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Effect of Staff Education Pre-hospital Readmission Reduction Program Implementation in a Critical Access Hospital in Rural North Dakota

Jessica Jean Larson

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EFFECT OF STAFF EDUCATION PRE-HOSPITAL READMISSION REDUCTION
PROGRAM IMPLEMENTATION IN A CRITICAL ACCESS HOSPITAL IN RURAL
NORTH DAKOTA

By

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Bachelor of Science, University of North Dakota, 2007

Master of Science, University of North Dakota, 2011

A DNP Project

Submitted to the Graduate Faculty

of the

University of North Dakota

In partial fulfillment of the requirements

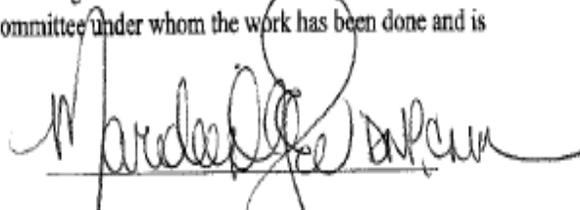
for the degree of

Doctor of Nursing Practice

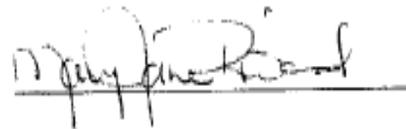
Grand Forks, North Dakota

December 2017

This DNP Project, submitted by Jessica Jean Larson in partial fulfillment of the requirements for the Degree of Doctor of Nursing Practice from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

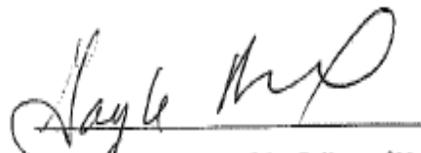


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This DNP Project is being submitted by the appointed advisory committee as having met all of the requirements of the School of Graduate Studies at the University of North Dakota and is hereby approved.



Dr. Gayle Roux, Dean of the College of Nursing
and Professional Disciplines

1/3/18

PERMISSION

Title Effect of Staff Education Pre-Hospital Readmission Reduction Program
 Implementation in Critical Access Hospital in Rural North Dakota

Department Nursing

Degree Doctor of Nursing

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Jessica J Larson

12/3/2017

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Abstract

Every patient that presents to a hospital for admission arrives with a unique medical, surgical, social, and family history that impacts not only their hospital stay but their potential for readmission. Therefore, it is crucial that discharge planning becomes an integral component in their medical care. The Medicare Payment Advisory Commission has found many hospital readmissions can be prevented. The Hospital Readmission Reduction Program (HRRP) was created in 2012 to begin regulating improvement of unnecessary hospital readmissions. The purpose of this project was to educate a multidisciplinary staff regarding the readmission reduction program, Better Outcomes to Optimize Safe Transitions (BOOST), to ensure proper implementation and sustainability of the program. If attained, this project would contribute to the reduction of readmission rates and provide high quality of care to patients. This study used a purposive sample including 13 registered nurses (RN), licensed practical nurses (LPNs), physician assistants (PAs), and nurse practitioners (NPs) at a Critical Access Hospital (CAH) in rural North Dakota. The intervention utilized a pre- and post-test design to evaluate the impact of a brief educational seminar prior to the implementation of a hospital readmission reduction program. Education resulted in a statistically significant increase in perceived knowledge among participants post-education ($p=0.000$) that continued through twelve-weeks ($p=0.005$). There was a statistically significant improvement in perception of ability to impact readmission rates post-education ($p=0.000$). A decline in perception was seen at eight ($p=.129$) and twelve-weeks ($p=.241$) post-program implementation. There was a 177.84% increase in time spent preparing patients for discharge between the post-education survey and subsequent surveys. The interdisciplinary brief educational session including didactic, PowerPoint, video, and discussion was a successful training tool used in this CAH. Study participants are now spending more time per shift preparing patients for discharge.

Effect of Staff Education Pre-Hospital Readmission Reduction Program Implementation in a
Critical Access Hospital in Rural North Dakota

Hospital readmissions can be decreased with a new approach to patient care. This new type of care must begin the moment the patient enters the door of a hospital. It cannot end with discharge, but rather extend into patient follow-up to assure success at home. The care is tailored to the needs of each individual patient, taking into consideration their unique medical, surgical, social and family history. The care makes screening for patient's discharge failure risk a priority, and addresses these risks before discharge. Discharge screening involves effective implementation of readmission reduction programs in hospitals across the nation. It begins with successful education of the staff administering these programs.

Background and Significance

Origins of 30 Day Readmissions

Readmissions have been studied now for over a decade. A hospital readmission, according to Centers for Medicare and Medicaid Services (CMS), is defined as a patient readmitted with the identical condition to the same or a different hospital within 30 days of a discharge (Centers for Medicare and Medicaid Services, 2016 para. 3). A patient may be discharged from hospital A and still be considered a readmission to hospital B if admitted for the same condition within 30 days. In 2000, Benbassat and Taragin conducted a literature review that indicated readmissions were caused by substandard care during hospitalization, poor resolution of the admitting hospital problem, instability at the time of patient discharge, or poor post discharge care. Although it has been seventeen years since the study, their findings are still consistent with those causes of readmission today.

Prior to the development of the Hospital Readmission Reduction Program (HRRP) on October 1st, 2012, the Medicare Payment Advisory Commission found that up to one in five Medicare discharges resulted in readmission. Estimates show that 12% of these readmissions could have been prevented. According to McIlvennan, Eapen, and Allen (2015), “preventing even 10% of these readmissions could have saved Medicare one billion dollars” (p. 1796). Their findings, in terms of economic impact, made hospital readmissions a national priority.

The implementation of HRRP provided financial incentives for hospitals to reduce readmissions. Hospitals with Medicare beneficiaries receive payment through a system known as the inpatient prospective payment system (IPPS). Payments are based on diagnosis-related groups (DRGs). When hospitals exceed the national average readmission rate, they are assessed a penalty. In 2013, the penalty was one percent of the DRG. In 2014, the maximum penalty increased to two percent. In 2015, the penalty increased to three percent of the related DRG where it has remained for subsequent fiscal years (CMS, 2016; McIlvennan et al., 2015; Sheingold, Zuckerman, & Shartzter, 2016).

The DRGs have also expanded since the HRRP program first began. Initially, the program only included acute myocardial infarction, pneumonia, and heart failure. The diagnoses now include acute myocardial infarction, heart failure, pneumonia (including aspiration pneumonia and sepsis patients coded with pneumonia on admit), acute exacerbation of chronic obstructive pulmonary disease, elective total hip arthroplasty, and total knee arthroplasty. During fiscal year 2017, CMS also expanded the DRGs to include patients admitted for coronary artery bypass grafting. The diagnosis is identified by the primary diagnosis at the time of discharge (CMS, 2016; McIlvennan et al., 2015; Sheingold, Zuckerman, & Shartzter, 2016).

Consequences of HRRP for Critical Access Hospitals

Revenue to Critical Access Hospitals (CAHs) comes from a variety of sources: county, state, or from private sources such as foundations, private insurance, and fees. Revenue also comes from Medicare (Crosby, Wendel, Vanderpool, & Casey, 2012). Due to higher reliance on state and federal payers, low patient volume, and services provided, many rural hospitals find it difficult to stay open under traditional Medicare payments. In addition, limited cash flow makes investments in the facility and equipment difficult – if not impossible (Rural Health Information Hub, 2016). Consequently, cuts to hospital payments take their toll on rural hospitals, and funding cuts contribute to rural health disparities.

