall 12-2017

Improving Discharge Planning Using the Re-Engineered Discharge (RED) Program

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Recommended Citation

Roberts, Sterling L.; Moore, Leslie C.; and Jack, Brian, "Improving Discharge Planning Using the Re-Engineered Discharge (RED) Program" (2017). *Doctor of Nursing Practice (DNP) Translational and Clinical Research Projects*. 21.
<https://kb.gcsu.edu/dnp/21>

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Improving Discharge Planning Using the Re-Engineered Discharge (RED) Program

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Abstract

The 12-actionable items of the Re-Engineered Discharge Program (RED) are equipped to address essential areas to prevent hospital re-visits. Evidence supports the use of nurses to complete these essential components of hospital interventions. The aims of this project were to: 1) assess nurses' readiness to learn prior to receiving education on the RED Program, and 2) measure the utilization of the RED discharge process from patient chart reviews following an educational intervention focused on the RED 12-actionable items. Participants ($N = 69$) scored high $M = 219.8$ ($SD 23.7$) on the Self-Directed Learning Readiness – Adult Scale, indicating the nurses had high self-directed readiness to learn prior to the educational intervention. Chart reviews found that utilization of the 12-actionable items pre-intervention, ($n = 60$) $M = 6.55$ ($SD 1.478$) compared to post-intervention ($n = 60$) $M = 10.08$ ($SD 1.544$) indicated a statistically significant improvement in discharge planning ($t = 17.730$, $p = .000$ (CI 3.13 – 3.93). The study supports that RED discharge program focused education sessions for nurses with higher levels of self-directed readiness to learn are effective in promoting improvement in discharge planning.

Keywords: readmission, systematic discharge process, nurse, education, readiness to learn, re-engineered discharge process.

Improving Discharge Planning Using the Re-Engineered Discharge (RED) Program

Preventable hospital readmissions within 30-days of discharge are of great concern to the healthcare community in the United States (U.S.). Fifteen to twenty-five percent of patients discharged from an acute care facility will be readmitted within 30-days (Centers for Healthcare Quality and Payment Reform [CHQPR], 2013). In 2011, 41.3 billion dollars were associated with 30-day, all cause readmissions in the U.S., (Hines, Barrett, Jiang, & Steiner, 2014). There are several diagnoses associated with frequent readmissions, such as congestive heart failure (CHF) which has reached an epidemic level nationally (Eastwood et al., 2016). CHF is receiving a great deal of attention from the healthcare community in attempts to improve transitional care for this population. In the U.S. alone approximately 550,000 new cases of CHF are expected annually. The prevalence of CHF is more than 5.8 million in the U.S. and 23 million worldwide. By the year 2030, it is estimated there will be an increase of three million new cases of CHF, resulting in a 25% increase in prevalence from 2010 (American Heart Association, 2013). To further illustrate the impact of this clinical syndrome on public health, the mortality rate in Georgia was between 177-198 per 100,000 members of the population from years 2011 to 2013 (Centers for Disease Control and Prevention, 2016).

Problem Statement

Currently, CHF is the most common readmission diagnosis for those over the age of 65 (Agency for Healthcare Quality and Research [AHRQ], 2013). However, there are other leading readmission diagnosis such as; Chronic Obstructive Pulmonary Disease (COPD), Renal Disease, Pneumonia, and infectious processes (Eastwood et al., 2016; Gohil et al., 2015; Hines, Barrett, Jiang, & Steiner, 2014; Prescott, Sherer et al., 2016; Sjoding, Iwashyna, Theodore, & Cooke, 2015). This study is designed to assist the nurses at a Rural Acute Care Facility, located in the

Southeastern region of the country meet the needs of their residents. The top culprits of readmissions at the southeastern facility within 30-days of discharge are COPD, CHF, Septicemia, Renal Failure, and Pneumonia (Oconee Regional Medical Center [ORMC], 2016). The demographic based aspects of the proposed area of the study will provide the definition of “rural area” for this project and illustrate their medical and social vulnerability (Williams, Andrews, Zanni, & Stewart, 2012). Forty-six percent of the residents in this town live below the poverty level. The median income is \$17,117 and \$11,193 annually for males and females, respectively (United States Census Bureau, n.d.). To further define the necessity of this proposed project, a study conducted by Vesterlund et al (2015), indicated patients discharged from a Community Non-Profit Hospital, that did not receive discharge education through a systematic process, were seven times more likely to be re-admitted within 30-days (Vesterlund, Granger, Thompson, Coggins, & Oermann, 2015).

Purpose

The purpose of this project was to assess nurses’ readiness to learn prior to an education initiative on the RED program and to measure the delivery of the discharge processes among readmitted patients. The lack of evidential findings in the literature on the utilization of a systematic discharge process in rural areas led to the choice of the target population studied. The United States Census Bureau reported a population of 18,931 residents for this town in 2015 (United States Census Bureau, n.d.). The intent of the project was to answer two-fold questions: 1) What is the level of readiness to learn prior to an education intervention designed to teach the Re-Engineered Discharge (RED) program (Intervention) and 2) will the level of utilization of the 12 reinforceable actions of the RED program increase after the education initiative (Outcome) among rural acute care nurses (Population), compared to the standard discharge method used

prior to the implementation of the education intervention (Comparison) within an eight-week time-period (Time)? The proposed study addressed the following specific aims and clinical questions:

Specific Aims:

1. To assess nurses' readiness to learn the RED Program.
2. To determine if a relationship exists between nurses' readiness to learn with the utilization of the RED Program.
3. To determine if a relationship exists between nurses' gender, age, level of education, level of experience, area of specialty, and employment status with the utilization of the RED Program.
4. To determine if an education intervention will affect the implementation of the RED Program.

Clinical Questions:

1. What is the level of readiness to learn among the nurses prior to receiving an education intervention?
2. Is there a relationship between nurses' demographics (i.e., age, level of education, nursing specialty area, employment status, and level of experience) and the nurses' readiness to learn pre-education intervention?
3. What is the effect of a REDs Program-based educational intervention on nurses' discharge planning?
4. What is the nurses' level of satisfaction with the RED discharge process?

Needs Assessment

This study was designed to address the lack of evidential findings in the current literature on the utilization of systematic discharge processes in rural acute care facilities. There is substantial evidence to support those residing in rural areas and living below the poverty level, have less access to healthcare (Belden, Leafman, Nehrenz, & Miller, 2012; Caldwell, Ford, Wallace, Wang, & Takahashi, 2016; Vesterlund et al., 2015; Williams et al., 2012). The population of patients admitted to the community-based acute care facility share these same demographics and complexity of care (ORMC, 2016). Patients discharged from community-based non-profit hospitals that did not receive discharge education through a systematic process are at greater risk for readmission within 30-days (Vesterlund et al., 2015). Therefore, the goal of this project was to address these areas of concern and vulnerability through an education intervention for the nurses at a Southeastern Acute Care Facility based on the evidence-based RED discharge process.

Feasibility

Approval was obtained from the Institutional Review Board at the Southeastern Acute Care Facility and Georgia College. The nurse education intervention occurred in the Computer Education Center at the acute care facility. After obtaining informed consent, participants had access to an individual computer to complete the associated questionnaire through a link provided by Guglielmino and Associates, LLC. Multiple education sessions at varying time intervals were provided by the primary investigator over the period of a week. The educational intervention was supported by using a PowerPoint presentation via a projector system. All RED education material is free upon request from the AHRQ. A pre-and post-intervention chart review was conducted utilizing the acute care facilities' Medi-tech patient database. The only

financial expenditure associated with this project was the questionnaire provided by Guglielmino and Associates, at the expense of the primary investigator.

Background

Implementation of a system-wide change to the current discharge process started with an education initiative for the nursing division at a southeastern acute care facility. A plethora of evidential findings supports the necessity of conducting patient discharges in a systematic manner to prevent readmissions. The new approach addressed specific areas of care with every discharge; such as medication reconciliation, follow-up care, and patient education. The discharge method also allows for flexibility to individually address the varying needs of patients (Arnold, Buys, & Fullas, 2015; Bradley et al., 2013; Donaho et al., 2015; Eastwood et al., 2016; Keane, Yang, Hernandez, Anthony, & Alan, 2016; Kociol et al., 2012; Vadlamani, Anderson, & Kumar, 2016; Vesterlund et al., 2015; White, Roxanne, Maureen, Brinker, & Howie-Esquivel, 2013).

The implementation of the education intervention into practice was a central component of the project. Likewise, are the individual characteristics of the nurse that are influential with their utilization of evidence-based practice standards. The professional nurses at this facility pose varying levels of education and experience. Other contributing factors are those that are intrinsic to the individual, such as their readiness to learn. Each of these components affects the nurses' confidence in and ability to successfully integrate evidence-based findings into the practice setting (Melnyk, 2013; Swanson-Britt & Berndt, 2013).

Review of Literature

Most evidential findings focus on CHF and other co-morbid conditions. However, this is not the only diagnosis of great concern when combating frequent readmissions. As discussed,

other culprits on higher readmission rates are COPD, Pneumonia, Renal Disease, and Infection related admissions (Eastwood et al., 2016; Gohil et al., 2015; Hines, Barrett, Jiang, & Steiner, 2014; Prescott, Sherer et al., 2016; Sjoding, & Iwashyna, 2014).

A review of current literature was conducted regarding frequent readmission, diagnoses, and strategies for prevention using databases from CINAHL, MEDLINE/PubMed, EBSCO, and the Cochrane library. Databases were searched using keywords such as common readmission diagnosis, 30-day readmission, and prevention strategies. The initial search returned 8,209 articles. Limitations were applied to restrict findings to peer reviewed and English publications starting in 2011. The search resulted in 169 articles. The search was cross-checked for duplicates, common themes, and strategies for preventing readmissions for CHF, COPD, Pneumonia, and Infectious Illnesses. Upon review of the remaining articles, 38 were found to be applicable. A common solution emerged from the remaining 15 articles that illustrated the need for a systematic discharge process addressing specific components to prevent readmissions within 30-days of discharge.

Post-Discharge Follow-Up Appointments

At the time of discharge, scheduling the patient's appointment for them prior to leaving the hospital has been found to be an effective measure in readmission prevention. Eastwood and colleagues (2016) found that patients receiving follow-up care from a provider within seven days of their discharge date had lower odds for readmission ($N = 382$, $p = < 0.05$ adjusted Odds Ratio (OR) = 0.56, 95% CI [0.36, 0.88]) (Eastwood et al., 2016). As nurses prepare the patient for discharge, providing education to the patient and their family related to assuring provider follow-up is an essential component in preventing their readmission to the hospital (Bradley et al., 2013; Donaho et al., 2015; Eastwood et al., 2016; Keane et al., 2016; Kociol et al., 2012). Kociol et al

(2012) identified receiving follow-up care from a provider within seven days of discharge also associated with lower odds of readmission: (N = 11,985, adjusted OR = 0.81; 95% CI [0.70 – 0.94]) (Kociol et al., 2012).

