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Improving Discharge Medication Education on a Sepsis Unit: A Quality Improvement Project

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Abstract

Ineffective discharge education plays a role in increased readmission rates, adverse drug events, and worsened patient outcomes post-hospitalization. When combined, the resulting financial burden on America's healthcare system is exorbitant, as is the physical and mental toll on unsuspecting patients. To close the current gaps in discharge teaching, this project is incorporating the teach-back method and utilizing updated medication handouts.

Starting on the sepsis unit of a large, local medical center – the Clinical Nurse Leader (CNL) interns employed assessment tools to identify areas for improvement. The data revealed rushed, incomprehensive discharge medication education and reflected in low HCAHPS scores in the areas of “Communication about Medications” and “Care Transitions.” Utilizing the Plan, Do, Study, Act tool, more succinct and personalized medication class worksheets were conceived and the unit's discharge education protocol for nurses was updated to include the utilization of teach-back regarding prescribed medication purpose and side effects. Said changes were based on evidence-based practice and relevant literature.

In order to determine the success of the project, HCAHPS scores will be analyzed. Within ten months of implementation, the anticipated HCAHPS scores will be 58.2% (from 36.7%) in “Communication about Medications” and 56.9% (from 39.1%) in “Care Transitions.” Additionally, the potential unit savings is estimated to decrease by \$949 to \$44,190 per patient by improving medication education upon discharge.

Improved discharge medication education is attainable by utilizing enhanced medication education sheets in combination with the teach-back method. The success of this quality improvement project on the given unit can and should be seen as framework to enact similar positive changes to additional units.

Improving Discharge Medication Education on a Sepsis Unit: A Quality Improvement Project

Introduction

According to the Agency for Healthcare Research and Quality, 20% of hospitalized patients experience adverse events upon discharge (AHRQ, 2019). This high number is attributed to several factors which include hospital acquired infections, procedural complications and adverse drug events that occur as a result of ineffective discharge teaching. It is estimated that California spends \$500 million annually in sepsis readmissions that are correlated to ineffective patient education (Chang et., 2015). According to the Centers of Medicare & Medicaid, only 65% of patients believe they receive adequate teaching regarding new medications, which leads to self-management errors upon discharge (Pronchnow et al., 2018). To close the gaps that are currently present in discharge teaching; utilization of specific medication handouts and the teach-back method need to be implemented at the microsystem level. This will not only reduce adverse drug events but will help improve continuity of patient care and will help improve HCAHPS scores. In order for the organization to meet its core values of compassionate and excellent care, effective discharge teaching needs to be implemented.

Problem Description

The sepsis unit at a large medical center has 36 hospital beds and has strict regulations and guidelines that support patients who have acquired infections and are considered septic. The purpose of the unit is to identify the infective agent, support the patient throughout their recovery, and educate the patient on their medications upon discharge. The nurses on the sepsis unit are a vital part of the interdisciplinary team and work alongside infection control physicians, Physical Therapists (PTs), Occupational Therapists (OTs), Respiratory Therapists (RTs), and Social Workers to deliver individualized patient-centered care. The interdisciplinary team

collaborates during change of shift to design a care plan that meets the needs of their patient. Current baseline data on the sepsis unit, indicates that improvement is needed in the areas of “Communication about Medications” and “Care Transitions” (refer to Appendix A). There was a significant drop in the HCAHPS scores in “Communication about Medications” from June to July. The score dropped from 78% in June to 36.70% in July. “Care Transitions” also experienced a significant drop; dropping from 70% in June to 39.10% July. These low scores lead to adverse events caused by medication side effects as a result of ineffective patient teaching. These scores reveal the need to initiate a quality improvement project that will improve communication about medications and care transitions, which will lead to improvements in discharge teaching.

Available Knowledge

There is significant available knowledge in the topic of communication about medications and care transitions. The available data will help identify and address areas that will improve both communication about medications and care transitions in the microsystem. The PICOT question asks patients admitted to a sepsis microsystem (P) what effect does medication communication handouts (I) have on patient discharge (O) compared to standardize discharge teaching (C) over a three-month period of time (T)? Supportive literature was obtained using search engines which included PubMed, ScienceDirect, Google Scholar, and CINHAL. More specifically, the literature was obtained by using keywords which included “teach-back method, care transitions, discharge teaching, communication, medications.” Filters were also used for peer reviewed articles years 2010 and newer. The search yielded 106 journal articles with six articles included in this review. The studies were rated as level IA and level IIA using the John

Hopkins Nursing Evidence-Based Practice tool. Results are summarized in Table 1 of Appendix B.

According to Medicare, only 65% of patients believe they received effective discharge instructions to safely transition to home care (Pronchnow et al., 2018). This number is indicative that continuation of research is needed to help meet the learning needs of patients. The sepsis unit at a large medical center is striving to improve HCAHPS scores on “communication about medications” and “care transitions” by strengthening discharge teaching. Researchers have emphasized the importance of utilizing the teach-back method and medication handouts to improve discharge teaching (Oh, Lee, Yang, & Kim, 2015).

The teach-back method is a resource that has been utilized by nurses for decades to assess the level of understanding patients have about medications and their diagnosis. Despite its continued support, a study that was conducted at a large medical center found that only 25% of nurses utilized the teach-back method (Kingbell & Gibson, 2015). This low number led to ineffective teaching and high readmission rates. To improve patient outcomes, nurses were required to attend classes that taught about the importance of utilizing the teach-back method. This intervention helped improve patient care, patient satisfaction and led to a reduction in readmission rates (Kingbell & Gibson, 2015).

To further support the importance of utilizing the teach-back method, three additional studies were analyzed. A quantitative study was conducted at a large teaching hospital to improve medication teaching. The teach-back method was utilized and served as a tool for nurses to assess and confirm a patient’s understanding on new medications (Pronchnow et al., 2018). The presented study found that 97% of patients were able to recall the purpose of new medications and 66% percent were able to recall adverse side effects. In addition to this,

researchers found that 100% of caregivers were able to recall the purpose of 54 medications and 84% of caregivers were able to recall adverse side effects (Pronchnow et al., 2018).