In 2013, according to section 1886 (q)(5)(C) of the Social Security Act, hospitals currently excluded from the readmission adjustment factor include long-term care hospitals, CAHs, rehabilitation hospitals and units, psychiatric hospitals and units, children's hospitals, and prospective payment system exempt cancer hospitals. Fiscal year 2017 did not demonstrate change to this exclusion, nor does the list of 2018 fiscal updates mention dropping these hospitals as exclusions (QualityNet, 2016).

Although the readmission adjustment factor may not currently be of concern for CAHs, the regulation Medicare Access and CHIP Reauthorization Act (MACRA) of 2015 is of concern. January 1st, of 2017, marked the launch of MACRA, Medicare's new payment system, which places a greater focus on value and performance. Not only will a hospital's reimbursement be affected by value and performance, but also value and performance scores will be placed on the website, medicare.gov, for patients to view before choosing their hospital and provider (Department of Health and Human Services, CMS, 2017).

In this era of value- based payment models and quality care transparency, CAHs need to continue working diligently to perform at their best to avoid closure. The administrative team at the CAH in which this project took place has proactively decided to move forward with the development and implementation of a readmission reduction program. At any point in the future, CAHs could be dropped as an exclusion from section 1886 (q)(5)(C) of the Social Security Act. In addition, MACRA has already been launched and patients are being trained to look for a health care provider and facility that will provide them with the best health outcomes. The development of a successful readmission reduction program at a CAH would not only prepare that hospital for HRRP, but also would improve value and performance under MACRA (Department of Health and Human Services, CMS, 2017).

Introduction of BOOST

The Better Outcomes by Optimizing Safe Transitions (BOOST) program, or BOOST, is a modified risk assessment tool that has been chosen by the CAH to lower readmissions and improve quality of care. It was developed by the Society of Hospital Medicine to identify individuals who are at high risk for readmission. It utilizes interventions to mitigate adverse events, decrease 30-day readmission rates, improve patient satisfaction and Hospital Consumer Assessment of Health Plans Survey (H-CAHPS) scores, improve the communication and information flow between hospital and outpatient providers, and improve the discharge process. It was developed in 2008 through support from the John A. Hartford Foundation. Currently there are more than 180 hospitals across the United States that have implemented BOOST to reduce readmissions (Society of Hospital Medicine, 2010).

Literature Review

To determine the best format for an educational program used to introduce a hospital readmission reduction program to interdisciplinary staff at a CAH, a database search of CINAHL and PubMed was conducted. Keyword combinations utilized in the search were “adult education,” “hospital setting,” “program development,” “staff education,” and “prior to program implementation.” The search inclusion criteria were limited to clinical trial research articles or randomized controlled trials (RCT) in the English language published between 2011 and 2017. This strategy resulted in 161 articles for review. After reviewing the 161 articles and excluding those that involved educational programs for patients, or articles in which the educational program were not the focus of the research, 13 articles remained. Of the remaining relevant 13 articles, educational programs within the articles were described as either brief (one session) or extended (multiple session) programs.

Brief Educational Programs

Didactic. Smothers and Buck (2012); Tsai et al. (2011); Zachritz, Fulmer, and Chaney (2016); and Sarayani et al. (2015) studied brief education programs (BEPs) to prepare staff for project changes or implementation. Smothers and Buck (2012) educated hospice nursing staff on a toolkit that discussed nonpharmacologic interventions for dyspnea. This one-hour education session included a pretest/posttest. The data collected from the pretest/posttest suggested that nursing staff did have knowledge prior to the education regarding nonpharmacologic interventions; however, only 28.6% of participants were actually educating patients and caregivers about these methods. This rate increased to 57% post-education. Tsai et al., (2011) utilized a 1.5-hour didactic educational program to educate emergency room nurses about alcohol consumption. There was a statistically significant improvement in knowledge scores and

self-efficacy for participants at both one and three-month testing periods. Zachritz et al. (2016) created an in-service that consisted of a PowerPoint presentation, a review of guidelines on safe sleep practices, and a demonstration of safe sleep practices to reduce the risk of sudden infant death syndrome (SIDS). Pre-program introduction showed only 20% of staff were following safe sleep practices with patients. At six months post-program implementation that figure rose to 90%. Sarayani et al. (2015) used a three-arm study to identify the differences in short-term learning and knowledge retention between didactic only intervention, workshop intervention, or the control group which received no intervention. Baseline knowledge scores were similar for all three groups. Immediately after the intervention the didactic group scored the highest. Three-month follow-up knowledge scores showed both the didactic group and workshop group to test equally.

All four of the studies reviewed demonstrated that a BEP, lasting between one and four hours, with the exception of Zachritz et al. (2016) who did not mention the duration of their BEP, could be successful in increasing participant knowledge of topics discussed. The degree of increased knowledge did vary. Evaluation of all brief didactic education programs identified in the database search: Smothers and Buck (2012); Tsai et al. (2011); Zachritz, Fulmer, and Chaney (2016); and Sarayani et al. (2015) demonstrated improvement in knowledge pre-and post-education.

Web based education programs. One study in the literature review addressed web based training. Amerine et al. (2015) studied the knowledge of pharmacists pre-and post-utilization of a brief web-based education program. This brief program consisted of 5-12-minute modules on each clotting factor concentrate. Amerine et al. (2015) does not list the number of modules or total length of time for participants. Participants did have a statistically significant

improvement in correct answers on their post-implementation survey. This demonstrates an increase in participant knowledge through the use of a web-based BEP, similar to that of a didactic BEP.

Didactic and simulation combination. Burke, Grobman, and Miller (2013) and Cimini et al. (2014) both utilized a combined approach of didactic instruction and simulation in their BEPs. Burke et al. (2013), discussed the implementation of an education program that taught multidisciplinary staff about creating a safe patient environment. The didactic session and simulations combined were two hours in length. Evaluations indicated that participants enjoyed learning as a multidisciplinary team. A post-education safety questionnaire showed a statistically significant improvement in staff perception of patient safety. Cimini et al. (2014) utilized both a single 1.5-hour didactic session and interactive role-playing exercises to teach university staff. There was a statistically significant improvement in both knowledge and comfort level from pre- to post-training. Knowledge and comfort then dropped significantly from the time of post training to the three-month follow-up assessment. Despite the decrease in knowledge and comfort scores, findings remained higher than baseline. The utilization of didactic and simulation BEPs show continued positive results in knowledge improvement and other positive outcomes.

All BEPs, despite the format, resulted in an increase in participant knowledge. Utilizing a multidisciplinary staff approach resulted in positive results for Burke et al. (2013). Cimini et al. (2014) began to notice knowledge degradation at three months post-implementation of the BEP, cautioning the monitoring of this in future studies.

Extended Educational Program

Didactic and miscellaneous. Six studies highlighting extended education programs (EEPs) were reviewed. Babine, Honess, Wierman, and Hallen, (2016) discussed the

implementation of an interdisciplinary EEP prior to implementation of a delirium screening tool used inpatient. The EEP began with a live class. The class was supplemented with e-learning, express inservices, brochures, and a poster presentation. Repeat education was conducted at three, six, and twelve months. There was a statistically significant improvement in staff knowledge and confidence over the twelve-month training period.

Gilmore et al. (2015) discussed the education of pharmacists pre-implementation of a readmission reduction program. Details of the initial education program were not outlined, however, the authors discussed moving to the two-phase training to adequately prepare staff. Phase one was two weeks in length and phase two was four weeks in length. A reduction in readmissions was seen after implementation of the readmission reduction program.