Medication Reconciliation

Medication reconciliation is an important aspect of discharge planning. Patients are complex and require an abundance of medications. The actual number of medications that an individual is discharged home with has been found to be a significant indicator of readmission status. Findings from Sherer (2016) suggest that patients discharged home on nine to eleven medications were 1.1, twelve to fourteen medications were 1.3, and more than fourteen medications were 1.7 times more likely to be readmitted, respectively. This further indicates that complexity of care is associated with patients requiring more medications and a higher incidence of co-morbid conditions (Sherer et al., 2016).

Another component in the medication reconciliation process is cross-checking the patient's previous medication regimen and their newly prescribed medication treatments. Pharmacist consultation availability is essential to adequately reconcile the medications, discuss the patient's capability of obtaining new medication upon discharge, and check for interactions and appropriately prescribed strength and frequency. As the patient is preparing for discharge, the nurse is readily able to assess the need for further assistance in the reconciliation process (Arnold et al., 2015; Blee, Roux, Gautreaux, Sherer, & Garey, 2015; Bradley et al., 2013).

Patient Education

Patient education begins with the nurse assessment of the patient's knowledge about their learning needs. Elliott (2014) conducted a systematic review of 11 articles regarding various learning theory principles for older adults. The Theory of Gerogogy considers the physical and

psychological changes in the older populations. Patients with vision impairment require 14-16-point font sized educational material written at a fifth-grade reading level and provided in bullet points. For individuals over the age of 65, education initiatives need to introduce three to five points of information during each education session. In subsequent education sessions, key points should be reviewed. Nurses should avoid the use of vague terminologies such as “frequency” and “often.” Clarity is crucial, stating the specific date, time, and order of medications (Elliott, 2014). Reportable signs and symptoms of changes in condition and when to notify the provider are important topics of discussion (White et al., 2013). Mid-morning education sessions and reinforcement of points throughout the day are optimal (Elliott, 2014).

Follow-up Call After Discharge

Harrison and colleagues (2011) found telephonic follow-up contact after discharge to be an effective measure to prevent readmissions. Comparisons were made between patients receiving telephonic contact ($n = 6,773$) and those not receiving follow-up communication ($n = 23,499$). Findings demonstrated those not receiving follow-up communication within 14 days of discharge were 1.3 times more likely to be re-admitted ($p = 0.043$) (Harrison, Hara, Pope, Young, & Rula, 2011). Additionally, a study conducted through telephonic communication by D'Amore et al (2011) compared participants that indicated they had a follow-up appointment with a provider versus those lacking follow-up care. Calls to evaluate follow-up status were made to 4,951 patients. Statistical significance was noted between the groups, indicating those that had an appointment for follow-up care were less likely to be readmitted ($p = 0.04$ OR = 0.73; 95% CI [0.55-0.98], OR = 0.66; 95% CI [0.40-1.08]) (D'Amore, Murray, Powers, & Johnson, 2011).

Comprehensive Discharge Process

A comprehensive process is necessary to adequately address the needs of patients with varying diagnoses and levels of complexity. In a study conducted by Bradley et al. (2013), a survey was completed by 599 hospitals for effective discharge strategies. Three hundred and ninety-two (68.7%) reported nurses as being responsible for medication reconciliation. In regard to a signified person responsible to follow-up on test results that come in after discharge, 206 (36.1%) of hospitals stated utilization of this strategy. One hundred and fifty-two hospitals (26.6%) reported providing expedited discharge summaries to providers after a patient's discharge as a successful component of their comprehensive discharge process (Bradley et al., 2013).

Re-Engineered Discharge Program

In attempts to address essential areas during the discharge process to reduce readmissions, researchers at Boston University Medical Center developed and tested a systematic discharge process (RED) that encompasses 12-reinforcing actions. A randomized control-trial was conducted from January 2006 through October 2007. The intervention group ($n = 370$) received the 12 nurse-driven reinforcing actions compared to the standard discharge group ($n = 368$). The study results for the intervention group showed 24 occurrences (6.5%) of more than one hospital utilization and 56 (15.1%) participants had one hospital utilization within 370 person-months of follow-up (0.314 visits per person per month). The standard discharge group resulted in 30 occurrences (8.1%) of more than one hospital utilization and 69 (18.8%) of participants had one hospitalization in 368 person-months of follow-up (0.451 visits per person per month). Therefore, those in the intervention group had a lower rate of hospital utilization resulting in an incident ratio of 0.695, $p = 0.009$; 95% CI [0.515-0.937] (Jack et al., 2009).

A cost comparison of the study demonstrated the intervention group's in-hospital expenditures were \$268,942 versus the standard group's \$412,544. Associated emergency room costs for the intervention group were \$11,285 compared to the cost for the standard group of \$21,389. This represented a lower observed cost of 33.9% for the intervention group (Jack et al., 2009). Therefore, the 12 reinforcing actions of the RED toolkit are comprehensive and successful in addressing various concepts of the discharge process (see Appendix A) (Agency for Healthcare Research and Quality [AHRQ], 2013).

Synthesis of Evidence

Although studies identified various strategies to reduce readmissions, together they offer insight into key areas of interest to promote positive patient outcomes that all coincide with the RED program. One requirement of each of these interventions is the direction of nurses to initiate and assure their completion. Repeatedly, nurses were noted as those responsible for the completion of these interventions (Arnold et al., 2015; Blee et al., 2015; Bradley et al., 2013; D'Amore et al., 2011; Donaho et al., 2015; Eastwood et al., 2016; Elliott, 2014; Gohil et al., 2015; Harrison et al., 2011; Hines et al., 2014; Keane et al., 2016; Kociol et al., 2012; Sherer et al., 2016; White et al., 2013).

Limitation of Current Evidence

While there is an array of evidential literature on methods to prevent readmissions, there are few resources stating the success of specific systematic discharge processes. Due to the frequency of CHF readmissions and this diagnosis being the most frequently readmitted in the U.S., most research efforts are focused on the CHF population. This, therefore, results in a reduction of generalizability. Only two of the studies account for high-level evidential findings in the literature review, which were a systematic review (Elliott, 2014) and a randomized

control-trial (Jack et al., 2009). The remaining findings were levels three, four, and five studies, thus illustrating the necessity for further evidential inquiry.

Strength of Current Evidence

There is a wealth of information repeating specific interventions that are showing reassuring results in effectively preventing readmissions. All research discusses the importance of nursing services leading these discharge initiatives. Most of the literature focuses on the most commonly readmitted diagnosis, CHF. However, the reinforcing interventions of the RED Program are generalizable and can be utilized with various conditions.

In conclusion, the literature review illustrates the essential need to address multiple areas in the discharge process to prevent readmissions. The targeted facility shares similar readmission diagnoses as many other healthcare facilities and wishes to decrease readmissions. Supporting evidence that nurses are at the forefront of the initiatives to reduce readmissions. The RED Program offers a nationally recognized evidence-based solution to address the critical components of the discharge process for patients with various diagnoses. Therefore, this study implemented the RED Program within the targeted facility and measured its effects on nurses' discharge planning.

Conceptual Theory

As specified by *The Essentials of Doctoral Education for Advanced Nursing Practice* by the American Association of Colleges of Nursing (2006), essential two addresses the necessity for the Doctoral prepared nurses to evaluate care delivery systems. One will need to demonstrate advanced skills in clinical communication, navigation of the healthcare system, and implementation of evidential findings in accordance with essentials two, three, and four. Essential one discusses the need to implement changes within the healthcare system through

theoretical frameworks (American Association of Colleges of Nursing [AACN], 2006). The nurses' education intervention carried out in this study was conducted through a theoretical approach designed to emphasize the 12-actionable items of the RED program and address the learning needs of the adult learner.

The Andragogy Theory

This study's design and implementation of the REDs program was guided by an adult learning theory. To better understand and provide direction in meeting the needs of the adult learner, Malcolm Knowles developed the theory of Andragogy. The adult learning experience is different from that of a child. Knowles' theory takes into consideration the various elements specific to adult learners in six assumptions as follows (Knowles, 1984).

The need to know. An adult learner needs to understand the necessity to learn something new and the benefits that will be gained from this knowledge. The facilitator of the education initiative needs to assist the learner in seeing how the information will be used in real-life circumstances. Through the process of raising an individual's awareness of the need for new knowledge, one can identify the gaps in their current level of understanding (Knowles, 1984).

The learners' self-concept. Adults understand they are responsible for their own decisions in their lives. Once this level of self-concept is achieved, adults want others to view them as being capable of self-direction. However, some adults will return to being dependent on the facilitator when placed back into a learning experience as they were in childhood. The adult may become uncomfortable with this feeling of dependency and abandon the learning experience (Knowles, 1984).

The role of the learners' experience. The adult learner defines him or herself by their lived experiences. As one gets older, an individual can pull from these lived experiences and

build on their current knowledge base. The adult desires their lived experiences be valued, as these have helped to formulate the individuals' self-identity (Knowles, 1984).

Readiness to learn. The critical component of this assumption builds off the proceeding concepts. The timing of the education intervention must coincide with the tasks being valuable to the learner. One effective method to induce a learners' readiness to accept new knowledge is to expose the individual to models of superior performance (Knowles, 1984).

Orientation to learning. A learner needs to know how the new knowledge will be applicable to help solve problems in their real-life circumstances. If the connection to the current life situation of the learner is not made, the learner will not progress beyond memorization of the content. Therefore, the education intervention must readily apply to current dilemmas of the learner (Knowles, 1984).

Motivation. Adults are susceptible to intrinsic and extrinsic motivators to learn. The most potent motivators come from internal pressures to increase one's job satisfaction, quality-of-life, or confidence level. These intrinsic motivations can be blocked by inaccessibility to resources, negative self-concepts to complete the learning experience, or time constraints (Knowles, 1984).

Methodology

Design

This study used a pre-post chart review design to determine the effectiveness of an education intervention aimed to decrease readmissions. To address the first aim of the study, a questionnaire related to readiness to learn and a demographic form was administered to inpatient Licensed Practical Nurses (LPN) and Registered Nurses (RN) undergoing required training on the RED discharge program. The nurse education intervention occurred in the Computer

Education Center at the southeastern acute care facility. After obtaining informed consent, participants had access to an individual computer to complete the associated questionnaire through an independent website provided by Guglielmino and Associates. Eighteen education sessions at varying time intervals were provided by the primary investigator over the period of a week. The educational intervention was supported using a PowerPoint presentation via a projector system. The education intervention content was based on free RED education material from the AHRQ. The education intervention was conducted by the primary investigator and the RED program continues to be utilized throughout the hospital to address discharge needs of the facility's patients. Correlational analysis was used to test for relationships between variables.