To further evaluate the effectiveness of the teach-back method a systematic study was analyzed. The systematic study reviewed five research studies that implemented the teach-back method to increase patient engagement and improve discharge education. The systematic study consisted of three quasi-experimental designs and two cohort studies (Geum et al., 2019). Through this study, researchers found that effective discharge education significantly improved patient outcomes and reduced adverse events by 45% in vulnerable populations, which led to a decrease in hospital acquired costs.

A qualitative study was also performed at a large pediatric magnet hospital that utilized the teach-back method to assess the health literacy and competency level of patients and their family members (Klingbeil & Gibson, 2019). Prior to utilizing this tool, 64% of healthcare providers found that patients were not adhering to their medications because gaps were present in transitions of care and discharge teaching. Researchers further determined that low health literacy hindered a patient's ability to understand and adhere to their treatment plan (Klingbeil & Gibson, 2019). However, through the implementation of the teach-back method and medication handouts, patient teaching became effective and led to medication and treatment adherence.

Through evidence-based research, it is evident that effective discharge teaching is required to safely transition patients to home care (Corbett, Setter, Daratha, Neumiller & Wood, 2010). For this to occur, healthcare professionals must communicate and educate their patients on their prescribed medication to reduce adverse events. A study found that 94% of patients had discrepancies on their medication lists which led to adverse side effects (Corbett et al., 2010). However, when discharge teaching utilized supplemental information such as medication

handouts not only were patients able to identify medication errors, but adverse events were prevented.

Rationale

Lewin's Change Theory, which consists of three stages: unfreezing, changing and refreezing was used as the conceptual framework for this quality improvement project. In the unfreezing stage the goal is to improve the current “situation” by removing any constraints that may be impeding growth. The “changing” stage involves changing a current behavior and improving it. The last stage is the “refreezing” stage where new behavior is established.

Using the Lewin’s Change Theory, Clinical Nurse Leader (CNL) interns were able to remove barriers that were leading to ineffective communication about medications and care transitions. To improve communication and care transitions, specific medication handouts were implemented, and the teach-back method was utilized during discharge. The aim is to continue this new practice which will help improve the current HCAHPS scores to match the overall hospital’s HCAHPS scores in these categories.

Specific Aim

The aim of this quality improvement project is to improve discharge medication education for patients and to improve care transitions for Registered Nurses (RN) as reflected by monthly HCAHPS scores. The goal is to improve the current HCAHPS scores of “communication about medication” and “care transitions” to 58.20% and 56.90% respectively.

Microsystem Assessment

Before any changes can be made to a unit, there must first be an assessment done to determine where gaps are within the unit. There are numerous assessment tools available to the CNL but for this unit the 5 P’s Assessment tool and the Root Cause Analysis tool were utilized.

The 5 P's Assessment (Appendix C) provides the CNL an overall "picture" of the unit by analyzing five key components: purpose, patients, professionals, processes, and patterns.

When analyzing the purpose of this unit, it was discovered that their overall mission is to deliver quality patient care through efficient care transitions during discharge proceedings. This sepsis unit aims to improve medication communication to become more effective and efficient during discharge to improve patient outcomes and increase HCAHPS scores. This information was obtained through numerous interviews with nurses and the manager of the unit.

The patients make up the second "P" in the assessment tool. This unit is a 36-bed unit that provides services to patients that range in age from 18 – 80 years old. The common admitting diagnosis for this patient population includes pneumonia, urinary tract infections (UTIs), sepsis, diabetic ketoacidosis, and colitis infections.

The professionals on the unit encompass the third "P" in the assessment tool. Health care professionals include physicians, nurses, patient care technicians, a CNL, resource nurse, and charge nurses. The unit nurses are a mixture of new graduate nurses and more experienced nurses with the resource nurse only working on the day shift, with no resource nurse serving on the night shift.

The unit's processes are the fourth "P" in the assessment tool. This unit has numerous processes in place for handling conditions such as diabetic ketoacidosis and sepsis. They also have a process for discharge planning and teaching. The current discharge medication communication protocol includes one handout with all the common medications and their side effects on one page.

The final "P" in the assessment tool is patterns. During assessment, it was determined that this current medication worksheet is not utilized by the nurses during discharge education.

This lack of education to the patients correlates with the low HCAHPS scores on the unit in communication about medications and care transition which can be seen in Appendix A.

With the information from the 5 P's assessment tool, the CNL can determine there is a potential gap in quality care surrounding medication education at discharge. Moving forward, a Root Cause Analysis (RCA) was conducted (Appendix D). An RCA "is a problem-solving method or process for conducting an investigation into an incident, failure, actual or potential problem or concern" ("When to use root cause analysis," 2014). In this unit's situation, a concern is being analyzed because of low HCAHPS scores surrounding information on medications to patients. The RCA is divided into six categories which are: communication, people, process, environment, equipment, and time. Each category is assessed to identify where the gap is occurring in medication education at time of discharge.

When assessing communication, it was determined that during medication education, side effects are not included in the teaching to the patients. Additionally, nurses take only ten minutes to complete the entire discharge education, which appears to be rushed. Finally, it was assessed that physician-nurse-patient communication is lacking as a patient was informed by a physician that their wound was not infected but the nurse informed the patient at discharge that the wound was, in fact, infected and needed antibiotics. This was an example of breakdown in communication among the staff and patients.

The next category to be analyzed is the people on the unit. It was observed that the nurses on this unit do not have adequate coverage; the unit is out of staff compliance frequently which means that nurses are taking care of more patients than they are legally allowed to do. Additionally, the patients on this unit have a high acuity level as most patients on this unit have multiple comorbidities which can add to the stress of the nurses. Finally, the assessment yielded

that physicians are involved in the discharge proceedings but do not always communicate effectively with the nurses about the patient's condition upon discharge.

The processes on this unit constitute the third category in the RCA. Assessment yielded discharge paperwork and protocol is not standardized, leaving each nurse to choose what education they provide to the patients at discharge. Additionally, discharge paperwork is not accommodating to lower health literacy levels of some patients. Finally, patients are not being asked specifically if they understand the purpose and side effects of their new medications at time of discharge.

The environment makes up the fourth category in the RCA. On this sepsis unit there is continuous construction going on throughout the day which can be distracting due to the noise level. The overall atmosphere of this unit appeared to be relaxed with most of the interactions taking place face-to-face with little follow-up charting. The team also appears to work independently of each other as little teamwork was evident. Overall, the environment did not have a professional appearance.