Chrupcala, Edwards, and Spatz, (2015) utilized an EEP to educate neonatal nursing staff about infant driven feeding. These staff members had already completed a two day, 16-hour, course on breastfeeding in order to become breastfeeding resource nurses. To further educate the staff about infant driven feeding, they then included 15 minutes of online education, monthly team meetings, and re-education throughout the program. Length-of-stay for neonates was decreased by 6.63 days during the quality improvement project.

Fossli-Jensen, Gulbrandsen, Dahl, Krupat, Frankel, and Finset, (2011) found that the implementation of a 20-hour communication skills program for provider staff demonstrated improvement of these skills for hospital doctors. This program consisted of didactic and group sessions. Mockiene et al. (2011) utilized both a two-day workshop consisting of lectures, group discussion, written materials, a film, and lecture handouts. There was a statistical significant difference in the knowledge scores and attitude post intervention. Jaromi, Nemeth, Kranicz, Laczko, and Betlehem, (2012) studied the effects of weekly 50-minute training exercise sessions

on ergonomics, muscle strengthening, and stretching which continued for six weeks. There was a statistically significant decrease in back pain and improvement of body posture upon analysis of participants before and after the six week intervention. This difference continued at both the six and twelve month follow-up evaluations.

When comparing the BEP and EEP outcomes, the articles reviewed demonstrate an increase in participant knowledge through all educational formats tested. Retained knowledge beyond three months was only demonstrated in the EEPs. The BEPs when compared to the EEPs required less resources and time for implementation. The EEPs utilized multiple teaching modalities, but while useful for learning, the EEPs could also be expensive and time consuming.

Project Purpose

Project Goals and Objectives

The purpose of this Doctor of Nursing Practice (DNP) project was to educate multidisciplinary healthcare providers in a CAH about a readmission reduction program prior to its implementation. The goals of this project were to develop healthcare provider knowledge about hospital readmissions and the readmission reduction program, improve healthcare provider perception of the program's success, and increase healthcare provider time spent on discharge planning. If attained, these goals would contribute to the reduction of readmission rates and improve quality of care to patients. In order to evaluate if the goals were met by October 2017, the following objectives were measured:

- There would be an increase in self-percieved knowledge as evidenced by a 20% improvement of scores on the post-implementation survey.
- There would be an increase in participant perception as evidenced a 20% improvement of scores on the post-implementation survey.

- There would be an increase in time spent working on discharge planning as evidenced by a 10% increase in impact scores on the post-implementation survey.

Design and Methods

Developing the Education Program

Based on the knowledge gained from the literature review, the DNP student proceeded with development of a brief education program. This comprehensive education program was accomplished in three phases: (a) program design, (b) program implementation, (c) and program evaluation. To advance through these three phases successfully, the focus of this project included the following steps: (a) establish the need for a program, (b) establish a research bias for program design, (c) implement the program, and (d) evaluate the program (Calley, 2011; Longest, 2015).

Application of a Theoretical Framework

Applying Knowles' key assumptions from *The Adult Learning Theory* to the DNP project, a voluntary brief education program was created for the local CAH to provide its staff with information about a hospital readmission reduction program planned for implementation in fall, 2017. The voluntary nature of the program was consistent with the adult learners "self-concept," that the adult must have the ability to choose to participate. Nursing staff, physician assistants and nurse practitioners, who would be key players in the implementation process, were invited to the program. These participants were chosen as they work in the acute care setting of the hospital and would be implementing the readmission reduction program, therefore being able to apply the knowledge to their current life situation. The program began with an introduction to the hospital's current readmission rates and potential consequences of high readmission numbers. Establishing a need to know foundation highlighted the impetus behind implementation of a readmission reduction program at this CAH. Staff participated in a problem-centered orientation

to learning that included: a short didactic lecture on the basics of hospital readmissions and the effects on the hospital, staff, and community; a PowerPoint handout to reference; and a video on the Teach Back Technique which is a skill used to improve communication with patients. To capture the experiences of the groups involved with the education, a group discussion was held at the end of each session (Knowles, Holton, & Swanson, 2014).

Setting

The DNP project took place in a 20-bed CAH in rural North Dakota. The hospital is an accredited Level V trauma center. The 20-bed hospital has an attached emergency room and clinic. Swing bed, chiropractic services, chronic disease management, laboratory services, physical therapy, social services, CT scan, digital mammography, x-ray, nuclear medicine (mobile unit) and ultrasound (mobile unit) are available on site for patient care.

Recruitment and Protection of Subjects

The DNP student investigator conducted the consent interviews on site prior to the educational implementation. Each participant was given a statement of the purpose of the project, a description of any foreseeable risks or discomforts, and description of any benefits that might be expected to be derived from participation in the research. Confidentiality and/or anonymity of records was discussed and participants were informed of the project's voluntary participation and right-to-refuse participation, or right to withdraw from the project at any time without penalty. Two contact numbers were made available on the consent, the DNP student investigator's and the advisor's. The participant was given adequate opportunity to ask questions and discuss the study prior to signing the consent form.

The information from the surveys was transcribed into an electronic format without any identifying information, stored on a protected computer and encrypted flash drive, and the

original form was shredded to prevent any identification through handwriting. The research data and the consent forms/personal data will be saved for three years; at the end of those three years the data will be erased.

Participants

This DNP project used a purposive sample of 13 registered nurses (RNs), licensed practical nurses (LPNs), physician assistants (PAs), and nurse practitioners (NPs) at a CAH in rural North Dakota. Qualifications for participation included: employment at the CAH, working in the acute care setting, being a nurse, PA, or NP. Physicians were excluded from this project since they are only on-site one to two times a month, and do not see acute care patients. A further breakdown of the sample by role is seen on the next page (See Figure 1).

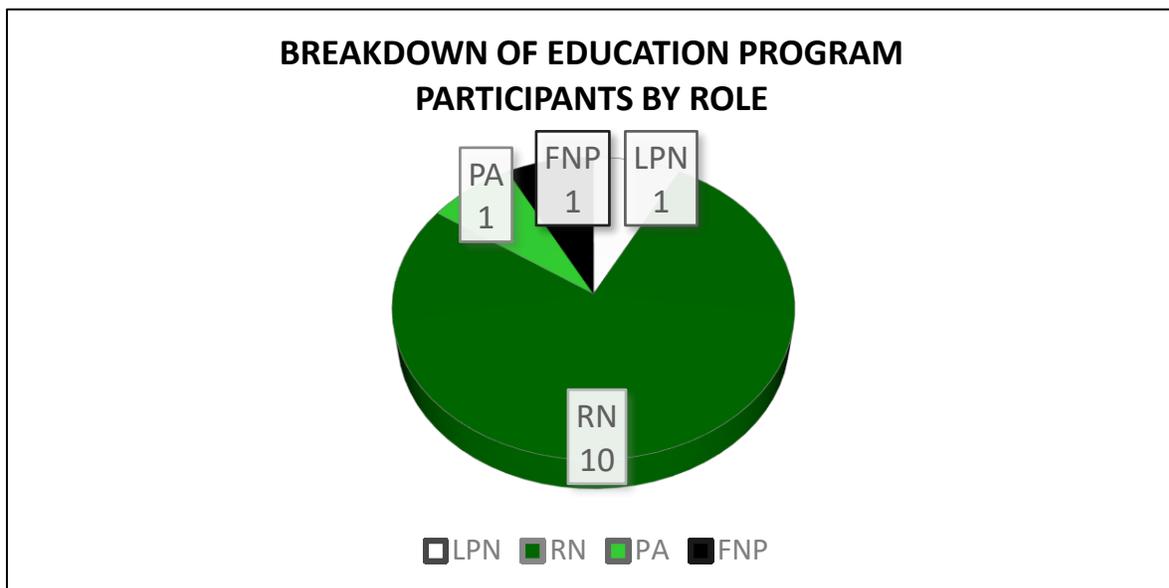


Figure 1: Breakdown of Education Program Participants by Role

Design and Measures

The DNP project utilized a quasi-experimental one group pretest-posttest design. This design type was chosen as it allows for an intervention, but does not require randomization or a control group (Polit & Beck, 2017) which becomes difficult with a small sample size often seen in CAHs. Comparisons were used within-subject design, looking at the same participants responses to surveys at different times throughout the study.