A second point of contact was made 45-days after the implementation of the RED program with the inpatient LPN/RN participants. A link to a survey to complete four qualitative questions was sent to the participant's in-hospital e-mail. The survey was completed anonymously through Qualtrics. The results were analyzed for common themes among the participant feedback.

To address the second aim of the study, charts were reviewed by the primary investigator pre-and post-intervention. An a priori power analysis determined the minimum required sample size of 102 total charts reviews, resulting in a minimum of 51 pre-and 51 post-intervention, with an anticipated Cohen's *d* of 0.5, power level of 0.8, and a 95% confidence interval (Soper, n.d.). The pre-education portion of the study was accomplished through retrospective chart review of 60 patients readmitted just prior to the education intervention with the following ten diagnoses: Septicemia, COPD, Renal Failure, Pneumonia/ Pleurisy, Heart Failure and Shock, Cellulitis, Esophagitis/ Gastroenteritis, Kidney/ Urinary Tract Infections, Disorders of the Pancreas, and Disorders of Nutrition/ Metabolism/ Fluid/ Electrolyte imbalances. Charts were reviewed to

determine the number of 12-reinforceable actions of the RED Program present as documented by nurses. Each reinforceable action identified as documented in the chart was given a value of 1, and each not found documented in the chart was given a value of 0. The number of reinforceable actions documented in the chart were added together, and each chart had a possible total score of 0 (no reinforceable actions found) to 12 (all reinforceable actions found). The twelfth reinforceable action item had three subcomponents to assure completion of three of the essential components of the callback communication occurs. All three areas must have been completed to receive a 1 for the last reinforceable action. This served as baseline data and was compared to data gathered during the post-intervention portion of the study gathered in the same manner as the pre-intervention portion of the study. Following the education intervention, 60 patient charts were retrospectively reviewed to determine the number of 12-reinforceable actions of the RED Program as documented by nurses. Statistical analysis was used to determine whether there was a significant increase in the number of 12-reinforceable actions of the RED Program documented by nurses. Inclusion criteria includes charts with a readmission within 30-days of discharge or a diagnosis on the top 10-list for readmissions. Exclusion criteria applies to charts with a readmission after 30-days or diagnosis not on the top ten-list for readmission.

Sample

Purposive sampling was utilized to target nurses at a southeastern non-profit acute care facility. The population of nurses was chosen for two reasons: 1) there is little evidential findings in the literature regarding rural nurses in acute care facilities, and 2) there is little evidence regarding the utilization of a systematic discharge process in rural acute care facilities. The voluntary convenience sample was obtained from the LPN/RN inpatient nurse staff in the second week of March 2017. Exclusion criteria applied to ancillary staff not holding an active

nursing license, nurses practicing in the Emergency Department, Outpatient Services, and nurses not providing direct patient care.

Instruments

A demographic questionnaire was created by the primary investigator, including gender, age, level of education, level of experience, specialty area of the nurse, and employment status. Questionnaires were completed by the participants through an independent website provided by Guglielmino and Associates. Data was analyzed using SPSS, Verizon 24.0. Descriptive statistics were used to describe demographic variables and the learner's readiness to learn. Percentages and frequency counts were used to report nominal and ordinal values, and continuous variables were reported through means and standard deviations. Spearman's rank order analysis and Pearson's correlation were used to determine relationships between demographic variables and the learner's readiness to learn, depending on the level of measurement.

The Self-Directed Learning Readiness Scale - Adult/Learning Preference Assessment (SDLRS/LPA) was used to evaluate readiness to learn (the nurses' attitudes, beliefs, and feelings toward learning). The SDLRS-A/LPA includes 58-questions in which the participants provided a response based on a five-point Likert scale where 1 = "almost never feeling this way" and 5 = "almost always feeling this way". Total scores can range from 58-290, with higher scores indicating greater readiness to learn. Scores ranging from 58-201 indicate below average readiness to learn, those ranging from 202-226 indicate average readiness to learn, and scores ranging from 227-290 indicate above average readiness to learn. Instrument statements are readily applicable to the Andragogy Learning Theory assumptions for the adult learner. A sample item from the instrument states, "I believe that thinking about who you are, where you

are, and where you are going should be a major part of every person's education" (Choy & Delahaye, 2000). The reliability coefficient of the SDLRS-A/LPA has been reported as 0.94 (Guglielmino, 1991) and face validity was confirmed by experts Choy and Delahaye (2000), indicating that the instrument accurately measures the self-readiness of learners (Choy & Delahaye, 2000).

The qualitative post-implementation questions became available for participant response 45-days post-implementation of the REDs program. The following three open-ended questions and one Likert scale question requiring a rating between 1 – 10 were included.

1. What are your overall thoughts about the new RED discharge process?
2. What do you think about the two discharge intervention screens created in Medi-Tech?
3. Do you have any suggestions on how to implement future evidence-based processes at the hospital?
4. Please rate on a scale of 1= very dissatisfied to 10= extremely satisfied your overall satisfaction of the RED processes' ability to meet the various discharge needs of your patient.

Procedures

All education sessions were conducted by the primary investigator and included the 12-actionable items of the RED Program. The education intervention was offered at various times over the course of a week, lasted approximately 30 minutes, and were identical so each nurse received the same educational intervention. Nurses could choose the session that best worked with their schedule. The sessions were conducted in the computer education center at the facility in a lecture and interactive format. Although the education session was required for all nurses to

attend as part of training for the new discharge process, nurses interested in participating in the study were identified. Just prior to starting the education session, the primary investigator discussed the study and asked for participants interested in participating to complete the anonymous SDLRS-A/LPA survey, whereas those not interested in participating did not complete the survey. The survey took approximately five minutes to complete utilizing the computer in the facility's computer education center. The post-implementation contact occurred in the middle of May 2017 through participant's hospital e-mail. A link to Qualtrics was provided to complete the anonymous four question survey. Each of the content areas of the education intervention included detailed information regarding the components of the 12-items, the appropriate time to address the areas of the intervention, and those responsible for item completion. Each education session was concluded with an open forum for questions and answers.

Protection of Human Rights

Participation in the project was completely voluntary. Informed consent was completed prior to starting the education intervention. After consulting with the facility's Human Resources Department, age range of the bedside nursing staff was determined to be between 20-74 years of age. Therefore, assent was not required. Any inpatient LPNs or RNs practicing at ORMC may have participated. All data collected from the participants remained unidentifiable and coded to uphold anonymity. The participant's code was only known to the participant and primary investigator. Data gathered during the project was entered in an electronic database and was password protected. The original completed instruments were stored on a laptop file, password protected for three years and will be destroyed thereafter. Institutional Review Board

approval was obtained from healthcare facility and the university to further ensure the protection of the study participants.

Beneficence was supported by protecting the participants from any harm due to their participation in the project. Participants benefited from gaining evidence-based knowledge on the RED discharge program, but no compensation was provided to participants. In addition, the process promotes positive patient outcomes and satisfaction. There was no foreseen harm that could result from participating in the study. However, the primary investigator's contact information was provided in the event the participant had questions or concerns. Should distress have occurred with any study participant, the primary investigator would have referred the participant to his or healthcare provider for further evaluation. Prior to enrollment in the study, participants were informed they could withdraw from the study at any time without penalty.

Curriculum Design

The primary investigator worked with the hospital's Information Technology Department to reconcile the current intervention screens with the RED Program and the necessary items required by the Centers for Medicare and Medicaid Services. These efforts resulted in two user friendly intervention areas for the documentation of discharging patients, while eliminating six obsolete intervention areas. During the education intervention, each nurse was able to access a test screen in Medi-tech to locate, visualize, and work within the two new intervention screens. Nursing staff documentation occurred throughout the patient's inpatient stay on the discharge education instruction intervention screen to adequately meet the patient's comprehensive discharge needs. Case management personnel completed and documented telephonic communication 48 -72 hours after patients were discharged.

The 12-actionable items of the RED Program were incorporated into the hospital's Meditech documentation system. The primary investigator discussed the plethora of evidential findings that supported the need for each of the 12-actionable items to be incorporated into the discharge process to decrease hospital readmissions. The education was provided in a Power-Point format with screen shots of the documentation system to aid nurses in successfully transferring the new knowledge into their daily practice. Specific information on each of the 12-actionable items was provided and based on information provided on the AHRQ website. Each session ended with a question and answer session. The 12-actionable items and details of each included in the education intervention were as follows:

- 1) **Ascertain need for and obtain language assistance.** On admission, the patient's preferred language for oral and written communication will be obtained. In the event an interpreter is needed, the interpretation services phone number utilized by the facility and access code is listed with this item for easy access.
- 2) **Make appointments for follow-up care.** To help support patient compliance with patients following-up with their provider within seven to fourteen days after their discharge, follow-up appointments and outpatient testing to be completed will be scheduled prior to discharge. Seeking a time preference or days that are not feasible for the patient can be noted by any nurse once the patient's condition has stabilized. At the actual time of discharge, the primary nurse, charge nurse, or patient representative will schedule the appointment(s). The responsible party depends on the unit in which the patient is discharged and their current process. Details of potential issues with transportation, inquiries about traditional healers, and the importance of completing outpatient testing and follow-up care will be discussed with the patient/caregiver. In the

event an issue is discovered, the healthcare team will collaborate to determine an effective solution.

- 3) **Plan for the follow-up of results from tests or labs that are pending at discharge.** In the event there are pending results at the time of discharge, a plan for communicating the results will be discussed with the patient/caregiver. The pending test name and plan for communicating the test results will be included in the discharge instructions. This task will be completed by the nurse responsible for the process on the unit of discharge.
- 4) **Organize post-discharge outpatient services and medical equipment.** After assessing for adequate home care support and medical equipment needs, the nurse staff will collaborate with Case Management to arrange the necessary in-home healthcare services. Contact information and scheduled arrival times for any medical services or equipment to be provided within the home will be included on the discharge instructions.
- 5) **Identify the correct medicines and a plan for the patient to obtain them.** The primary admission and discharge nurses will review and compare the patient's inpatient and outpatient pharmacy list of medication and compare with the patient's reported medications. The reconciliation will address any dietary supplements, vitamins, and herbal medicines. The nurse will ensure there is a reasonable plan to obtain medications is in place, and if not, will consult with the healthcare team regarding the specific issue.
- 6) **Reconcile the discharge plan with national guidelines.** The importance of reviewing and comparing the treatment plan to national guidelines was discussed with the nursing staff. Key areas of focus are on improving patient outcomes, readmission prevention, and reimbursement associated with core measures. The National Clearinghouse link was

included on the discharge intervention in Medi-tech for ease of accessibility by the nurse responsible for discharges, depending on the unit.