The equipment on the unit can also play a role in the lack of medication education, so it constitutes the fifth category in the RCA. The computer system does not allow for the nurses to quickly personalize discharge education for their patients. There is also a lack of "Workstation on Wheels" for the nurses to utilize. Finally, assessment yielded at time of discharge, after receiving the education, patients are given a packet with a "ticket" that indicates they can be discharged.

The final category in an RCA is time. During the assessment it was discovered that nurses appear to not have enough time to complete a thorough discharge teaching to their patients due to the high acuity of other patients. Nurses also have to work around the physicians'

schedules which affects their time allotted to provide adequate discharge education. Finally, assessment yielded time of discharge is frequently delayed due to other circumstances which places added pressure for nurses to quickly discharge patients.

The 5 P's Assessment and the RCA both provided valuable information on an area in need of improvement on this sepsis unit. With this information, the CNL can then create an intervention with the purpose of improving quality care for the patient population.

Intervention

To effectively make quality improvements to the unit, an intervention has to be created. In this instance, an improvement is needed for discharge medication education to improve patient outcomes. A plan was developed to improve upon the current medication education worksheet (Appendix E) on the unit, to improve its functionality and readability to patients. This quality improvement project utilizes the Plan, Do, Study, Act tool of implementation which is shown in Appendix F. In the "Plan" phase, a new individual medication class worksheet was created (Appendix G). These individualized medication worksheets will only provide the patient with the information they need. The patient will no longer receive information on medications they are not prescribed.

The target audience was then identified as the patients on this unit who will be receiving the information as well as the nurses who will be providing the education to the patients at discharge. Moving forward, the nurses will need to be introduced to and taught this new medication worksheet so learning objectives for the nurses and patients were identified. The first learning objective is that nurses will demonstrate the use of the new medication sheets in their discharge teaching with patients. The second objective will have nurses specifically ask each patient if they "clearly understand the purpose for taking each of their medications." The final

objective is that patients will verbalize understanding of the new medication, its purpose and side effects using the teach-back method.

Completing this intervention will take time. Continuing with the planning phase from September – December 2019, the CNL and core team of nurses on the unit will work on developing the standard protocol on the New Medication Education Worksheets, with monthly meetings to continue development and nurse education on the new procedure. Additionally, resources will be assessed to determine the unit's capability for supporting these new individualized medication sheets. Resources needed will include paper and printer accessibility. Moving into the first cycle of "Do" beginning in January 2020 through November 2020 the New Medication Education Worksheets will be introduced onto the unit. The CNL and core team will continue to reinforce the use of the nurse-patient teach-back method to assist patients in understanding their new medications while utilizing these new medication sheets. At the beginning of each month, the CNL and core team will analyze the monthly HCAHPS scores for communication about medications and care transition. In June 2020, the "study" phase will commence with an evaluation of the current HCAHPS scores for communication about medications and care transition measures. With the information gathered from the HCAHPS scores, the CNL and core team will determine if any new changes need to be made to the current intervention strategy. If changes are needed then they will be implemented in the second cycle of the "Do" phase. In the second cycle of "Do" phase, the nurses will continue to educate patients on their medications utilizing the new medication sheets and the teach-back method. In November 2020, the second "study" phase will be completed when the 2020 yearly HCAHPS scores information will be available. This will lead to the CNL and core team making any additional changes to the project to continue to improve the HCAHPS measures of

communication about medications and care transition. The complete timeline for this project can be found in Appendix H.

Study of Intervention

This quality improvement project was designed to improve patient outcomes during a critical point in hospitalization, the transition home. During this transition, the risk for medication errors is increased due to a number of factors such as chronic comorbid conditions, a complex medication regimen, and the changes in medication that occurred during hospitalization (Corbett, Setter, Daratha, Neumiller, & Wood, 2010). The study conducted by Corbett et. Al determined that the “most common system-level contributing factors identified in this study were incomplete or inaccurate discharge instructions, conflicting information from different sources, and duplication of medications” (2010). This study illustrates the importance of nurses giving patients thorough medication instructions during their discharge teaching. Without ensuring the patients know their new medications, there is a high incidence of medication errors and readmission rates. As part of discharge education, nurses should be providing the patient and their families “ a medication list/table, that includes the name, purpose, dose, and frequency of each medication and teach the patient and family about these medications, how they should be administered, and common side effects to report to care providers” (Corbett et. Al, 2010).

With this study at the forefront of the quality improvement project, the sepsis unit will be implementing the new medication education worksheets that personalizes the medication information for each patient, ensuring each patient does not receive unnecessary medication information. The nurse will also take the time during discharge education to ensure the patient and their family understands the purpose and side effects to report about each medication as well as the dose, route, and frequency that each medication should be taken.

Measures

During any quality improvement project, the CNL must determine a method to measure the progress of the project. This can be done in a variety of ways, but for the purposes of this quality improvement project, the CNL will focus on the Hospital Consumer Assessment of Healthcare Providers and Systems, better known as the HCAHPS. This assessment is a “patient satisfaction survey required by the Centers for Medicare and Medicaid Services (CMS) for all hospitals in the United States” (“Why are HCAHPS scores important,” n.d.). The HCAHPS scores ask patients for their feedback and analyze numerous areas within the hospital such as, communication with doctors and nurses, pain management, discharge information, and communication about medications (“Why are HCAHPS scores important,” n.d.). These scores are utilized by the hospitals to determine how the patients perceive their quality of care during their hospitalization.

For the quality improvement project on discharge education about medications, the CNL will be focusing on two categories within the HCAHPS survey. The first measure within the HCAHPS survey that this project will focus on is communication about medications. This measure allows the patient to provide feedback on how the nurses and physicians communicated with them about their medications, both during their hospital stay and at the time of discharge. With this quality improvement project aiming to improve the medication discharge education, this category can provide vital information about any improvements. The current HCAHPS score for communication about medications is 36.70% on the sepsis microsystem. The overall goal for the quality improvement project is to increase that HCAHPS score to at least 58.20% by the beginning of November 2020 to align with the overall hospital’s HCAHPS score in that category.