Resources

Resources included a conference room to educate the staff, a television, digital video disk (DVD) and the Teach Back Technique DVD. Financial resources were minimal. The CAH did not charge for use of the conference room, TV, DVD player and funding for the DVD, food and beverages was provided by the DNP student. The CAH paid nursing staff participating in the research their hourly wage for the three-hour educational session. The session was held over two separate nights, so as not to interfere with staffing and offer staff two different opportunities to attend and participate.

Implementation

Two independent educational sessions were held on separate dates at different times of day to decrease interference with staffing and offer staff varying opportunities to attend and participate. The interdisciplinary brief education program (BEP) began with participants completing an initial survey to explore the participants' baseline perceived knowledge about HRRP and the readmission reduction program to be implemented at the CAH, perception of the readmission reduction program, and impact. The session consisted of a PowerPoint presentation, video on Teach Back Technique, didactic instruction, and discussion. The PowerPoint

highlighted, which responsibilities (or screenings) of the readmission reduction program belonged to each role, and how and when to communicate findings with other roles. The PowerPoint was also provided as a handout to the participants as a reference when beginning the readmission reduction program. Staff was educated on day-to-day procedures of implementing the readmission reduction program utilizing both PowerPoint and didactic technique. A twenty-minute video on teach back technique was viewed next. Lastly, there was a time of discussion and questions. The post-education survey immediately followed the education session. At eight and twelve-weeks post-program implementation surveys were dispensed to participants. Participants were given one week to complete the survey before collection.

Project Timeline

The educational session dates were established for May 30th and 31st, 2017. On these dates the pre-education survey was followed by the 3-hour BEP. The post-educational survey was completed following the BEP. There was a small lapse in time between May 31st, 2017 and June 20th, 2017. The administrative team at the CAH decided they would like the readmission reduction program to be formatted into their electronic medical record (EMR) prior to beginning the program. During this time, the DNP student worked with both administration and information technology staff to convert the readmission reduction program from paper to the EMR. Once the EMR revision was complete, the readmission reduction program was rolled out on June 20th, 2017. On August 26th, 2017 the eight-week post-readmission reduction program implementation survey was dispensed. This survey was placed in a folder in the nursing report room for participants to complete. Participants were instructed to place their completed surveys in an enclosed box with a slit opening in it that prohibited withdrawal of the survey by anyone other than the DNP student. A flyer in the report room asked all study participants to complete

the eight-week survey by 9/2/2017 at noon. October 1st, 2017, the 12-week post-readmission reduction program implementation survey was distributed following the same technique as the 8-week post-implementation survey. It was collected on 10/8/2017 at noon.

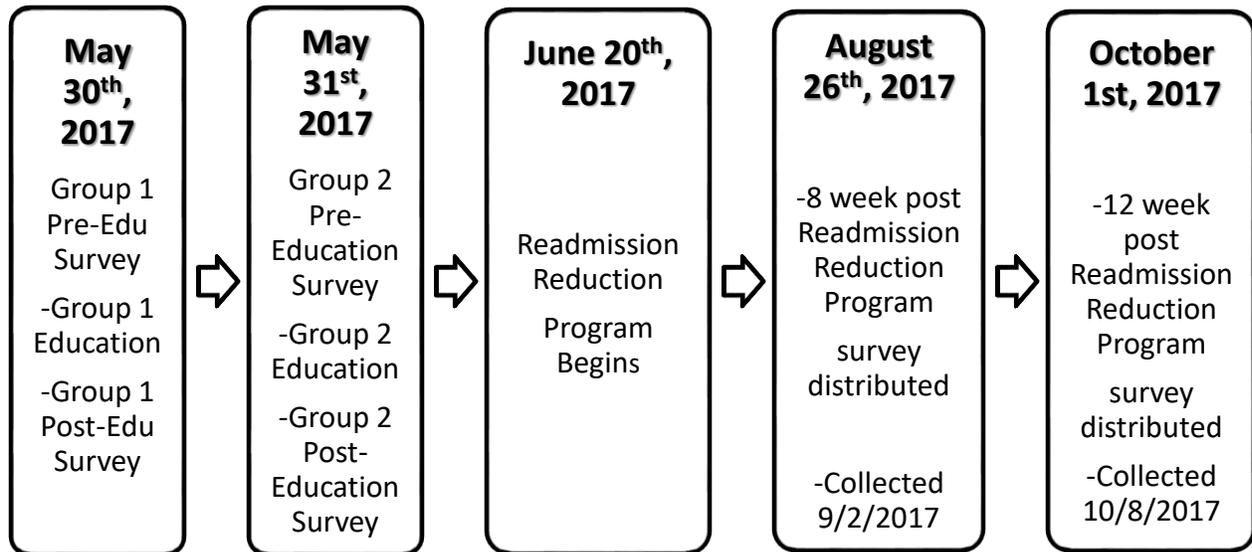


Figure 2: Project Timeline

Data Analysis and Interpretation

Survey data was collected over four separate time-periods: pre-education ($n = 13$), immediate post-education ($n = 13$), 8-week post-education ($n = 10$), and 12-week post-education ($n = 6$). The purpose of the data-collection method was to measure the change-over-time (if any) from the pre-education survey question responses to the same questions of the other three time-periods. Data analysis was completed utilizing v24, Statistical Package for the Social Sciences (SPSS). Because of the relatively small sample sizes and the non-normality of most of the data, the Mann-Whitney U -test (a nonparametric analog for an independent-groups t -tests) was utilized to test the null hypothesis that the independent groups (surveys) completed pre-education, post-education, 8-week post-education, and 12-week post-education were not identical.

Self-Perceived Knowledge

The first area examined was the participant's self-perceived knowledge. Question No. 1, as shown in Appendix A-D, asked: How knowledgeable would you consider yourself regarding hospital readmissions and the Hospital Readmission Reduction Program? There was a statistically significant increase in the perception of knowledge at post-education ($p=0.000$) that carried through at 8 ($p=0.003$) and 12-weeks ($p=0.005$) post-readmission reduction program implementation. In all but two instances of the self-perceived knowledge area, the median difference between the pre-education and the other comparison time-periods were statistically significantly different: Question No. 2, as shown in Appendix A-D, showed the only non-significant differences, which occurred between the pre-education survey and the post-education ($p = .281$), and between the pre-education survey and the 12-week follow-up survey ($p = .067$). Question No. 2 asked: How knowledgeable would you consider yourself regarding the skills required to communicate effectively with patients? Anecdotal data was received from the study participants that they were occasionally struggling with the administration of the readmission reduction program to patients. There had been instances in which patients were hesitant to participate in the readmission reduction program for fear that the screening was to determine if they were nursing home candidates. This could explain a drop in the scores of Question No. 2.