- 7) **Teach a written discharge plan the patient can understand.** The education intervention emphasized the importance of providing appropriate education and promoting health literacy. Considering the demographic aspects of the patient population, the nursing staff learned about utilizing the Theory of Gerogogy. Oral education will be given over the course of the patient's admission, assuring to limit the introduction of new information to no more than three to five concepts during each encounter, such as the importance of weighing at the same time each morning for CHF patients. Key areas should be reinforced periodically throughout the day utilizing the teach-back method. An example of a successful patient education session regarding the monitoring of fluid status would be when the patient states the importance of weighing each morning on the same scale with similar clothing.

Written education material continues to be provided through the Krames® database at the facility since the education material ranges from the forth to eight grade reading level. For those patients with vision impairment, the font will be 14–16 point. All patient education throughout the admission will be documented on the discharge education instruction intervention in Medi-tech.

- 8) **Educate the patient about his or her diagnosis and medicines.** The Theory of Gerogogy and the teach-back method will be applied to the education efforts associated with the patient's primary diagnosis, co-morbid conditions, and changes to medication regimen. Emphasis on the purpose, function, and side effects of new medications will be a part of the on-going patient education throughout the admission. Documentation of the

education sessions will continue to be on the discharge education instruction intervention in Medi-tech.

9) Review with the patient what to do if a problem arises. Another essential component of the RED Program is formulating a plan of action with the patient in the event a problem arises. The nurse will aid the patient in defining an emergent and non-emergent situation and identifying appropriate course of action for each. Non-emergent issues will be referred to the provider, and contact information will be provided to the patient at discharge. Nurses will teach the patient that emergent circumstances will require emergency services. Again, these education points will be taught at the appropriate level to ensure the patient's understanding and documented on the discharge education instruction intervention.

10) Assess the degree of the patient's understanding of the discharge plan. During the discharge process, nurses will ask the patient to explain in their own words details of the discharge plan. Nurses will continue to clarify any areas of deficiency. If full understanding is not obtainable, nurses will contact other caregivers involved in the patient's care and document these efforts accordingly.

11) Expedite transmission of the discharge summary to clinicians accepting care of the patient. The discharge summary and plan of care will be expedited to the primary provider within 24 hours of discharge. This applies to visiting in-home nurses and other agencies carrying out the patient's plan of care in the outpatient setting. The discharging nurse will assure the discharge summary is sent to other healthcare agencies and documented accordingly. Otherwise, the discharge summary will remain accessible through the shared Medi-tech database between the hospital and providers.

12) Provide telephone reinforcement of the discharge plan. The discharging inpatient unit will remain available in the event of questions regarding the discharge plan. Case management will call the patient 48-72 hours after the patient is discharged to address any issues or questions. A separate education intervention was held with the case management team to review the necessary conversation components and example call back form. Documentation will be completed in the facility patient callback management system, as a part of the patient's electronic medical record. The AHRQ has provided an example documentation form for facility utilization (see Appendix B) (AHRQ, 2013).

Chapter IV

The results of this study will be discussed in this chapter. Reported findings include nurses' demographics, relationships between nurses' demographics and readiness to learn, and defining participants level of readiness to learn prior to the REDs education intervention. Pre- and post-education chart reviews were used to determine the effects of a REDs education intervention on nurses' discharge planning. A qualitative analysis evaluated the nurses' overall level of satisfaction with the RED discharge process.

Data analysis began with evaluating for missing data and standard data cleansing. Mean substitution was used for missing descriptive demographic data, and specifically for one missing item in the age category, one item for level of experience, and two items for level of education category. Correlation variables were all evaluated for multicollinearity. Distribution of data was assessed for normality with the application of the appropriate parametric and non-parametric testing.

Sample Description

Eighty-five participants attended the mandatory REDs Discharge Program education sessions, and 69 (81%) agreed to participate in the study and completed the SDLR-A scale prior to the education session. The diverse study population represented varying levels of education, work experience, and nursing areas of expertise. The majority of participants were Bachelor of Science prepared (49.3%), followed by Licensed Practical Nurses, Diploma, and Associated of Science (42%), and a Master's level education or higher (8.7%).

Participants were predominantly female (91.3%), with a mean age of 41 (SD 11.72), ranging from 22 – 71 years. Work experience ranged from zero to forty-one years, with a mean of 14 (SD 10.68) years. The mean hours worked per week was 34.3 (SD 9.99), with a range of 12 – 48 hours, and 30.4% of participants reported an “as needed” (PRN) employment status. Majority of participants reported Intensive Care (23.2%) as their specialty area of practice, followed by Medical/Surgical and Obstetrics and Gynecology representing 21.7 % each, more than one specialty area (17.4%), Skilled Nursing Unit (8.7%), and Intermediate Care (7.2%).

Table 1

Sample Characteristics

<u>Characteristic</u>	<u>x (SD)</u>	<u>Range</u>
Age (years)	41 (11.72)	22-71
Hours Worked per Week	34 (9.99)	12-48
Years of Experience	14 (10.68)	0-41
<u>Characteristic</u>	<u>n</u>	<u>%</u>
Gender		
Male	6	8.7
Female	63	91.3

Level of Education

LPN/Diploma/ADN	29	42
BSN	34	49.3
MSN/DNP/PhD	6	8.7

Nurse Specialty Area

Medical/Surgical	15	21.7
Intermediate Care	5	7.2
Intensive Care	16	23.2
Gynecology/Obstetrics	15	21.7
Skilled Nursing	6	8.7
Multiple Areas	12	17.4

PRN Status

Yes	21	30.4
No	48	69.6

Clinical Questions

Clinical Question 1: Is there a relationship between nurses' demographics and the nurses' readiness to learn pre-education intervention?

Correlation analysis was used to test the hypothesis that there is a relationship between demographic variables and the learner's readiness to learn prior to an evidence-based education intervention on the RED discharge program. Reliability testing resulted in a Cronbach's alpha of 0.94. The hypothesis was partially supported. There was a small positive relationship between the gender of participants and SDLR-A, $r(69) = .237, p = .05$. Female nurses reported significantly higher readiness to learn scores compared to male nurses. There was also a small

positive relationship between PRN status and SDLR-A, $r(69) = .240, p = .047$. PRN nurses reported a significant higher readiness to learn score compared to full-time nurses.

The variables age and years of experience were near normally distributed. Pearson's correlation results indicated no significant relationship between participant's age $r(69) = -.036, p = .767$, and years of experience, $r(69) = -.146, p = .231$ with SDLR. Chi-square analysis was attempted with variables level of education and specialty area of work. Cell assumptions were not met; therefore, the data was collapsed to form a dichotomy for both variables. No significant correlation resulted from Pearson's correlation test between level of education and SDLR-A; $r(69) = -.132, p = .281$. Variable hours worked per week and specialty nursing area of practice were not normally distributed. Spearman's rank order analysis was utilized and indicated no significant relationship between hours worked per week, $r_s(69) = -.032, p = .791$ or specialty nursing area of practice with SDLR-A, $r_s(69) = .128, p = .294$.

Clinical Question 2: What is the level of readiness to learn among the nurses prior to receiving an education intervention?

Descriptive statistics were used to determine the nurses' readiness to learn level prior to receiving an education intervention on the RED discharge program. According to the instrument's author, the average adult score is 214, and scores ranging from 58 – 201 indicate below average readiness to learn, scores ranging from 202 -226 indicate average readiness to learn, and scores ranging from 227 -290 indicate above average readiness to learn. Participants ($N = 69$) scored above the mean adult average with a $M = 219.8$ ($SD 23.7$) on the SDLR-A. Research indicates that individuals who have developed good self-directed learning skills perform best in jobs that require high levels of creativity, adapt to change easily, and possess strong problem-solving capabilities. While this group of participants has indicated their success

with independent learning situations, they have expressed their reluctance to handle the entire process of identification, planning, and implementation of the learning experience.

These findings are further supported by specific questions from the SDLR-A questionnaire. For the statement; “I’m looking forward to learning as long as I’m living” the majority of responses were represented by, 63.8% indicated always true and 21.7% stating usually true. Participants further expressed their comfort with being responsible for their learning in response to statements such as; “No one but me is truly responsible for what I learn” 0% never, 1.4% not often, 15.9% sometimes, 42.0% usually, and 40.6% stated always true. In response to; “I love to learn” 0% reported never, 2.9% not often, 10.1% sometimes, 37.7% usually, and 49.3%, stated always try about themselves.

For the statement, “It takes me a while to get started with new projects” 5.8% indicated almost never true, 27.5% stated not often, while 39.1% said sometimes true, 23.2% usually true, and 4.3% always true. Lastly, “I don’t work very well on my own,” resulted in the majority of responses with 20.3% sometimes, 49.3% usually, and 23.2% always true. See Table 2 for complete results from the SDLR-A questionnaire.

Table 2

Self-Directed Learner Readiness Scale

Item	Almost Never True (Pre- %)	Not Often True of Me (Pre- %)	Sometimes True of Me (Pre- %)	Usually True of Me (Pre- %)	Almost Always True of Me (Pre- %)
1. I’m looking forward to learning as long as I’m living.	0	0	14.5	21.7	63.8
2. I know what I want to learn.	1.4	2.9	37.7	40.6	17.4
3. When I see something	2.9	7.2	13.0	52.2	24.6

	that I don't understand, I stay away from it.					
4.	If there is something I want to learn, I can figure out a way to learn it.	0	1.4	21.7	49.3	27.5
5.	I love to learn.	0	2.9	10.1	37.7	49.3
6.	It takes me a while to get started with new projects.	5.8	27.5	39.1	23.2	4.3
7.	In a classroom situation, I expect the instructor to tell all class members exactly what to do at all times.	5.8	8.7	44.9	33.3	7.2
8.	I believe that thinking about who you are, and where you are going should be a major part of every person's education.	0	1.4	13.0	44.9	40.6
9.	I don't work very well on my own.	4.3	2.9	20.3	49.3	23.2
10.	If I discover a need for information that I don't have, I know where to go to get it.	1.4	1.4	26.1	58.0	13.0
11.	I can learn things on my own better than most people.	2.9	17.4	50.7	24.6	4.3
12.	Even if I have a great idea, I can't seem to develop a plan for making it work.	2.9	18.8	40.6	34.8	2.9
13.	In a learning experience, I prefer to take part in deciding what will be learned and how.	0	24.6	42.0	30.4	2.9

14. Difficult study doesn't bother me if I'm interested in something.	1.4	7.2	18.8	42.0	30.4
15. No one but me is truly responsible for what I learn.	0	1.4	15.9	42.0	40.6
16. I can tell whether I'm learning something well or not.	1.4	1.4	11.6	52.2	33.3
17. There are so many things I want to learn that I wish there were more hours in a day.	1.4	18.8	29.0	29.0	21.7
18. If there is something I have decided to learn, I can find time for it, no matter how busy I am.	0	14.5	34.8	42.0	8.7
19. Understanding what I read is a problem for me.	1.4	11.6	29.0	47.8	10.1
20. If I don't learn, it's my fault.	4.3	4.3	11.6	43.5	36.2
21. I know when I need to learn more about something.	1.4	0	17.4	58.0	23.2
22. If I can understand something well enough to get by, it doesn't bother me if I still have questions about it.	1.4	13.0	26.1	39.1	20.3
23. I think libraries are boring places.	5.8	8.7	23.2	29.0	33.3
24. The people I admire most are always learning new	1.4	8.7	21.7	46.4	21.7

things.