The second measure within the HCAHPS survey that this quality improvement project is focused on improving is care transitions. This measure asks patients questions regarding their discharge education experience, specifically if they received proper medication education on their new medications. The current HCAHPS score for care transition on this unit is 39.10%, but the overall improvement goal by the beginning of November 2020 is 56.90% to align with the hospital's overall score of 56.90% in this measure.

The HCAHPS score for both communication about medications and care transitions will provide the CNL with the information needed to determine if the new medication education worksheets are an effective method for teaching patients about their medications during discharge.

Ethical Considerations

When implementing a quality improvement project on any unit, the whole system needs to be considered which includes any ethical considerations that need to be addressed. In this quality improvement project, there are two key ethical principles that need to be considered: beneficence and autonomy.

Beneficence is defined as “an act of charity, mercy and kindness with a strong connotation of doing good to others including moral obligation” (Kinsinger, 2010). Essentially, the nurse has an ethical obligation to do good towards and for the patients. By improving upon the current medication discharge education, making it more individualized to each unique patient, the nurse will be providing an act of kindness and doing good for the patient. The nurse will be providing a service that looks towards the patients' future with the hope of no readmittance for the same condition.

The second ethical principle that should be considered in this quality improvement project is autonomy. Under the current medication discharge education, the nurses do not teach the patients about their medications' purpose or major side effects. The nurses just tell the patients what time of day to take each medication. This interferes with a patient's autonomy which means "that the patients are able to make independent decisions" (Rosenberg, 2019). If the patients are not receiving adequate information surrounding their medications, how can the patients make independent, informed decisions? Under the quality improvement project, the new medication education worksheets will provide the patients with the medication's purpose, its common side effects, and its major side effects that would need to be reported to a physician. The nurse will teach the patient about their medication and the patient will utilize the teach-back method to ensure they understand fully what the medication is. This improved method will allow patients to make better informed decisions regarding if they want to actually take the medication which gives the patients their autonomy.

Results

In order to assess the efficacy of this quality improvement project, specific outcome measures need to be considered. HCAHPS scores, created to help clinicians understand patient experience of care, were chosen as the quality improvement tool to track and measure the effectiveness of the medication education worksheets during a patient's discharge process ("Measurement-powered quality improvement," 2017). More specifically, the focus will be on two categories from the HCAHPS survey: "communication about medications" and "care transitions." The data found from the surveys used in the HCAHPS will be analyzed to help the CNL and core team better understand the patient's discharge experience.

Implementation of the medication discharge worksheets will be initiated in January 2020 as the CNL and core team is finalizing the implementation on the new procedure and further project improvements. Nonetheless, it is expected that after implementation of the worksheets, the 2020 yearly HCAHPS scores will show improvements in the two focus areas of “communication about medications” and “care transitions.” More specifically, HCAHPS scores are expected to improve from 36.70% to at least 58.20% in “Communication about Medications” and improve from 39.10% to 56.90% in “Care Transitions” by the end of the implementation period in November 2020.

Cost-Benefit Analysis

Implementing a medication education worksheet to the unit is both a practical and cost-effective method to improve HCAHPS scores and overall patient outcomes. Minimal resources such as paper and access to a printer will be needed, both of which are readily available on the unit. It is estimated that the program initiation and implementation will cost roughly \$170/year for paper and colored printer ink used for the worksheets on the sepsis unit. One box with ten reams of paper containing 5000 pages costs an average of \$20. In addition, the medication education worksheets necessitate the use of colored ink for better visual understanding. The average costs of colored ink needed per year equals to \$150. Nurse education on this new discharge protocol will occur during the pre-shift huddle, in order to minimize costs for additional work hours or training time.

A cost benefit analysis revealed immense savings due to the decreased number of hospital readmissions or adverse events related to medication nonadherence secondary to poor medication education. By utilizing medication education worksheets to improve communication between nurses and patients, a reduction of medication nonadherence can occur by 80%

(Pittman, 2018). A 2017 study found that the economic cost of medication non-adherence due to poor medication teaching ranged from \$949 to \$44,190 per person, placing a huge financial burden on healthcare systems (Cutler et al., 2017). By comparing the minimal cost of implementation to the potential costs that could be saved every subsequent year, it is apparent that the benefits far exceed the costs.

Summary

The premise of this quality improvement project was to find a way to improve patient outcomes positively and discover any gaps that were affecting the patient population negatively. Upon assessment and analysis of the medical-surgical/sepsis unit at this community hospital, the core team of nurses saw that the topic of care transitions and communication about medications was in a deficit, with HCAHPS scores showing that information regarding medication discharge for patients was lacking. The key findings of this HCAHPS score review showed that specifically, patients were both not understanding the purpose of their medications nor what the possible side effects were. From the evidence-based practice research and microsystem assessments performed, it was discovered that the best way to address this patient education issue was to create a teaching tool that reinforced the education provided to patients at discharge. The New Medication Worksheets that were created represent different medication classes and are colorful, appropriately worded, and succinct.

There were lessons learned throughout this quality improvement process, with the most important being that nurses are already significantly burdened with documentation protocols and paperwork to disclose with patients. For that reason, these New Medication Worksheets are expected to be beneficial in ensuring that patients are receiving the information they need without the nurse spending significantly longer amounts of time with them and falling further

behind on necessary work. Additionally, it is important to note that patient education cannot and should not be undervalued, and that discharge proceedings can cause patient anxiety, so having a tangible and physical informational handout is invaluable to them, especially if simplified and presented in an understandable manner.

What contributed most to the successful change was the willingness of the nurses on the unit to learn the importance of the New Medication Worksheet and to use these handouts as a tool to aid them in their discharge process, rather than seeing it as another responsibility. Additionally, the idea of providing in-services to the nurses about the New Medication Worksheets were supported by nurse leaders and showed that this unit was open to the idea of improving upon existing processes and gaps in their current care practices during discharge. Lastly, the cohesiveness and leadership exemplified by all members of the core team of nurses as well as the CNL instructor and Hospital Nurse Liaison contributed to the lateral integration of care and planned success for the project at hand.