Perception of the Readmission Reduction Program

The next area examined was the participants perception of the readmission reduction program. For these questions, only two of the comparisons were statistically significant: Question No. 8 comparing pre-education and post-education surveys ($p = .000$), and Question No. 10, also for the comparison between pre-education and post-education surveys ($p = .047$). In

Question No. 8 How strongly do you feel that you are capable of impacting readmission rates at XXXX (the name of the CAH was placed here on the actual survey)? The mean increase from 7.00 pre-education to 9.00 immediately post-education. At 8-week post-implementation of BOOST the mean dropped to 7.50. At 12-weeks post-implementation of BOOST the mean dropped further to 7.00. The DNP student questions if this drop could be due to lack of feedback regarding readmission rates. In addition, anecdotal data was received from a night shift participant. This participant expressed concern that she had not had the opportunity to utilize her knowledge and skill on the night shift because of the small number of Medicare admits and that BOOST duties were being completed on day shift. Patients' reluctance to participate in the BOOST program because of an impression that it was a screening tool for nursing home placement frustrated participants. This frustration could lead to a decrease in perception of the program.

Impact

Lastly, data analyzing the impact that the BOOST program would have on participants' shift workload were analyzed ($n = 13$ for pre-education, $n = 13$ for post-education, $n = 10$ for 8-week post-education, and $n = 6$ for 12-week post-education). The responses in this section of the survey were "counts" of people responding to a "time-width". Therefore, weighted-means were calculated. For each question in each phase, the respective weighted-mean is the sum of the products of a midpoint of a time-width times the number of respondents, divided by the sample size.

Table 11, in Appendix G, demonstrates the amount of time that the participants were spending preparing patients for discharge. Initially participants had estimated spending 20.46 minutes-per-shift with patients. Immediately after completing a three-hour education session

their estimate changed to 14.62 minutes. A possibility for this decrease in estimation was that the participants initially overestimated the time they were spending on discharge planning per shift. At eight weeks post-implementation of the readmission reduction program participants then stated they were spending approximately 26 minutes-per-shift on discharge planning. This was a 177.84% increase in time spent preparing patients for discharge when compared to immediate post-education. Time spent on patient discharge remained fairly consistent at 12 weeks with participants spending approximately 25.50 minutes-per-shift.

Table 12, in Appendix G, displays time the participants estimated spending on teaching patients about their medications on each shift. As noted on the table, the time increased to 18.30 minutes at eight-weeks then dropped off to 17.75 minutes at 12-weeks. Likewise, Table 13, in Appendix G, displays time the participants estimated spending on teaching patients about their diagnosis and prognosis on each shift. The time here increased to 21.4 minutes at eight-weeks but then dropped to 15.25 minutes at 12-weeks.

Question No. 14: How much time do you anticipate the readmission reduction program will add to your work day? This question was incorporated into the survey to determine if the participants' perception of time the readmission program would add to their work-day would change throughout the course of the program. Immediately after finishing the educational program, participants estimated the readmission reduction program would add 33.19 minutes to their work day. At eight-weeks post-program implementation the participants responded that the readmission reduction program was adding 19.75 minutes to their work day. Their response was consistent at 12-weeks by stating that the readmission reduction program added 20.33 minutes to their work day.

Question No. 15: How much time do you spend in the first 72 hours following up with patient's after discharge? Initially the charge nurses were going to be doing a 72-hour follow-up with the discharged patients. One week into the study, the Director of Nursing determined that the work-load of the charge nurses was too great and follow-up could get lost. Therefore, the 72-hour follow-up was assigned to a nurse who works in the medical records department. She was not a part of the study and therefore numbers could not be reflected on the survey. The PA and FNP participants continued to do clinic follow-ups with discharged patients and therefore their responses are reflected on the surveys.

Strengths and Limitations

Strengths

The first strength of the DNP project was the use of repetitive surveys to measure perception of sustained knowledge. Post-program implementation surveys were conducted up to 12 weeks to continue monitoring for degradation of knowledge; a potential outcome which was noted in the review of literature by Cimini et al. (2014). However, in this project, it was determined that pre-program education resulted in a statistically significant increase in perceived knowledge among participants post-education, eight-weeks post program implementation, and was sustained even at 12-weeks post program implementation.

The proactive efforts of the administrative staff of the CAH and its stakeholders is another strength. Although section 1886 (q)(5)(C) of the Social Security Act currently makes CAHs except from financial penalties of HRRP, the administration of this CAH and stakeholders strongly believed that it was important to implement a readmission reduction program prior to the anticipated removal of that exception. The administrative staff offered and supplied resources for the BEP, provided a financial incentive to nursing staff to participate by paying

them an hourly wage, and recommended and led the conversion of the readmission reduction program to EMR.

The design of the educational program was a strength. The combination of PowerPoint, didactic, video and discussion in an interdisciplinary BEP was affordable and time efficient for implementation in a CAH. Providing two options for attendance of the BEP decreased interference with staffing, and encouraged more people to attend.

Lastly, the implementation of the BOOST program into the EMR is a strength. The incorporation of the screening elements into the EMR for documentation in the patient record increases the sustainability of the project. It also has the potential to improve compliance by keeping nursing and provider work flow in one area, on the EMR. In addition, implementation of the readmission reduction program into the EMR required interprofessional collaboration between administrative personal, nursing, and information technology staff. This further cemented buy-in from the CAH.

Limitations

A small sample size is a limitation of this project. The small sample size limits the ability to generalize to an entire population or to sectors of the population different from the study population. Completing the study in a larger hospital or in multiple CAHs would have allowed for a larger sample size. A second limitation was the participation rate. Thirteen of the eighteen participants who met the qualifications of the study chose to participate. This is a 72.22% participation rate. Although above 80% participation would be a scientifically acceptable participation rate, less than 100% has the potential for bias (Arfken & Balon, 2011).

Another limitation of the study was the small number of Medicare admits over the course of the study. The small number of Medicare admits did not allow all study participants to fully utilize the knowledge and skills taught to them upon their initial training.

Finally, the Likert scale questions contributed to a project limitation. At the time of the educational training, an early version of the Likert scale questions was inadvertently distributed for the pre-and post-test surveys. This survey version lack clarity that would have contributed to a broader understanding of participant knowledge and understanding of the readmission reduction program.

Implications and Future Directions

Looking forward, the DNP student strongly recommends that the CAH complete six and nine-month post-implementation surveys to continue to monitor the perception of knowledge regarding the readmission reduction program as well as the impact it is making on readmission rates. If degradation of knowledge occurs, a refresher education course would be recommended.

Secondly, encouraging CAH staff to spread the duties of the readmission reduction program over both day and night shifts would allow all staff members the ability to practice their knowledge and skills regularly. The education program should also be included as part of orientation for new staff employees at the CAH. The inclusion of monthly and annual updates to staff on readmission rates would be another avenue to provide feedback to the healthcare providers and acknowledge the impact of their work to reduce readmissions.

Finally, the DNP student encourages transparency of the CAH readmission reduction program to patients and family. To improve transparency, healthcare providers could be taught how to educate their patients about the readmission reduction program during future educational

sessions. Consideration should also be given to include a script that healthcare providers use with patients to teach them about the readmission reduction program.

Conclusion

An interdisciplinary brief educational session including didactic, PowerPoint, video, and discussion was a successful training tool in this CAH. Program education showed a statistically significant increase in perceived knowledge at twelve-weeks post program implementation. At the time of this writing, study participants continue to spend more time per shift preparing patients for discharge.