25. I can think of many different ways to learn about a new topic.	0	7.2	36.2	46.4	10.1
26. I try to relate what I am learning to my long-term goals.	0	1.4	21.7	53.6	23.2
27. I am capable of learning for myself almost anything I might need to know.	0	10.1	40.6	37.7	11.6
28. I really enjoy tracking down the answers to questions.	0	7.2	30.4	37.7	24.6
29. I don't like dealing with questions where there is not one right answer.	2.9	21.7	52.2	17.4	5.8
30. I have a lot of curiosity about things.	0	8.7	30.4	26.1	34.8
31. I'll be glad when I'm finished learning.	2.9	2.9	17.4	37.7	39.1
32. I'm not as interested in learning as some other people seem to be.	4.3	14.5	24.6	33.3	23.2
33. I don't have any problems with basic study skills.	1.4	14.5	21.7	40.6	21.7
34. I like to try new things, even if I'm not sure how they will turn out.	0	8.7	27.5	42.0	21.7
35. I don't like it when people who really know what they're doing point out mistakes that I am	4.3	10.1	18.8	55.1	11.6

making.					
36. I'm good at thinking of unusual ways to do things.	0	21.7	40.6	24.6	13.0
37. I like to think about the future.	0	8.7	20.3	30.4	40.6
38. I'm better than most people are at trying to find out the things I need to know.	2.9	20.3	44.9	24.6	7.2
39. I think of problems as challenges, not stop-signs.	0	4.3	26.1	50.7	18.8
40. I can make myself do what I should.	0	4.3	33.3	36.2	26.1
41. I'm happy with the way I investigate problems.	0	5.8	34.8	47.8	11.6
42. I become a leader in group learning situations.	7.2	23.2	39.1	23.2	7.2
43. I enjoy discussing ideas.	1.4	13.0	21.7	43.5	20.3
44. I don't like challenging learning situations.	1.4	10.1	30.4	39.1	18.8
45. I have a strong desire to learn new things.	0	1.4	27.5	47.8	23.2
46. The more I learn, the more exciting the world becomes.	0	4.3	20.3	43.5	31.9
47. Learning is fun.	0	2.9	30.4	39.1	27.5
48. It's better to stick with the learning methods that we know will work instead of always trying new ones.	1.4	4.3	42.0	42.0	10.1

49. I want to learn more so that I can keep growing as a person.	0	1.4	17.4	37.7	43.5
50. I am responsible for my learning – no one else is.	0	4.3	10.1	39.1	46.4
51. Learning how to learn is important to me.	0	1.4	30.4	33.3	34.8
52. I will never be too old to learn new things.	0	1.4	14.5	27.5	56.5
53. Constant learning is a bore.	1.4	2.9	10.1	43.5	42.0
54. Learning is a tool for life.	0	1.4	7.2	37.7	53.6
55. I learn several new things on my own each year.	0	2.9	29.0	34.8	33.3
56. Learning doesn't make any difference in my life.	1.4	0	5.8	29.0	63.8
57. I am an effective learner in a classroom situation and on my own.	1.4	4.3	34.8	43.5	15.9
58. <u>Learners are leaders.</u>	0	1.4	15.9	39.1	43.5
Total Score	<i>x</i> (SD)	Possible Range	Actual Range		
Self-Directed Learner Readiness Adult Scale	219.8 (23.7)	58 - 290	162 - 267		

Clinical Question 3: What is the effect of a REDs Program-based educational intervention on nurses' discharge planning?

A single samples *t*-test was used to test the hypothesis that a REDs program education intervention will increase nurses' compliance with the 12-actionable RED items from pre-to post-intervention. Patient charts (N = 120) were reviewed, 60 pre-education-intervention and 60

post-intervention, for the correct action taken by the nurse to demonstrate compliance with the 12-actionable items. All 12-actionable items were near normal to normally distributed. The hypothesis was supported. There was a statistically significant improvement of utilization of the 12-actionable items pre-intervention (RED score) $n = 60$ $M = 6.55$ (SD 1.478) compared to utilization of the 12-actionable items post-intervention (RED score) $n = 60$ $M = 10.08$ (SD 1.544), $t = 17.730$, $p = .000$ (CI 3.13 – 3.93). Therefore, the post-intervention chart reviews were significantly improved as a result of the RED teaching intervention.

Furthermore, statistically significant improvement was noted chart reviews for many individual actionable items. Medication reconciliation $t = 2.038$, $p = .046$ (CI .00- .26), providing written education material $t = 30.800$, $p = .000$ (CI .48 - .55), and providing patient education about diagnosis, $t = 3.908$, $p = .000$ (CI .08 - .25) were all significantly improved from pre-intervention to post-intervention. Statistically significant improvement was also noted with patient education regarding emergent versus non-emergent care after discharge, $t = 13.378$, $p = .000$ (CI .63 - .85) and assessing patient education using the teach-back method, $t = 18.453$, $p = .000$ (CI .73 - .91).

Pre-and post-chart reviews revealed an increase in the amount of correctly completed medication reconciliations on admission and at discharge. An increase in written, patient specific, and education level appropriate material regarding their primary diagnosis and other medical conditions was noted. Nurses' patient education increased concerning the difference between emergent and non-emergent issues and developing appropriate patient responses to each. Assessment of the patient's understanding utilizing the teach-back method increased as a result of the REDs education intervention.

In addition, the nurses handled the following RED discharge actionable items correctly:

1) making a follow-up appointment for the patient with their primary care provider $t = 6.062$, $p = .000$ (CI .17 - .34); 2) when appropriate, reconciliation of treatment plan with national guidelines prior to discharge, $t = 11.831$, $p = .000$ (CI .46 - .64); 3) nurses review of patient's chart for pending test results prior to discharge, $t = 2.687$, $p = .009$ (CI .02 - .17); and 4) telephone patient callbacks completed within 48 – 72 hours after discharge also resulted in statistical significance, $t = 3.530$, $p = .001$ (CI .09 - .34) (see Table 3 for further information).

The findings demonstrated a significant increase in number of follow-up appointments made for the patient prior to discharge with their primary care provider from pre- ($M = .63$) and post-education intervention chart reviews ($M = .88$). For patients with an applicable diagnosis requiring national guideline compliance such as CHF, Sepsis, or COPD, an increase was noted with nurses' reconciliation of compliance with national standards prior to discharge. Nurses demonstrated an increase with reviewing patient's charts for any pending test results and securing a plan for the results to be reported to the patient after discharge. Telephone patient callbacks increased within 48 – 72 hours after patient discharges that included securing follow-up care, medication reconciliation, and verification of patient's understanding regarding their diagnosis and health status using the teach-back method.

Statistically significant improvement was not found in three of the actionable items between the pre-and post-education intervention chart reviews: 1) assessment of the patient for the need for language assistance, $t(120) = 1.792$, $p = .078$ (CI -.01 - .15); 2) organization of post-discharge services and in-home medical equipment, $t(120) = .200$, $p = .842$ (CI -.03 - .04), and 3) making discharge summaries available to primary care providers within 24 hours after discharge $t(120) = -.870$, $p = .388$, (CI -.15 - .06) (see Table 3 for further information).

Nurses demonstrated high rates of success with their assessment of language assistance needs pre-and post-education intervention. Case management consistently illustrated their ability to meeting patient's discharge needs for in-home services and medical equipment. The availability of provider discharge summaries within 24-hours of discharge decreased slightly from pre-to post-education intervention.

Table 3

RED Actionable Items Present in Chart Reviews (Pre-charts n = 60, Post-charts n = 60)

Variable	Pre- Intervention \bar{x} (SD)	Post- Intervention \bar{x} (SD)	<i>p</i>
1. Ascertain need for and obtain language assistance.	.83 (.376)	.90 (.303)	.078
2. Make appointments for follow-up care.	.63 (.486)	.88 (.324)	.000
3. Plan for follow-up of results from tests pending at discharge.	.82 (.390)	.92 (.279)	.009
4. Organize post discharge outpatient services and medical equipment.	.98 (.129)	.98 (.129)	.842
5. Identify the correct medicines and a plan to obtain them.	.47 (.503)	.60 (.494)	.046
6. Reconcile the discharge plan with national guidelines.	.30 (.462)	.85 (.360)	.000
7. Teach a written discharge plan the patient can understand.	.47 (.503)	.98 (.129)	.000
8. Educate the patient about his or her diagnosis and	.72 (.454)	.88 (.324)	.000

medicines.

9. Review with patient what to do if problem arises.	.03 (.181)	.77 (.427)	.000
10. Assess the degree of the patient's understanding of the discharge plan.	.05 (.220)	.87 (.343)	.000
11. Expedite transmission of discharge summary to clinicians accepting patient care within 24 hours.	.80 (.403)	.78 (.415)	.388
12. Provide telephone reinforcement of discharge plan (including securing follow-up appointment and medication reconciliation 48 – 72 hours after discharge).	.45 (.502)	.67 (.475)	.000
<hr/>			
12-Actionable Items			
Total Scores	6.55 (1.478)	10.08 (1.544)	.000

Qualitative Clinical Questions

Forty-five days after implementing the RED discharge process the link to access the qualitative questionnaire was e-mailed to the nursing staff. Completion of the survey was voluntary and anonymous. Of the original 69 participants who completed the readiness to learn questionnaire, 16 (19%) completed the qualitative questions. Below is a summary of the qualitative findings.

What are your overall thoughts about the new RED discharge process?