Conclusion

The work and timeline created for this quality improvement project is a realistic and feasible goal to attain in this microsystem for several reasons. Firstly, it is considerably cost-effective and simple to reproduce. Secondly, the medication sheets can be utilized and personalized to any unit within any hospital, and past evidence-based research has shown that easily read literature and pictures regarding patient education at discharge are effective in both enhancing patient medication education and subsequently affecting HCAHPS scores. Given that there were numerous New Medication Worksheets created for each class of the most commonly used medications on this sepsis unit, the potential for spread of these sheets would not be difficult to implement, as there have been similar attempts to do the same with past medication

information handouts hospital-wide. These New Medication Worksheets coupled with the teach-back method are expected to yield a positive increase in results (via the HCAHPS scores) in the following months and years with this quality improvement project at hand, if implemented as part of regular discharge protocol.

The implications for practice of this quality improvement project are promising, as there may be different acute-care patient education topics that could benefit from a similar project. An example of another patient education topic that could use a similar approach is that of medications taken while patients are still hospitalized. To remind patients that there are side effects for their in-patient medications, there could be handouts or stickers placed on their belongings or nearby so they can keep these side effects in mind. For example, if a patient is taking newly prescribed hypertension medication as an in-patient and does not yet know their body's reaction to the medication, a colorful handout or sticker can be placed on their water jug or bedside table to remind them to stand carefully and to remain close to support devices or to simply use their call light for help. Consequently, the patient may feel better informed about the purpose and side effects of their medication and this measure could simultaneously help to decrease falls on the unit as well.

Ultimately, the results and support shown from the project implementation thus far are exciting and applicable to any healthcare setting. The affordability and sustainability of this project are significant, and it should be noted that with the recommended in-service for the nurses on the unit, push-back should be minimal, as this handout is expected to save time during discharge proceedings. As a patient-centric quality improvement project, the implementation of New Medication Worksheets coupled with the teach-back method to improve patient education

about discharge medications and side effects will prove to be a positive improvement for all involved.

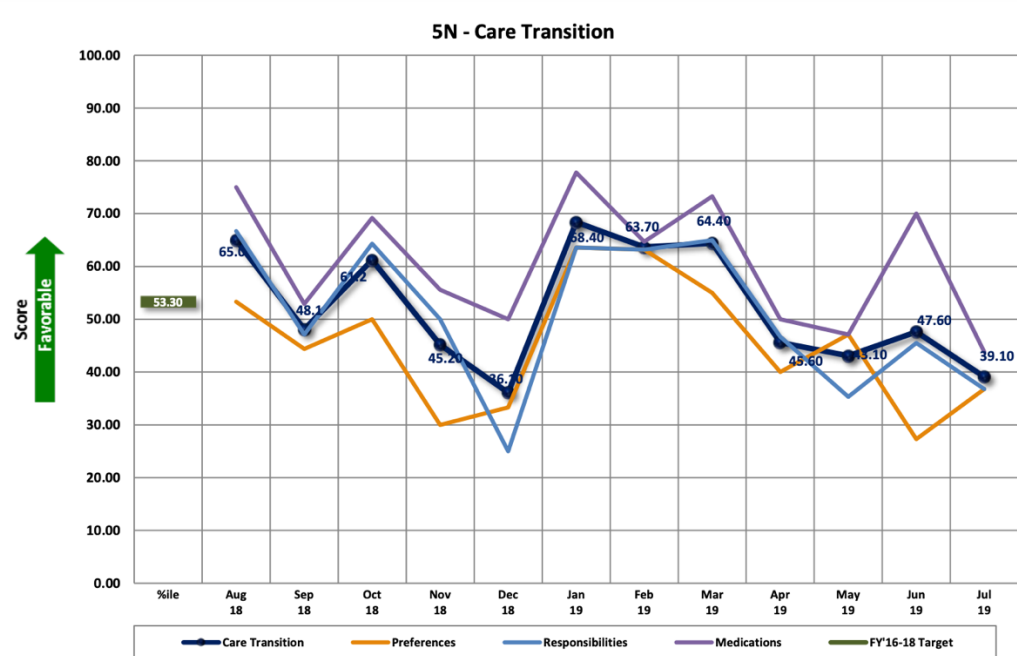
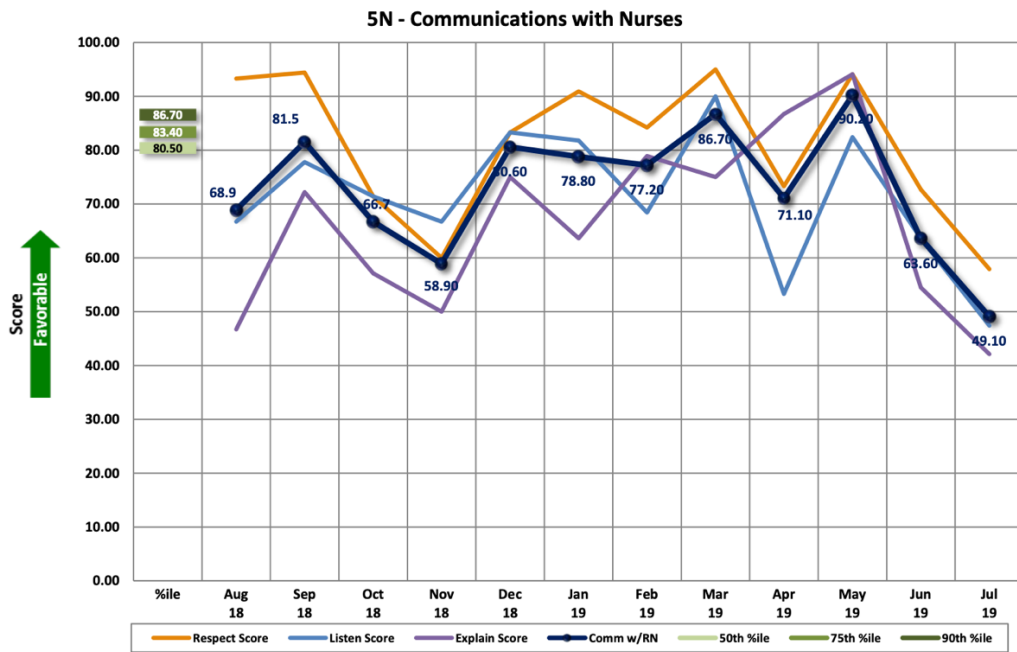
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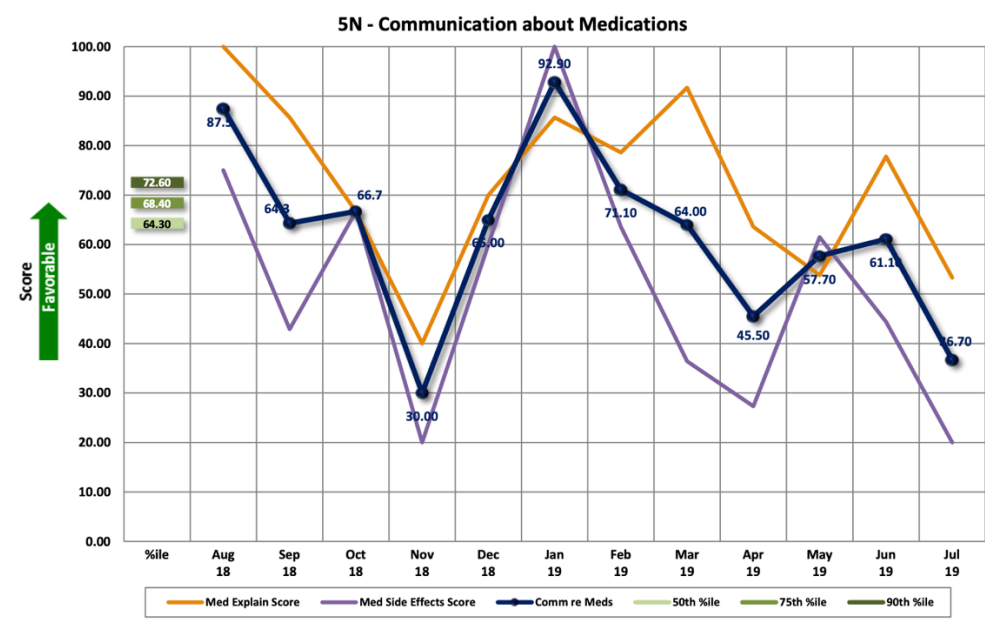
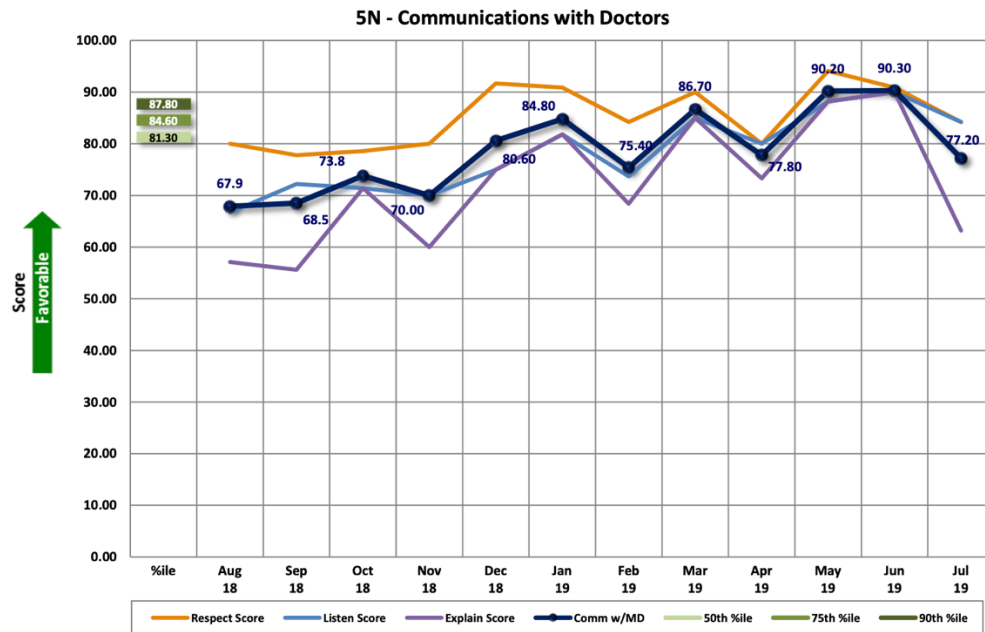
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Appendix