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Appendix A

Pre-Education Survey

CHECK BOX IF YOU WOULD LIKE TO OPT OUT OF THE SURVEY

DO NOT PLACE YOUR NAME ON SURVEY

KNOWLEDGE QUESTIONS	RESPONSE (PLEASE CIRCLE)
1. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself regarding hospital readmissions and the Hospital Readmission Reduction Program?	1 2 3 4 5 6 7 8 9 10
2. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself regarding the skills required to effectively communicate with patients?	1 2 3 4 5 6 7 8 9 10
3. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself regarding a patient's most vulnerable time for readmission and how to help them succeed during this time?	1 2 3 4 5 6 7 8 9 10
4. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself in screening your hospitalized patients for potential post discharge complications?	1 2 3 4 5 6 7 8 9 10
5. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable are you with assessing the patient for their likelihood of successful discharge without readmission?	1 2 3 4 5 6 7 8 9 10
PERCEPTION QUESTIONS	RESPONSE (PLEASE CIRCLE)
6. On a scale of 1 to 10, with 10 being the strongest, how strongly do you feel hospital readmissions are a problem affecting XXXX?	1 2 3 4 5 6 7 8 9 10
7. On a scale of 1 to 10, with 10 being the strongest, how strongly do you feel that nursing and providers at XXXX are already doing everything possible to prevent hospital readmissions?	1 2 3 4 5 6 7 8 9 10
8. On a scale of 1 to 10, with 10 being the strongest, how strongly do you feel you are capable of impacting readmission rates at	1 2 3 4 5 6 7 8 9 10

XXXX?	
9. On a scale of 1 to 10, with 10 being the strongest, how strongly do you feel implementation of a readmission reduction program will benefit the patients of XXXX?	1 2 3 4 5 6 7 8 9 10
10. On a scale of 1 to 10, with 10 being the most likely, how likely do you feel a readmission reduction program is to be successful at XXXX?	1 2 3 4 5 6 7 8 9 10
IMPACT QUESTIONS	RESPONSE (PLEASE CIRCLE)
11. How much time do you currently spend per shift with patients on discharge planning? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes	1 2 3 4 5
12. How much time do you spend teaching patients about their medications on each shift? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes	1 2 3 4 5
13. How much time do you spend teaching patients about their diagnosis and prognosis on each shift? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes	1 2 3 4 5
14. How much time do you anticipate the readmission reduction program will add to your work day? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes	1 2 3 4 5
15. How much time do you spend in the first 72 hours following up with patients after discharge? 1. 0 minutes 2. 5-10 minutes 3. 11-15 minutes 4. 16-20 minutes 5. >20 minutes	1 2 3 4 5

Appendix B

Post-Education Survey

CHECK BOX IF YOU WOULD LIKE TO OPT OUT OF THE SURVEY

DO NOT PLACE YOUR NAME ON SURVEY

KNOWLEDGE QUESTIONS	RESPONSE (PLEASE CIRCLE)
1. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself regarding hospital readmissions and the Hospital Readmission Reduction Program?	1 2 3 4 5 6 7 8 9 10
2. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself regarding the skills required to effectively communicate with patients?	1 2 3 4 5 6 7 8 9 10
3. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself regarding a patient's most vulnerable time for readmission and how to help them succeed during this time?	1 2 3 4 5 6 7 8 9 10
4. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself in screening your hospitalized patients for potential post discharge complications?	1 2 3 4 5 6 7 8 9 10
5. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable are you with assessing the patient for their likelihood of successful discharge without readmission?	1 2 3 4 5 6 7 8 9 10
PERCEPTION QUESTIONS	RESPONSE (PLEASE CIRCLE)
6. On a scale of 1 to 10, with 10 being the strongest, how strongly do you feel hospital readmissions are a problem affecting XXXX?	1 2 3 4 5 6 7 8 9 10
7. On a scale of 1 to 10, with 10 being the strongest, how strongly do you feel that nursing and providers at XXXX are already doing everything possible to prevent hospital readmissions?	1 2 3 4 5 6 7 8 9 10
8. On a scale of 1 to 10, with 10 being the strongest, how strongly	1 2 3 4 5 6 7 8 9 10

do you feel you are capable of impacting readmission rates at XXXX?	
9. On a scale of 1 to 10, with 10 being the strongest, how strongly do you feel implementation of a readmission reduction program will benefit the patients of XXXX?	1 2 3 4 5 6 7 8 9 10
10. On a scale of 1 to 10, with 10 being the most likely, how likely do you feel a readmission reduction program is to be successful at XXXX?	1 2 3 4 5 6 7 8 9 10
IMPACT QUESTIONS	RESPONSE (PLEASE CIRCLE)
11. How much time do you currently spend per shift with patients on discharge planning? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes	1 2 3 4 5
12. How much time do you spend teaching patients about their medications on each shift? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes	1 2 3 4 5
13. How much time do you spend teaching patients about their diagnosis and prognosis on each shift? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes	1 2 3 4 5
14. How much time do you anticipate the readmission reduction program will add to your work day? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes	1 2 3 4 5
15. How much time do you spend in the first 72 hours following up with patients after discharge? 0 minutes 2. 5-10 minutes 3. 11-15 minutes 4. 16-20 minutes 5. >20 minutes	1 2 3 4 5

Appendix C

Eight Week Post-Implementation Survey

CHECK BOX IF YOU WOULD LIKE TO OPT OUT OF THE SURVEY

DO NOT PLACE YOUR NAME ON SURVEY

KNOWLEDGE QUESTIONS

RESPONSE
(PLEASE CIRCLE)

- | | |
|---|----------------------|
| 1. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself regarding hospital readmissions and the Hospital Readmission Reduction Program? | 1 2 3 4 5 6 7 8 9 10 |
| 2. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself regarding the skills required to effectively communicate with patients? | 1 2 3 4 5 6 7 8 9 10 |
| 3. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself regarding a patient's most vulnerable time for readmission and how to help them succeed during this time? | 1 2 3 4 5 6 7 8 9 10 |
| 4. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself in screening your hospitalized patients for potential post discharge complications? | 1 2 3 4 5 6 7 8 9 10 |
| 5. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable are you with assessing the patient for their likelihood of successful discharge without readmission? | 1 2 3 4 5 6 7 8 9 10 |

PERCEPTION QUESTIONS

RESPONSE
(PLEASE CIRCLE)

- | | |
|---|----------------------|
| 6. On a scale of 1 to 10, with 10 being the strongest, how strongly do you feel hospital readmissions are a problem affecting XXXX? | 1 2 3 4 5 6 7 8 9 10 |
| 7. On a scale of 1 to 10, with 10 being the strongest, how strongly | 1 2 3 4 5 6 7 8 9 10 |

do you feel that nursing and providers at XXXX are already doing everything possible to prevent hospital readmissions?	
8. On a scale of 1 to 10, with 10 being the strongest, how strongly do you feel you are capable of impacting readmission rates at XXXX?	1 2 3 4 5 6 7 8 9 10
9. On a scale of 1 to 10, with 10 being the strongest, how strongly do you feel implementation of a readmission reduction program will benefit the patients of XXXX?	1 2 3 4 5 6 7 8 9 10
10. On a scale of 1 to 10, with 10 being the most likely, how likely do you feel a readmission reduction program is to be successful at XXXX?	1 2 3 4 5 6 7 8 9 10
IMPACT QUESTIONS	RESPONSE (PLEASE CIRCLE)
11. How much time do you currently spend per shift with patients on discharge planning? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes	1 2 3 4 5
12. How much time do you spend teaching patients about their medications on each shift? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes	1 2 3 4 5
13. How much time do you spend teaching patients about their diagnosis and prognosis on each shift? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes	1 2 3 4 5
14. How much time has the readmission reduction program added to your work day? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes	1 2 3 4 5
15. How much time do you spend in the first 72 hours following up with patients after discharge? 2. 0 minutes 2. 5-10 minutes 3. 11-15 minutes 4. 16-20 minutes 5. >20 minutes	1 2 3 4 5