Compiled feedback from participant responses was coded based on the overall opinion of the RED process into two categories; “understands systematic discharge process” and “reinforcement education needed.” Results indicated that 87% expressed their knowledge about

specific components of the discharge process related to their care area and patient population. For example, one participant described “The RED discharge planning process educates our patients better for going home. They have heard the information and verbally said it back to the nurse for verification. The patients are learning the information and having retention of the information. We are having less call backs to re-educate” (see Table 4 for participant responses).

However, 13% of participants demonstrated a lack of understanding of how systematic discharges effectively support the comprehensive needs of patients by starting the discharge process on admission through education and planning initiatives (Bradley et al., 2013; Jack et al., 2009). For example, one participant replied, “Most did not apply to our unit” (see Table 4 for participant responses). Further illustration of this is supported by the SDLR-A questionnaire results. Overall participants indicated their comfort with independent learning situations, while there was reluctance to handle certain aspects of new processes, such as implementation. To expand on this point, 76% of participants responded, “usually or always true” about themselves to the statement, “When I see something that I don’t understand, I stay away from it.” Therefore, reinforcement education would be beneficial to support participant’s understanding of systematic discharges and maximize the potential of the RED program.

Table 4

What are your overall thoughts about the new RED discharge process?

Participant (N = 16)	Response
1	“Very much needed to help educate the patient and family.”
2	“Very good process.”
3	“The RED discharge planning process educates our patients better for going home. They have heard the information and verbally said it back to

the nurse for verification. The patients are learning the information and having retention of the information. We are having less call backs to re-educate.”

4 “Most did not apply to our unit.”

5 “I think it covers all discharge planning and being done on a daily basis means less to do at discharge.”

6 “I think the process is working out very well because it initiates the discharge process from the start. The patient isn't overwhelmed with discharge information at one time. The patient can process and think of questions throughout their stay.”

7 “I think it would work well when we get used to doing it, some of it is easy, other parts, not so sure.”

8 “I think it is going well and keeps the nurses in check to complete patient education throughout the admission.”

9 “I like the layout of the RED discharge page. I like being able to recall and see what other nurses have educated. I can ask the patient to "teach back" what the previous nurse taught and that has really increased patient's understanding.”

10 “I like that it tracks what others before me have taught. It also is easier to have all of the instruction in one place.”

11 “I like it. Keeps everything in one place for education throughout the visit.”

12 “Much more detailed and has easy to use features.”

- 13 “I feel it is better for the patient. They are taking an active role in their care.”
- 14 “I definitely think it works out better for the patient and they are more likely to follow up when we make their appointments.”
- 15 “I believe it is a great way to show documentation of our education to the patient.”
- 16 “Great, very good tool for patient education.”
-

Question 2: What do you think about the two discharge intervention screens created in Medi-Tech?

Compiled feedback from participant responses was coded based on the overall opinion of the two discharge interventions created in Medi-Tech for documentation of the RED discharge process components. The two coding categories resulted in “familiar with the documentation interventions” and “unfamiliar with the documentation interventions.” Results indicated that 80% of respondents were familiar with Medi-Tech interventions. For example, a participant responded, “I like the interventions because the nurse can see what topics have been discussed and what topics the patient may need further assistance with. It is a very good tool to help remind nurses to ensure the patient has had discharge instructions.” This statement gives specific details, indicating usage and experience with the two documentation intervention screens.

However, 20% of respondents did not demonstrate familiarity with the interventions by responses such as “unsure” and “I only noticed one. Am I missing something?” One of the principles of the Andragogy Theory notes that adult learners need to make the connection between current life-situations and learned content, or the learner will not progress the

information beyond memorization (Knowles, 1984). Furthermore, those that are kinesthetic learners prefer learning exercises that involve directly doing the task and have little value for visual or auditory presentations (Institute of Learning Styles Research, n.d.). While, the education intervention included exercises that targeted all learning preferences, one could assume that this subgroup of respondents would benefit from unit based education, at the bedside level. This method of education would support the need to find the connection between current life-situations and the kinesthetic learning preference.

Table 5

What do you think about the two discharge intervention screens created in Medi-Tech?

Participant (N = 15)	Response
1	“Unsure”
2	“They're easy to follow.”
3	“They are very helpful in teaching the patient all the information for discharge.”
4	“They are much easier to use and more convenient.”
5	“They are good and can be implemented easily.”
6	“They are fine.”
7	“Okay”
8	“Love that we only have two "apps" to click at discharge. Both pages are easy to read and have good flow.”
9	“Love it.”
10	“It makes discharging easier.”

- 11 “I’m not 100% sure which ones they are. There is one page that you can only select one thing at the bottom for discharge. And there is way more than one thing that needs to be checked.”
- 12 “I think it works well to ensure all basis are covered at discharge.”
- 13 “I only notice one. Am I missing something?”
- 14 “I like the interventions because the nurse can see what topics have been discussed and what topics the patient may need further assistance with. It is a very good tool to help remind nurses to ensure the patient has had discharge instructions.”
- 15 “Good”
-

Question 3: What suggestions do you have on how to implement future evidence-based processes at the hospital?

Compiled feedback from participant responses was coded based on participant preferences to implement future evidence-based processes. Responses were categorized into two groups, those “comfortable with level provided during intervention” and those that “prefer continued support.” Results indicate that 74% of respondents were comfortable with the degree of support through the education process. For example, one respondent stated, “This roll out has been wonderful. We had a brief education intervention and opportunity to ask questions. The coordinator came around on the floor to see if we needed any help. She also gave "kudos" when participation was high in the beginning. There wasn't a feeling of pressure to do it the correct way.”

Nevertheless, 26% of respondents expressed uncertainty and a need for continued support through the education and implementation of the evidence-based initiative. For example,

responses such as, “Working with the patient, take more active role” and “I know we had an in-service but when you don’t do discharge paper work a lot of things are forgotten” were noted.

Again, one can assume that a subgroup of participants would find the principles of the Andragogy Theory and Kinesthetic learning preferences more applicable to support their learning needs and success with evidence-based initiatives (Institute of Learning Styles Research, n.d.; Knowles, 1984).

Table 6

Suggestions do you have on how to implement future evidence-based processes at the hospital?

Participant (N = 15)	Response
1	“Working with the patient, take more active role.”
2	“Unsure”
3	“This roll out has been wonderful. We had a brief education intervention and opportunity to ask questions. The coordinator came around on the floor to see if we needed any help. She also gave "kudos" when participation was high in the beginning. There wasn't a feeling of pressure to do it the correct way.”
4	“None. Just not into that kind of stuff I have no problem implementing what others learn.”
5	“None at this time.”
6	“None at present.”
7	“None”
8	“None”
9	“More things specific to OB.”

- 10 “Maybe be a little bit more specific with some of the topics.”
- 11 “I like the way this was done. Easy education and simple follow through. The clinical educator followed up with us regularly for the first few weeks and that helped a lot.”
- 12 “I know we had an in-service but when you don’t do discharge paper work a lot of things are forgotten.”
- 13 “Education and trial and error of live practice is the best way.”
- 14 “Continue the same!”
- 15 “By presenting how it will benefit the nurses in the end. Just as the current changes: when we do a better job discharging and educating patients, they have a better outcome and are less likely to come back to the Emergency Department in a week or two and be readmitted without us getting paid.”
-

Question 4: Please rate on a scale of 1 = very dissatisfied to 10 = extremely satisfied your overall satisfaction of the RED processes’ ability to meet the various discharge needs of your patient.

Compiled feedback from participant responses was used to determine the overall satisfaction level of the RED processes ability to meet the needs of patients at discharge. A 1-10 Likert scale was used for participants to indicate their degree of approval. The mean-satisfaction score of respondents (n=14) was 8.9, indicating a high level of satisfaction with the RED processes’ ability to meet the various discharge needs of patients among respondents.

Miscellaneous Findings

Other noteworthy qualitative findings were from patient callbacks 48 – 72 hours after discharge and were, completed by case management personnel. All patients received

reinforcement education of the discharge plan and diagnosis, with verification of patient understanding using the teach-back method. Telephonic communication was achieved with 40 patients out of the 60 post-intervention chart reviews (67%). Thirteen percent of those patients called back were not complainant with the prescribed medication regimen. Their noncompliance was due to lack of medication availability from local pharmacies or patient financial constraints. Case management successfully assisted these patients with securing medications from surrounding pharmacies and through financial aid offered from pharmaceutical discount programs.

Follow-up care after discharge was verified, with 10% of patients requiring additional assistance obtaining post-discharge care. Support was provided through low-income transportation assistance options and securing follow-up provider care. Errors noted in patient's discharge medication profile were also reconciled during the patient callback process.

Chapter V

A discussion of findings from this study will be discussed in this chapter. An assessment of the nurses' readiness to learn level prior to receiving an education intervention on the REDs discharge program is included. The effects of a REDs education invention on nurses' discharge planning is presented. In addition to qualitative feedback form participants after the implementation of the RED discharge program. Study implications to clinical practice, strengths, and limitations for future research endeavors are also included in this chapter.

Participant demographics in the current study were predominately Bachelor of Science (BSN) (49.3%) prepared nurses, the national average of BSNs practicing in rural areas is 33.9%. Another notable difference was the percentage of Master's or higher-level education of participants (8.7%) compared to the national average 6.8% practicing in rural acute care

facilities. The male to female demographic percentages of participants was like the remainder of the general nursing workforce; male (8.7%), female (91.3%) compared to male (9%) female (91%) respectively (American Nurses Association [ANA], 2014). Therefore, the current study findings are not entirely representative of the national nursing workforce.

Participants' mean age of 41 (SD 11.72) is notably younger than the national average of 50 years (ANA, 2014). The average hours per week worked was 34.3 (SD 9.99), with a range of 12 – 48 hours, and 30.4% of participants reported a PRN employment status. This is slightly different from the average nursing workforce hours worked at 36.36 per week, with 40% of practicing nurses representing less than full-time commitment. Other noteworthy differences were between participant nurse specialty areas in this study and the National Workforce Survey of Nurses; Intensive Care 23.2%, Medical/Surgical and Obstetrics and Gynecology representing 21.7 % each, and Skilled Nursing Unit 8.7% compared to 17%, 13%, 7%, and 2% respectively (Budden, J. S., Zhong, E. H., Moulton, P., and Cimiotti, J. P. 2013). Therefore, the current study findings are representative of the rural acute care facility where the current study took place, and not the national average nursing workforce.