Appendix A: HCAHPS Scores





Appendix B: Literature Synthesis Table

Literature Synthesis Table 1							
Study Author(s)	Study Objective	Study Design	Sample & Setting	Results	Conclusion	Implications for Practice	Level of Evidence
Chang, DW, Tseng CH, Shapiro MF	Rehospitalizations following sepsis: common and costly	Qualitative study	Two hundred adult patients, sepsis unit	Results revealed that 17.7% of sepsis patients are readmitted to the sepsis unit within 30 days of discharge. The yearly readmission rates result in a \$500 million-dollar healthcare expenditure.	This study sought to identify the gaps that led to high readmissions rates and preventable healthcare expenditure. To reduce healthcare costs and the rates of readmission further analysis of discharge teaching needs to be evaluated.	Although, only 17% of septic patients are readmitted within 30 days of discharge; healthcare professional must evaluate the patient's knowledge on their diagnosis, and their medications.	Level IIA
Oh EG, Lee HJ, Yang YI, Kim YM	Effectiveness of Discharge Education with the Teach-Back Method on 30-Day Readmissions	Systematic Review	5 studies reviewed No date restriction Only in English Library databases: PubMed, CINAHL Keywords: teach-back method, 30-day readmissions	Results revealed that the teach-back method improved patients' outcomes by encouraging patients to actively participate in their care during their hospitalization which included discharge teaching.	In the systematic review that was conducted there was a 45% reduction in 30-day readmissions which not only reduced healthcare expenditure but improved patients' 32 outcomes.	With this data, it is evident that the teach-back method needs to be implemented during discharge instructions to improve patient teaching, communication about medications and continuity of care.	Level I