Appendix D

Twelve Week Post-Implementation Survey

CHECK BOX IF YOU WOULD LIKE TO OPT OUT OF THE SURVEY

DO NOT PLACE YOUR NAME ON SURVEY

KNOWLEDGE QUESTIONS	RESPONSE (PLEASE CIRCLE)
1. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself regarding hospital readmissions and the Hospital Readmission Reduction Program?	1 2 3 4 5 6 7 8 9 10
2. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself regarding the skills required to effectively communicate with patients?	1 2 3 4 5 6 7 8 9 10
3. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself regarding a patient's most vulnerable time for readmission and how to help them succeed during this time?	1 2 3 4 5 6 7 8 9 10
4. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable would you consider yourself in screening your hospitalized patients for potential post discharge complications?	1 2 3 4 5 6 7 8 9 10
5. On a scale of 1 to 10, with 10 being the most knowledgeable, how knowledgeable are you with assessing the patient for their likelihood of successful discharge without readmission?	1 2 3 4 5 6 7 8 9 10
PERCEPTION QUESTIONS	RESPONSE (PLEASE CIRCLE)
6. On a scale of 1 to 10, with 10 being the strongest, how strongly do you feel hospital readmissions are a problem affecting XXXX?	1 2 3 4 5 6 7 8 9 10
7. On a scale of 1 to 10, with 10 being the strongest, how strongly do you feel that nursing and providers at XXXX	1 2 3 4 5 6 7 8 9 10

are already doing everything possible to prevent hospital readmissions?

8. On a scale of 1 to 10, with 10 being the strongest, how strongly do you feel you are capable of impacting readmission rates at XXXX? 1 2 3 4 5 6 7 8 9 10

9. On a scale of 1 to 10, with 10 being the strongest, how strongly do you feel implementation of a readmission reduction program will benefit the patients of XXXX? 1 2 3 4 5 6 7 8 9 10

10. On a scale of 1 to 10, with 10 being the most likely, how likely do you feel a readmission reduction program is to be successful at XXXX? 1 2 3 4 5 6 7 8 9 10

IMPACT QUESTIONS

RESPONSE (PLEASE CIRCLE)

11. How much time do you currently spend per shift with patients on discharge planning? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes 1 2 3 4 5

12. How much time do you spend teaching patients about their medications on each shift? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes 1 2 3 4 5

13. How much time do you spend teaching patients about their diagnosis and prognosis on each shift? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes 1 2 3 4 5

14. How much time has the readmission reduction program added to your work day? 1. <15 minutes 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. >60 minutes 1 2 3 4 5

15. How much time do you spend in the first 72 hours following up with patients after discharge? 1. 0 minutes 2. 5-10 minutes 3. 11-15 minutes 4. 16-20 minutes 5. >20 minutes 1 2 3 4 5

Appendix E

Self-Perceived Knowledge Tables

Table 1. How knowledgeable would you consider yourself regarding hospital readmissions and the Hospital Readmission Reduction Program?
The median value for Pre-Education = 4.00, for Post-Education = 8.00, for 8-Weeks = 8.00, and 12-Weeks = 8.00

	Post-Education	8-Weeks	12-Weeks
Pre-Education	$U = 13.500$	$U = 17.50$	$U = 7.50$
	$z = -3.724$	$z = -3.017$	$z = -2.818$
	$p = .000$	$p = .003$	$p = .005$
	$r = -.73$	$r = -.63$	$r = -.70$

Table 2. How knowledgeable would you consider yourself regarding the skills required to communicate effectively with patients?
The median value for Pre-Education = 8.00, for Post-Education = 9.00, for 8-Weeks = 9.00, and 12-Weeks = 8.00

	Post-Education	8-Weeks	12-Weeks
Pre-Education	$U = 65.000$	$U = 24.50$	$U = 19.00$
	$z = -1.078$	$z = -2.792$	$z = -1.831$
	$p = .281$	$p = .006$	$p = .067$
	$r = .21$	$r = -.58$	$r = -.46$

Table 3. How knowledgeable would you consider yourself regarding a patients most vulnerable time for readmission and how to help them succeed during this time?
The median value for Pre-Education = 6.00, for Post-Education = 8.50, for 8-Weeks = 8.00, and 12-Weeks = 8.00

	Post-Education	8-Weeks	12-Weeks
Pre-Education	$U = 17.50$	$U = 14.50$	$U = 7.00$
	$z = -3.509$	$z = -3.175$	$z = -2.869$
	$p = .000$	$p = .001$	$p = .004$
	$r = -.69$	$r = -.66$	$r = -.72$

Table 4. How knowledgeable would you consider yourself in screening your hospitalized patients for potential post-discharge complications?

The median value for Pre-Education = 7.00, for Post-Education = 8.00, for 8-Weeks = 8.00, and 12-Weeks = 8.00

	Post-Education	8-Weeks	12-Weeks
Pre-Education	$U = 22.00$	$U = 23.00$	$U = 7.50$
	$z = -3.150$	$z = -2.665$	$z = -2.837$
	$p = .002$	$p = .008$	$p = .005$
	$r = -.62$	$r = -.56$	$r = -.71$

Table 5. How knowledgeable are you with assessing a patient for their likelihood of successful discharge without readmission?

The median value for Pre-Education = 7.00, for Post-Education = 8.00, for 8-Weeks = 8.00, and 12-Weeks = 8.00

	Post-Education	8-Weeks	12-Weeks
Pre-Education	$U = 32.00$	$U = 23.50$	$U = 14.50$
	$z = -2.774$	$z = -2.630$	$z = -2.204$
	$p = .006$	$p = .009$	$p = .028$
	$r = -.54$	$r = -.55$	$r = -.55$

Appendix F

Perception of Readmission Reduction Program Tables

Table 6. How strongly do you feel hospital readmissions are a problem affecting XXXX?
The median value for Pre-Education = 8.00, for Post-Education = 7.00, for 8-Weeks = 7.50, and 12-Weeks = 5.50

	Post-Education	8-Weeks	12-Weeks
Pre-Education	$U = 83.50$	$U = 61.00$	$U = 28.50$
	$z = -.052$	$z = -.253$	$z = -.936$
	$p = .958$	$p = .800$	$p = .349$
	$r = -.01$	$r = -.05$	$r = -.234$

Table 7. How strongly do you feel that nursing and providers at XXXX are already doing everything possible to prevent hospital readmissions?
The median value for Pre-Education = 7.00, for Post-Education = 7.00, for 8-Weeks = 7.50, and 12-Weeks = 8.00

	Post-Education	8-Weeks	12-Weeks
Pre-Education	$U = 66.50$	$U = 54.50$	$U = 26.50$
	$z = -.949$	$z = -.669$	$z = -1.146$
	$p = .343$	$p = .503$	$p = .252$
	$r = -.07$	$r = -.14$	$r = -.29$

Table 8. How strongly do you feel that you are capable of impacting readmission rates at XXXX?
The median value for Pre-Education = 7.00, for Post-Education = 9.00, for 8-Weeks = 7.50, and 12-Weeks = 7.00

	Post-Education	8-Weeks	12-Weeks
Pre-Education	$U = 18.50$	$U = 41.00$	$U = 26.00$
	$z = -3.482$	$z = -1.516$	$z = -1.173$
	$p = .000$	$p = .129$	$p = .241$
	$r = -.68$	$r = -.31$	$r = -.29$

Table 9. How strongly do you feel implementation of a readmission reduction program will benefit the patients of XXXX?