The SDLR-A (Guglielmino, 1978) was used in the current study to assess participants' readiness to learn level prior to an education intervention of the REDs discharge program. A search of GALILEO database did not produce evidential findings on the readiness to learn among rural nurses, of various education levels, practicing in an array of acute care areas. To offer some comparison, a study conducted by Linares (1989) assessed self-directed learner readiness of Registered Nurses using the 58-item questionnaire. The Linares study (N = 170) resulted in a positive correlation noted between advancing age of a participant and higher levels of readiness to learn (Linares, 1989). This correlation was not found in the current study. The

current study resulted in a positive correlation between female participants having higher readiness to learn scores versus males, $r(69) = .237, p = .05$. In addition, a positive relationship between participants of PRN status having a higher readiness to learn score compared to full-time participants, $r(69) = .240, p = .047$. This may be explained due to a low number of male nurses practicing at the facility during the time of the study. The positive correlation between PRN status respondents (30%) and higher readiness to learn scores could perhaps be explained by the participant demographics. These nurses had a mean age of 41 and mean level of experience of 15 years. Therefore, this subpopulation is represented by those at the mid-point of their career, illustrating a higher readiness to learn evidence-based standards.

Participants completed the SDLR-A (Guglielmino, 1978) prior to attending an education intervention of the REDs discharge program. Current study participants scored above the mean adult average on the SDLR-A, indicating high readiness to learn. This is similar to the Linares study (N = 170) that reported a mean score of 233.9 for a group of nurse participants with the majority having five to nine years of experience, in non-acute and acute care, with various job titles.

The group of participants from the current study indicated their comfort with independent learning situations. However, they expressed reluctance to manage the complete education process. Participants prefer the identification, planning, and implementation of the learning experience to be handled by someone else. These results are further illustrated by combined majority of responses to statements such as, "I'm looking forward to learning as long as I'm living" and "I don't work very well on my own," accounting for 85.5%, 72.5%, respectively. Reluctance to participant in the entire educational process could be supported through mentoring

the bedside nurse through the complete education process, in addition to promotion and participation of a shared governance model at the unit and organizational level.

There are numerous evidential findings in medical and healthcare quality journals to support the success of the RED discharge program improving patient outcomes among various patient settings (Adams, Stephens, Whiteman, Kersteen, & Katruska, 2015; Berkowitz, R., Fang, Z., Helfand, B., Jones, R., Schreiber, R., & Paasche-Orlow, M., 2013; Jack et al., 2009). However, search endeavors have only produced one other study looking at nurses as participants. The current study compared nurses' utilization of the 12-reinforceable items pre-and post- RED education intervention. Current findings suggest that an intervention on the RED program had a statistical significant effect on nurse's knowledge and utilization of the 12-reinforceable best practice actions. Snyder (2015) conducted a similar study evaluating the knowledge level of nurses with a pre-and 30-day post-test on a RED education intervention. The Snyder (2015) study (N = 30) used a 21-question survey to determine knowledge level of participants. Statistical significance was also found indicating increase knowledge gained per participant from a RED education intervention ($t = 7.44, p = 0.001$). Likewise, current study results found statistical significance ($t = 17.730, p = .000$), with the comparisons of pre-and post-chart reviews for utilization of the 12-actionable items after attending a RED education intervention. However, these studies differed in the method of knowledge verification of the nurses after an education session on the RED program. The Snyder (2015) study used a post-test method, whereas the current study utilized nurses' documentation from chart reviews to demonstrate their knowledge level of the RED program through application.

During the RED sessions, several education topics were new or a change to current practice standards for participants. Emergent versus non-emergent plan, knowledge level

assessments of patients using teach-back method, reconciliation of discharge plan with national guidelines, and review of charts for pending test results are key areas to support positive outcomes (AHRQ, 2014 & Jack et al., 2009) and found statistically significant in the current study. Prior to the intervention, telephone callbacks within the organization were conducted at least 7-days post-discharge, with a primary focus on patient satisfaction. In accordance with evidential findings to improve patient outcomes, telephone callbacks were conducted 48 - 72 hours after discharge in the current study by case management nurses trained on RED discharge telephonic communication (D'Amore, Murray, Powers, & Johnson, 2011 & Harrison, Hara, Pope, Young, & Rula, 2011). Telephonic callbacks focused on key evidential areas to support positive patient outcomes, medication reconciliation (Arnold et al., 2015; Blee, Roux, Gautreaux, Sherer, & Garey, 2015; Bradley et al., 2013), verification of follow-up care appointments (D'Amore, Murray, Powers, & Johnson, 2011 & Harrison, Hara, Pope, Young, & Rula, 2011), and patient knowledge regarding primary diagnosis using the teach-back method (AHRQ, 2014 & Jack et al., 2009). One can assume that presenting evidential findings in an education intervention utilizing the Andragogy Theory for adult learning effectively supported changes to practice among this population of participants. Each of the 12-actionable RED items presented to learners defined the necessity for change through high-level supporting evidence, sessions were available at various times increasing compliance among participants, in addition to nurses' previous knowledge and lived experiences being considered during the education interventions (Knowles, 1984). The education sessions accommodated each learning style (visual, auditory, and kinesthetic) to meet the needs of all participants. Thus, in conjunction with participants' above average readiness to learn further and support of intrinsic motivations of participants, statistical improvement was found in each of these areas of the current study.

Medication reconciliation, providing written education material to patients, educating about primary diagnosis, and making follow-up appointments with Primary Care Providers post-discharge were also found to be significantly improved. Interestingly, these processes were not new to practice for the facility. However, the education interventions accommodated the learning preferences of each learning style (visual, auditory, and kinesthetic), which is an essential component to promote group learning retention (Wittmann-Price, Godshall, & Wilson, 2013). In addition, research indicates success with auditing compliance with essential areas of interest and offering reinforcement education sessions when compliance rates decline (Overman, Hauver, McKay, & Aucoin, 2014). In conjunction with the high level of readiness to learn among participants and application of the Andragogy Theory during education sessions, one can understand the significant findings.

Statistical significance was not found in three of the 12- actionable items between the pre-and post-education intervention chart reviews. Assessment of the need for language assistance and organization of post-discharge services and in-home medical equipment illustrated a high pre-and post-chart review compliance rate, and therefore no statistical difference was noted. Also, the availability of discharge summaries to primary care providers 24 - hours after discharge was not significantly changed. There are two notable components related to this item. Transcriptionist do not work on the weekend in the facility. Also, during the study there was a change of hospitalist groups, resulting in a less than true pre-and post-intervention representation.

Compiled feedback from participant responses was analyzed for common themes. Overall, participants indicated a high level of satisfaction (8.9 out of 10) with the RED program's ability to meet the discharge needs of patients. Participants (87%) expressed an

understanding of the RED discharge process, although thirteen percent of responses failed to indicate a complete level of understanding of the process and the need for further educational support.

Qualitative questions two and three revealed more specific information about some participants learning preferences. Eighty percent of responses illustrated a familiarity with the RED Medi-Tech documentation interventions, while 20% of respondents did not. Furthermore, responses were compiled to determine the preferred manner for future implementation initiatives of evidence-based interventions. The current study education session used a mixed method of visual, auditory, and kinesthetic techniques. Although the majority of participants (74%) indicated a high comfort level with the education process, 26% expressed uncertainty and a need for continued support through the education and implementation of the evidence-based initiative. Further support for participants could be provided through the theoretical framework of the Malcolm Knowles' Andragogy Theory. Unit based, bedside level education would support the making of connections between current life-situations and learned content (Knowles, 1984). Furthermore, this method would also be more attractive to kinesthetic learners, preferring directly doing the task in the real-life situation (Institute of Learning Styles Research, n.d.).

Telephonic callback communication after discharge is an essential component to promote positive patient outcomes and prevent re-admissions. Post-discharge communication occurring 48 -72 hours after discharge has been found to effectively secure follow-up care with PCPs and prevent re-admissions (Jack et al., 2009). Assuring follow-up care after discharge, optimality within seven to fourteen days has been found to successfully prevent re-admissions (Harrison, et al., 2011; Jack et al., 2009). During post-discharge, telephonic communication case management

personal was able to verify PCP follow-up care, 10% of patients required additional assistance securing primary care appointments and transportation.

Additionally, 13% of patients were not compliant with the prescribed medication regimen at discharge. Lack of adherence was due to medication availability from local pharmacies or patient financial constraints. Case Management personal successfully assisted these patients with securing medications from surrounding pharmacies and through financial aid offered from pharmaceutical discount programs. Other studies have noted similar issues with non-adherence to medication regimens that contribute to patient re-admissions (Arnold et al., 2015; Blee, Roux, Gautreaux, Sherer, & Garey, 2015; Bradley et al., 2013). Furthermore, medication reconciliation errors noted and patient misunderstandings regarding their medical diagnosis were rectified during the post-discharge telephonic communication.

Strengths and Limitations

A unique aspect of the current study was its ability to address the lack of evidential findings in current literature on the utilization of systematic discharge processes in rural acute care facilities. While there are some demographical differences specific to the acute care facility in which the study was conducted, male to female nurse percentages, number of masters or higher prepared nurses, and weekly hours worked are comparable. Very few evidential findings have actual assessed self-directed learner readiness of nurses. The study conducted by Linares (1989) is outdated and evaluated registered nurses in the acute and non-acute settings. Therefore, one key strength of the current study is that it assesses the level of self-directed learner readiness among nurses in a rural acute care facility. Another unique aspect of the current study is the correlations found between female nurses and those of PRN status having a higher level of self-directed readiness to learn.

Likewise, there are little evidential findings on the effects of implementing the REDs discharge program in rural acute care facilities. While the Snyder (2015) study offers some comparison, the assessment method of the Snyder study was through a pre-and post-education intervention. However, the current study evaluated charts for the actual utilization of the 12-actionable items pre-and post-education intervention. Therefore, this current study examined the nurses' actual retention and application of the evidence-based program.

The post-intervention qualitative questions provided insight into the learning preferences of rural acute care nurses. The current study education sessions were conducted using a mixed method of visual, auditory, and kinesthetic techniques, therefore complying with the Andragogy theory. Further feedback indicated the desire to have education sessions held at the bedside level to support making connections between current practice situations and the learned content.

In the current study, there were some participant demographics unique to the acute care facility. Compared to the national average of BSN prepared nurses practicing in rural areas, there were approximately 15% more practicing in the current study facility, which could have influenced the study findings. Also, the availability of discharge summaries to primary care providers 24 - hours after discharge resulted in a less than true pre-and post-intervention representation due to the change of hospitalist groups during the study. Furthermore, the study was conducted in a single rural acute care facility, lacking a more diverse and generalizable representation of rural acute care facilities.