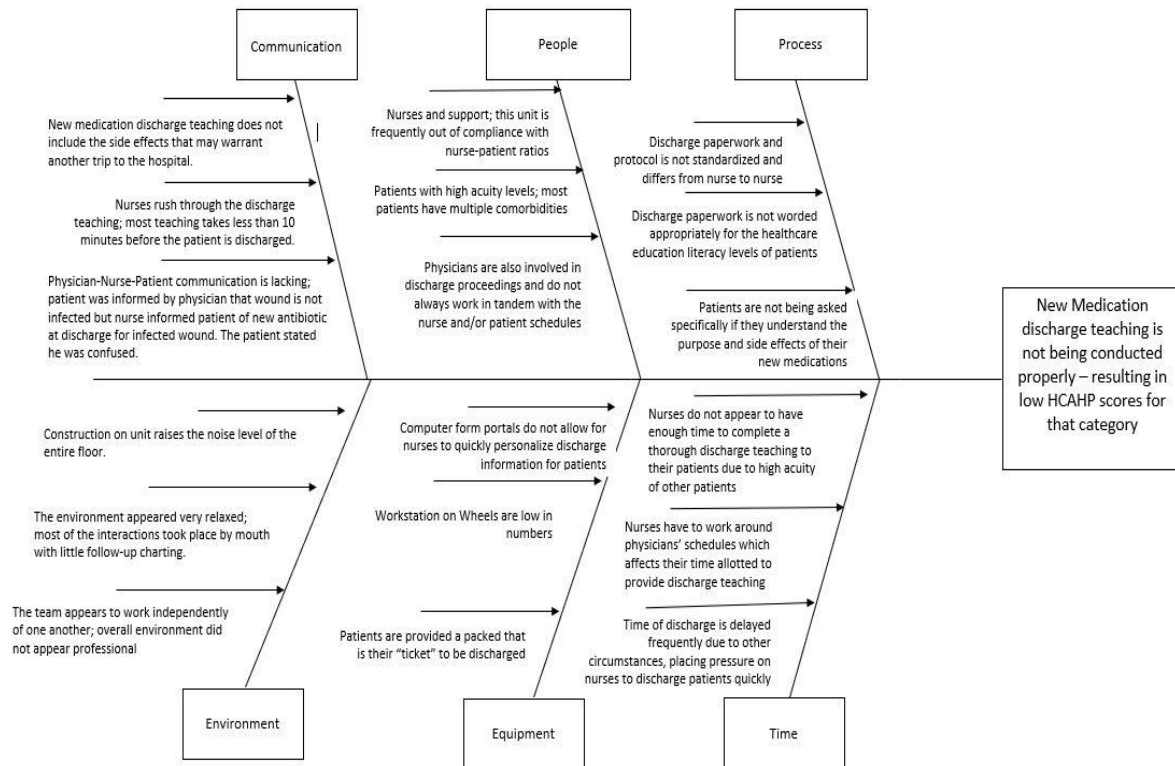
Kingbell C, Gibson C	The Teach Back Project	Qualitative study	Over 300 multidisciplinary team members attended a 60- minute workshop on the teach-back method. Nurses and non-nurses demonstrated teach-back method while other nurses avoid the teach-back method.	A survey was conducted at the end of the seminar. Results indicated that nurses and other healthcare professionals believed they acquired the knowledge they were taught when the teach- back method was utilized.	When utilizing the teach-back method nurses and healthcare professionals were able to recognize that were present and were able to correct patients and their family members which led to improved patient outcomes.	Utilization of the teach-back is imperative in the healthcare setting. This method not only allows healthcare professionals to identify gaps that are present during patient teaching but allows the entire interdisciplinary team to modify the care plan of a patient if needed.	Level II
Jenny Prochnow, Sonja Meiers, Martha Scheckel	Improving Patient and Caregiver New Medication Education Using an Innovative teach-back tool	Qualitative Study	The Ottawa Model of Research Use was used to implement the project. The model was used to identify the effectiveness of discharge teaching using the teach- back method. 3 med-surg unit at a 490 -bed hospitals participated. Trained nurses (76%) believed that the teach- back method not only improved teaching but led to increased patient satisfaction and improved patient outcomes.	Caregivers and patients were asked to recall the information that was provided to them after receiving teaching using this tool- 66% of side effects were recalled by patients and their families and 97% were able to recall the purpose of their medications	While the teach- back method is not a new tool; nurses and healthcare providers do not utilize this method which leads to ineffective discharge teaching.	Care of patients should be continuously evolving to deliver patients with the best care. Discharge teaching (communication about medication is an area that continues to experience poor HCAHP scores. However, old tools (such as the teach-back method can improve HCHAP scores and patient outcomes)	Level II

Susan Ahrens, Ashley Wirges	Using Evidence to Improve Satisfaction with Medication Side-Effects Education on a Neuro-Medical Surgical Unit	Qualitative Study	Implementation of the “Always Ask” program on a neurosurgical unit, HCAHP surveys were administered to patients -3 months prior to implementation and 3 months post implementation of the program	163 patients responded to the HCAHP surveys. 61 patients from the post interventional group responded to the survey and 77% knew side effects and were able to understand the purpose of their medication.	Results indicate that the use of “Always Ask” lead to effective teaching and improve patient satisfaction as well improve HCAHP scores.	The use of effective communication between healthcare professionals leads to improvement in patient which leads to patient satisfaction and improves hospital HCAHP scores	Level II
Cynthia Corbett, Stephen Setter, Kenn Daratha, Josua Neumiller, Lindy Wood	Nurse Identified Hospital to Home Medication Discrepancies: Implications for Improving Transitional Care	Quantitative study	Identifying medication discrepancies in discharged patients; transition of care from the hospital to home has led to high 30-day readmission rate	The study aimed to reduced hospital readmission rates by improving transitional care (hospital to home) to reduce the current readmission rates, nurses participated and went to the patients’ homes to ensure medication discrepancies were not occurring. 94% of nurses noted at least one medication discrepancy	The presented study emphasized the importance of improving care transition to reduce medication discrepancies, reduce hospital readmission, prevent adverse events and improve patient outcomes. It is evident that patient outcomes and HCAHP scores are improved when there is effective communication and continuity of patient care.	To improve care transitions HCAHP scores it is important to improve communication amongst the interdisciplinary team to ensure that patient safety, reduce adverse events and improve continuity of patient care.	Level II