The median value for Pre-Education = 8.00, for Post-Education = 9.00, for 8-Weeks = 7.00, and 12-Weeks = 9.00

	Post-Education	8-Weeks	12-Weeks
Pre-Education	$U = 51.00$	$U = 49.50$	$U = 21.50$
	$z = -1.860$	$z = -.992$	$z = -1.586$
	$p = .063$	$p = .321$	$p = .113$
	$r = -.36$	$r = -.21$	$r = -.40$

Table 10. How likely do you feel that a readmission reduction program is to be successful at XXXX?

The median value for Pre-Education = 8.00, for Post-Education = 9.00, for 8-Weeks = 7.50, and 12-Weeks = 8.50

	Post-Education	8-Weeks	12-Weeks
Pre-Education	$U = 47.00$	$U = 61.50$	$U = 26.500$
	$z = -1.989$	$z = -.223$	$z = -1.121$
	$p = .047$	$p = .823$	$p = .262$
	$r = -.39$	$r = -.05$	$r = -.28$

Appendix G

Impact Tables

Survey Phase		<i>m</i>	Frequency	Percent	Weighted Mean
Pre-Education	Less than 15 minutes	7.50	6	46.2	20.46
	16 to 30 minutes	23.00	4	30.8	
	31 to 45 minutes	38.00	2	15.4	
	46 to 60 minutes	53.00	1	7.7	
	Total		13	100.0	
Post-Education	Less than 15 minutes	7.50	8	61.5	14.62
	16 to 30 minutes	23.00	4	30.8	
	46 to 60 minutes	38.00	1	7.7	
	Total		13	100.0	
8-Week Post-Education	16 to 30 minutes	23.00	8	80.0	26.00
	31 to 45 minutes	38.00	2	20.0	
	Total		10	100.0	
12-Week Post-Education	16 to 30 minutes	23.00	5	83.3	25.50
	31 to 45 minutes	38.00	1	16.7	
	Total		6	100.0	

Table 11: How much time do you currently spend per shift with patients on discharge planning?

Survey Phase		<i>m</i>	Frequency	Percent	Weighted Mean
Pre-Education	Less than 15 minutes	7.50	9	69.2	13.42
	16 to 30 minutes	23.00	3	23.1	
	31 to 45 minutes	38.00	1	7.7	
	Total		13	100.0	
Post-Education	Less than 15 minutes	7.50	7	53.8	14.65
	16 to 30 minutes	23.00	6	46.2	
	Total		13	100.0	
8-Week Post-Education	Less than 15 minutes	7.50	4	40.0	18.30
	16 to 30 minutes	23.00	5	50.0	
	31 to 45 minutes	38.00	1	10.0	
	Total		10	100.0	
12-Week Post-Education	Less than 15 minutes	7.50	3	50.0	17.75
	16 to 30 minutes	23.00	2	33.3	
	31 to 45 minutes	38.00	1	16.7	
	Total		6	100.0	

Table 12. How much time do you spend teaching patients about their medications on each shift?

Survey Phase					Weighted Mean
		<i>m</i>	Frequency	Percent	
Pre-Education	Less than 15 minutes	7.50	5	38.5	18.19
	16 to 30 minutes	23.00	7	53.8	
	31 to 45 minutes	38.00	1	7.7	
	Total		13	100.0	
Post-Education	Less than 15 minutes	7.50	9	69.2	13.42
	16 to 30 minutes	23.00	3	23.1	
	31 to 45 minutes	38.00	1	7.7	
	Total		13	100.0	
8-Week Post-Education	Less than 15 minutes	7.50	2	20.0	21.40
	16 to 30 minutes	23.00	7	70.0	
	31 to 45 minutes	38.00	1	10.0	
	Total		10	100.0	
12-Week Post-Education	Less than 15 minutes	7.50	3	50.0	15.25
	16 to 30 minutes	23.00	3	50.0	
	Total		6	100.0	

Table 13: How much time do you spend teaching patients about their diagnosis and prognosis on each shift?

Survey Phase		<i>m</i>	Frequency	Percent	Weighted Mean
Pre-Education	Less than 15 minutes	7.50	5	38.5	21.65
	16 to 30 minutes	23.00	5	38.5	
	31 to 45 minutes	38.00	2	15.4	
	46 to 60 minutes	53.00	1	7.7	
	Total		13	100.0	
Post-Education	Less than 15 minutes	7.50	3	23.1	33.19
	16 to 30 minutes	23.00	5	38.5	
	31 to 45 minutes	38.00	1	7.7	
	46 to 60 minutes	53.00	2	15.4	
	Greater than 60 minutes	75.00	2	15.4	
	Total		13	100.0	
8-Week Post-Education	Less than 15 minutes	7.50	5	50.0	19.75
	16 to 30 minutes	23.00	3	30.0	
	31 to 45 minutes	38.00	1	10.0	
	46 to 60 minutes	53.00	1	10.0	
	Total		10	100.0	
12-Week Post-Education	Less than 15 minutes	7.50	2	33.3	20.33
	16 to 30 minutes	23.00	3	50.0	
	31 to 45 minutes	38.00	1	16.7	
	Total		6	100.0	

Table 14: How much time do you anticipate the readmission reduction program will add to your work day?

I15. How much time do you spend in the first 72 hours following up with					Weighted Mean
Survey Phase		<i>m</i>	Frequency	Percent	
Pre-Education	0 minutes	0.00	11	84.6	1.15
	5 to 10 minutes	7.50	2	15.4	
	Total		13	100.0	
Post-Education	0 minutes	0.00	12	92.3	0.58
	5 to 10 minutes	7.50	1	7.7	
	Total		13	100.0	
8-Week Post-Education	0 minutes	0.00	8	80.0	1.50
	5 to 10 minutes	7.50	2	20.0	
	Total		10	100.0	
12-Week Post-Education	0 minutes	0.00	6	100.0	0.00

Table 15: How much time do you spend in the first 72 hours following up with patient's after discharge?

Appendix H

**Application of The Adult Learning Theory
to a Brief Education Program in a Critical Access Hospital**

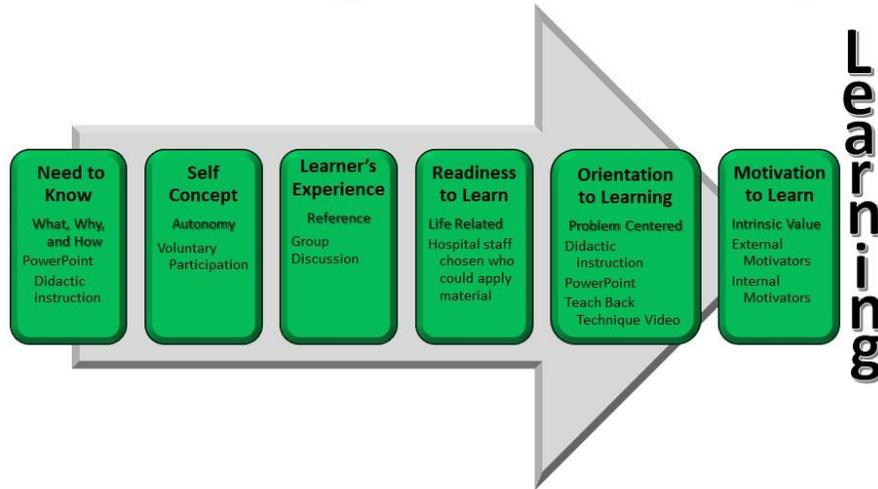


Figure 3: Adapted from The Adult Learning Theory (Knowles et al., 2014).