Implications to Practice and Research

Through this study, participants illustrated a higher than average self-directed learner readiness level in a southeastern rural acute care facility. Individuals with such self-directed learner readiness levels are best fit for jobs that require easy adaptation to change, strong

problem-solving capabilities, and high levels of creativity, such as nursing. Furthermore, when nurses are presented with high level, evidence-based education in a preferred educational format to fit their learning preferences, a higher rate of nurse compliance is illustrated with new education initiatives.

To offer further educational support to nurses, unit-based education should be offered at the bedside level to demonstrate the applicability of new processes to real patient situations and meet the various learning needs of the adult learner. Education sessions should be conducted on various days of the week and times, to promote the success of the nurses. Lastly, subsequent monitoring of the process should be conducted for sustainability and re-enforcement education offered when compliance levels decrease.

Future research efforts should look at broadening the utilization of the RED program among other disciplines, such as with respiratory and physical therapy. Particularly with the various educational components of the RED program to demonstrate interdisciplinary discharge planning efforts. Within current study findings, one of the three non-significantly improved areas could be improved through re-education of providers on the importance of assuring discharge summaries are available to primary care providers within 24 hours after discharge is recommended.

Conclusion

The literature review illustrates the essential need to address multiple areas in the discharge process to prevent readmissions. The southeastern acute care facility shares the same readmission diagnoses that challenge many other healthcare facilities. Supporting evidence unanimously agrees that nurses are at the forefront of initiatives to reduce hospital re-visits. The

RED program offers a nationally recognized evidence-based solution to address the critical components of the discharge process for patients with various diagnosis.

In conclusion, the current study found that nurses with higher levels of self-directed readiness to learn who underwent RED educational sessions significantly improved compliance with an evidence-based education initiative on the RED discharge process. Future research studies should aim to determine factors that support and effect the learning needs of nurses practicing in rural areas and the utilization of best practice standards. With the implementation of changes in care delivery processes, those responsible for education initiatives must make understanding the learner and their learning preferences a priority to promote the success of changes in nursing practice. Therefore, the combination of highly motivated nurses, utilizing best practice standards will inevitably improve the quality of patient care and outcomes.

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Appendix A

Concept	Concept Definition	Measurement
Language Interpretation	Assess the need for and obtain language assistance.	Part 1: Yes or No Part 2: Yes, No, or None Applicable Comment:
Make Follow-up Appointments	Make follow-up appointment with Provider and post discharge test.	Part 1: Yes or No Part 2: Yes, No, or None Applicable Comment:
Report Results Pending at Discharge	Are there pending test results at the time of discharge? Pending results reported to Primary Care Provider?	Part 1: Yes or No Part 2: Yes or No Comment:
Organize Post-discharge services	Organize post-discharge medical equipment and outpatient services.	Part 1: Yes, No, or None Applicable Part 2: Yes, No, or None Applicable Comment:
Medication Reconciliation	Reconcile medications	Part 1: Yes or No Part 2: Yes, No, or None Applicable
Reconcile with National Guidelines	Are national guidelines applicable? If so, reconcile discharge treatment plans with national guidelines.	Part 1: Yes, No, or None Applicable Part 2: Yes or No Comment:
Teach Discharge Plan	Teach a written discharge plan.	Yes or No Comment:
Educate Patient About Diagnosis	Provide education to the patient about their diagnosis.	Yes or No Comment:
Assess Patient Understanding	Assess the patient's understanding about the discharge plan using the teach-back method.	Yes or No Comment:
Plan for Problems	Review with the patient what to do if a problem arises.	Yes or No Comment:
Expedite Discharge Summary	Discharge summary to Primary Care Provider within 24 hours of discharge.	Yes or No Comment:
Telephone Follow-up Post-Discharge	Within 3 days of discharge call the patient to reinforce discharge instructions.	Yes, No, or None Applicable Comment: Part 1: Yes, No, or None Applicable Comment:

	<p>1. Was the follow-up appointment verified with PCP?</p> <p>2. Review of medications completed?</p> <p>3. Was the diagnosis and health status verified by teach back method?</p>	<p>Part 2: Yes, No, or None Applicable Comment:</p> <p>Part 3: Yes, No, or None Applicable Comment:</p>
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Appendix B

Post-discharge Follow-up Phone Call Documentation Form

Patient name: _____

Caregiver(s) name(s): _____

Relationship to patient: _____

Notes: _____

Discharge date: _____

Principal discharge diagnosis: _____

Interpreter needed? Y N Language/Dialect: _____

.....
Prior to phone call:

Review:

Health history

Medicine lists for consistency

Medicine list for appropriate dosing, drug-drug and drug-food interactions, and major side effects

Contact sheet

DE notes

Discharge summary and AHCP

Call Completed: Y N

With whom (patient, caregiver, both): _____

Number of hours between discharge and phone call: _____

Consultations (if any) made prior to phone call:

None

Called MD

Called DE

Called outpatient pharmacy

Other: _____

If any consultations, note to whom you spoke, regarding what, and with what outcome:

Phone Call Attempts

Patient/Proxy

Phone Call #1: Date & Time: _____ Reached: Yes/No Phone Call #1: Date & Time: _____ Reached: Yes/No If No (circle one): ans. machine/no answer/not home/declined to provide information/busy/other: Phone Call #2: Date & Time: _____ Reached: Yes/No If No (circle one): ans. machine/no answer/not home/declined to provide information/busy/other: Phone Call #3: Date & Time: _____ Reached: Yes/No If No (circle one): ans. machine/no answer/not home/declined to provide information/busy/other: Phone Call #4: Date & Time: _____ Reached: Yes/No If No (circle one): answ. machine/no answer/not home/declined to provide information /busy/other: Phone Call #5: Date & Time: _____ Reached: Yes/No If No (circle one): answ. machine/no answer/not home/declined to provide information/busy/other: Phone Call #6: Date & Time: _____ Reached: Yes/No If No (circle one): answ. machine/no answer/not home/declined to provide information/busy/other:

Alternate Contact 1

Alternate Contact 2

Phone Call #1: Date & Time: _____ Reached: Yes/No If No (circle one): ans. machine/no answer/not home/declined to provide information/busy/other: Phone Call #2: Date & Time: _____ Reached: Yes/No If No (circle one): ans. machine/no answer/not home/declined to provide information/busy/other: Phone Call #3: Date & Time: _____ Reached: Yes/No If No (circle one): ans. machine/no answer/not home/declined to provide information/busy/other: Phone Call #4: Date & Time: _____ Reached: Yes/No If No (circle one): answ. machine/no answer/not home/declined to provide information /busy/other: Phone Call #5: Date & Time: _____ Reached: Yes/No If No (circle one): answ. machine/no answer/not home/declined to provide information/busy/other: Phone Call #6: Date & Time: _____ Reached: Yes/No If No (circle one): answ. machine/no answer/not home/declined to provide information/busy/other:
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A. Diagnosis and Health Status

Ask patient about his or her diagnosis and comorbidities

- Patient confirmed understanding
- Further instruction was needed

If primary condition has worsened:

What, if any, actions had the patient taken?

- Returned to see his/her clinician (name): _____
- Called/contacted his/her clinician (name): _____
- Gone to the ER/urgent care (specify): _____
- Gone to another hospital/MD (name): _____
- Spoken with visiting nurse (name): _____
- Other: _____
- What, if any, recommendations, teaching, or interventions did you provide?

If new problem since discharge:

Had the patient:

- Contacted or seen clinician? (name): _____
- Gone to the ER/urgent care? (specify): _____
- Gone to another hospital/MD? (name): _____
- Spoken with visiting nurse? (name): _____
- Other?: _____

Following the conversation about the current state of the patient's medical status:

What recommendations did you make?

- Advised to call clinician (name): _____
- Advised to go to the ED
- Advised to call DE (name): _____
- Advised to call specialist physician (name): _____
- Other: _____

What follow-up actions did you take?

- Called clinician and called patient/caregiver back
- Called DE and called patient/caregiver back
- Other:

B. Medicines

Document any medicines patient is taking that are **NOT** on AHCP and discharge summary:

Document **problems** with medicines that are on the AHCP and discharge summary (e.g., has not obtained, is not taking correctly, has concerns, including side effects):

Medicine 1: _____

Problem: _____

- Intentional nonadherence
- Inadvertent nonadherence
- System/provider error

What recommendation did you make to the patient/caregiver?

- No change needed in discharge plan as it relates to the drug therapy
- Educated patient/caregiver on proper administration, what to do about side effects, etc.
- Advised to call PCP
- Advised to go to the ED
- Advised to call DE
- Advised to call specialist physician
- Other: _____

What follow-up action did you take?

- Called hospital physician and called patient/caregiver back
- Called DE and called patient/caregiver back
- Called outpatient pharmacy and called patient/caregiver back
- Other: _____

Medicine 2: _____

Problem: _____

- Intentional nonadherence
- Inadvertent nonadherence
- System/provider error

What recommendation did you make to the patient/caregiver?

- No change needed in discharge plan as it relates to the drug therapy
- Educated patient/caregiver on proper administration, what to do about side effects, etc.
- Advised to call PCP
- Advised to go to the ED
- Advised to call DE
- Advised to call specialist physician
- Other: _____

What follow-up action did you take?

- Called hospital physician and called patient/caregiver back
- Called DE and called patient/caregiver back
- Called outpatient pharmacy and called patient/caregiver back
- Other: _____

Medicine 3: _____

Problem: _____

- Intentional nonadherence
- Inadvertent nonadherence
- System/provider error

What recommendation did you make to the patient/caregiver?

- No change needed in discharge plan as it relates to the drug therapy
- Educated patient/caregiver on proper administration, what to do about side effects, etc.
- Advised to call PCP
- Advised to go to the ED
- Advised to call DE
- Advised to call specialist physician
- Other: _____

What follow-up action did you take?

- Called hospital physician and called patient/caregiver back
- Called DE and called patient/caregiver back
- Called outpatient pharmacy and called patient/caregiver back
- Other: _____

C. Clarification of Appointments

Potential barriers to attendance identified: Y N

List: _____

Potential solutions/resources identified: Y N

List: _____

Alternative plan made: Y N Details: _____

Clinician/DE informed: Y N Details: _____

D. Coordination of Post-discharge Home Services (if applicable)

Document any post-discharge services that need to be checked on and who will be doing that (caller/patient/caregiver).

E. Problems

Did patient/caregiver know what constituted an emergency and what to do if a nonemergent problem arose?

Yes No

If no, document source of confusion:

F. Additional Notes

G. Time

Time for reviewing information prior to phone call: _____

Time for missed calls/attempts: _____

Time for initial phone call: _____

Time for talking to other health care providers: _____

Time for follow-up/subsequent phone calls to patient: _____

Time for speaking with family or caregivers: _____

Total time spent: _____

Caller's Signature: _____