Appendix C: 5 P's Assessment

Purpose	-To deliver quality patient care through efficient care transitions during discharge proceedings. Improving medication communication to become more effective and efficient during discharge will improve patient outcomes, increase HCAHP scores, and allow the facility to reinforce their professional practice model.
Patients	<ul style="list-style-type: none"> - 36 beds on the unit - Age: young adults to older adults - Common admitting diagnoses include pneumonia, urinary tract infections, sepsis, diabetic ketoacidosis, colitis infections. - Health literacy is low to moderate for most patients, despite formal education levels.
Professionals	-Physicians, nurses both new graduates and veteran nurses, patient care technicians, charge nurse, unit Clinical Nurse Leader, resource nurse (day shift only).
Processes	<ul style="list-style-type: none"> -Discharge teaching/planning -Care transition -Current discharge medication communication protocol and current information handout on medication and their side effects
Patterns	<ul style="list-style-type: none"> -Lack of uniformity on discharge medication communication and utilization of existing handouts. -Consistently low unit scores for medication side effects on HCAHP survey (36.70% for July 2019).

Appendix D: Root Cause Analysis



Appendix E: Current Medication Education Worksheet

Medicamento: genérico (marca)	Medicamento utilizado para:	Posibles efectos secundarios:
Ejemplos (anticoagulantes): <input type="checkbox"/> Warfarina (Coumadin) <input type="checkbox"/> Enoxaparina (Lovenox) <input type="checkbox"/> Dalteparina (Fragmin) <input type="checkbox"/> Heparina <input type="checkbox"/> Apixabán (Eliquis) <input type="checkbox"/> Dabigatrán (Pradaxa) _____ <input type="checkbox"/> Aspirina (Ecotrin, Bayer) y clopidogrel (Plavix)	Prevenir o tratar coágulos sanguíneos 	RIESGO DE SANGRADO Hematomas Dolor abdominal (warfarina) Fiebre (enoxaparina) Náuseas (enoxaparina)
Ejemplos (medicamentos para el corazón): <input type="checkbox"/> Digoxina (Lanoxin) <input type="checkbox"/> Amiodarona (Cordarone, Pacerone) <input type="checkbox"/> Nitroglicerina <input type="checkbox"/> Imdur	Arritmia cardíaca; Insuficiencia cardíaca 	PUEDE CAUSAR MAREOS O SOMNOLENCIA PUEDE CAUSAR DOLOR DE CABEZA
Ejemplos (bloqueadores de los canales de calcio): <input type="checkbox"/> Diltiazem (Cardizem, Tiazac, Dilacor XR) <input type="checkbox"/> Verapamilo (Calan, Verelan) <input type="checkbox"/> Amlodipino <input type="checkbox"/> _____	Disminuir la presión arterial y la frecuencia cardíaca 	PUEDE CAUSAR MAREOS O SOMNOLENCIA PUEDE CAUSAR DOLOR DE CABEZA Estreñimiento (verapamilo)
Ejemplos (bloqueadores beta): <input type="checkbox"/> Atenolol (Tenormin) <input type="checkbox"/> Carvedilol (Coreg) <input type="checkbox"/> Metoprolol (Toprol XL, Lopressor) <input type="checkbox"/> _____	Insuficiencia cardíaca; disminuir la presión arterial y la frecuencia cardíaca 	PUEDE CAUSAR MAREOS O SOMNOLENCIA Fatiga
Ejemplos (inhibidores de la enzima convertidora de angiotensina [angiotensin-converting-enzyme, ACE] o bloqueadores de los receptores de la angiotensina [angiotensin receptor blockers, ARB]): <input type="checkbox"/> Lisinopril (Zestril, Prinivil) <input type="checkbox"/> Valsartán (Diovan) <input type="checkbox"/> _____ <input type="checkbox"/> _____	Disminuir la presión arterial; insuficiencia cardíaca 	PUEDE CAUSAR MAREOS O SOMNOLENCIA Tos seca Dolor de cabeza
Ejemplos (antiinflamatorios): <input type="checkbox"/> Ibuprofeno (Advil, Motrin) <input type="checkbox"/> Ketorolac (Toradol) <input type="checkbox"/> Dexametasona (Decadron) <input type="checkbox"/> Prednisona (Deltasone) <input type="checkbox"/> _____	Reducir la inflamación 	PUEDE CAUSAR MOLESTIAS GASTROINTESTINALES Aumento del apetito (prednisona, dexametasona) Riesgo de sangrado (ibuprofeno, ketorolac)
Ejemplos (antibióticos): <input type="checkbox"/> Amoxicilina (Amoxil) <input type="checkbox"/> Cefazolina (Ancef, Kefzol) <input type="checkbox"/> Clindamicina <input type="checkbox"/> Levofloxacina <input type="checkbox"/> Piperacilina/Tazobactam (Zosyn) <input type="checkbox"/> Vancomicina (Vancocin) <input type="checkbox"/> _____	Tratar infecciones bacterianas 	PUEDE CAUSAR MOLESTIAS GASTROINTESTINALES Erupción Picazón Diarrea Dolor de cabeza

NO FORMA PARTE DEL REGISTRO MÉDICO PERMANENTE

Appendix F: PDSA Model



Appendix G: New Medication Education Worksheet

New Medication Education Guide

Type of Medication: Anti-Infectives

<p>Purpose These medications destroy or slow down the growth of bacteria.</p> <p>Side Effects</p> <p>Common</p> <ul style="list-style-type: none"> • Nausea, Vomiting, Diarrhea, Upset Stomach <p>Serious</p> <ul style="list-style-type: none"> • bloody stools, fever, confusion, dizziness, lethargy 	<p><u>Medications</u></p> <ul style="list-style-type: none"> • Zosyn (piperacillin/tazobactam) • Garamycin (gentamicin) • Keflex/Panixine (cephalexin) • Claforan (cefotaxime) • Maxipime (cefepime) • Levaquin (levofloxacin) • Ancef (cefazolin) • Cipro (ciprofloxacin) • Vancocin (vancomycin) • Rocephin (ceftriaxone) • Zithromax (azithromycin) • Merrem (meropenem) • Invanz (ertapenem) • Ampicillin • Amoxil/Trimox (amoxicillin) • Penicillin • Flagyl (metronidazole) <p>Other:</p>
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Appendix H: Timeline

