Spring 3-16-2024

Actions to Improve In-Patient Communication on Medication Teaching

Tracy Wei
University of St. Augustine for Health Sciences

DOI: https://doi.org/10.46409/sr.PLOE2684

ACTIONS TO IMPROVE IN-PATIENT COMMUNICATION ON MEDICATION TEACHING

Tracy Y Wei, RN, MSN, FNP

School of Nursing, University of St. Augustine for Health Sciences

This Manuscript Partially Fulfills the Requirement for the Doctor

of Nursing Practice Program and is Approved by:

David Liguori, DNP, NP-C, ACHPN

Eleanor Eberhard, DNP, MBA, RN

March 16, 2024

University of St. Augustine for Health Sciences
DNP Scholarly Project
Signature Form

Student Last Name:	First Name:	Middle Initial:
Wei	Tracy	Y

E-mail:
t.wei@usa.edu

Title of DNP Project:

Actions To Improve In-patient Communication On Medication Teaching

My signature confirms I have reviewed and approved this final written DNP Scholarly Project.
DocuSign electronic signature or wet signature required.

Type Name in Blue Box Below	Signature	Date
DNP Project Primary Faculty: David Liguori, DNP, NP-C, ACHPN	DocuSigned by: David Liguori G30BBBAA52EE483...	3/21/2024
DNP Project Preceptor: Elenor Eberhard, DNP, MBA, RN	Elenor Eberhard	3/21/2024
DNP Project Preceptor:		

Abstract

Practice Problem: Medication education is a national and global patient safety challenge. Healthcare organizations often lack consistent and effective medication teaching policies. Studies have found that the teach-back method is an effective interactive communication practice of medication teaching to achieve optimal patient outcomes.

PICOT: In direct care nursing staff (P), How does an evidence-based medication teaching bundle (I) compared to the current medication teaching practice(C) affect staff adherence to the dissemination of medication teaching to hospitalized patients (O) in 12 weeks (T)?

Evidence: A review and appraisal of 12 research studies demonstrated that the teach-back method was clinically and statistically significant in improving medication safety and patient outcomes. This supports the evidence-based Doctor of Nursing Practice (DNP) project for nursing staff trained on the teach-back method to integrate teach-back into medication teaching practice for hospitalized patients.

Intervention: Nurse participants (n=8) were given an identical survey three times, once before and twice at six and ten weeks after training on the teach-back method, to evaluate the impact of the teach-back training on medication teaching. Using a validated teach-back evaluation tool, the nurse leader observed the participants' teach-back proficiency.

Outcome: No statistical significance was found in the perceived importance of and confidence in using the teach-back method between any two-time points; the perceived importance of and confidence in using the teach-back method increased from week one to week ten. The use of teach-back for medication communication increased after the teach-back training.

Conclusion: Education on the teach-back method effectively promotes nurses' confidence in and use of the teach-back method for medication teaching. Standardizing medication teaching using this method is recommended.

ACTIONS TO IMPROVE IN-PATIENT COMMUNICATION ON MEDICATION TEACHING

One of the vital responsibilities of nurses is to educate patients on medication for the safety and quality of care and optimal patient outcomes. Nonetheless, the scarcity of resources (nursing shortage, organization financial strain) and competing nursing priorities from the ever-growing demands on nurses in the current healthcare environment impede nurses from adequately performing this crucial duty. This gap in patient care is a common occurrence in many healthcare organizations, large or small. It can pose a tremendous threat to healthcare organizations, nurses, and, most importantly, patient safety, just as the publication of *To Err is Human* by the Institute of Medicine more than 20 years ago (Toussaint & Segel, 2022).

Communication on medication safety for quality of care remains challenging in healthcare organizations. However, communication on medication safety is crucial in the era of value-based care in which patient satisfaction, safety, and patient-centered care are metrics being tracked and reported by healthcare entities, including the Centers for Medicare and Medicaid Services (CMS). In a mid-size, high-performing acute care hospital in Northern California, the patient surveys identified a low score in communication with patients about medicines as a significant concern (CMS, n.d.). The leadership and management teams recognized that improving this area could greatly enhance safe medication practice, quality of care, and patient experience, mitigate medication-related liability, and maximize the organization’s leverage in marketing and contracting opportunities. Hence, this healthcare organization wants to improve the in-patient nursing process in medication communication and teaching. This paper presents a system-based Doctor of Nursing Practice (DNP) project in which an inpatient care process that included the evidence-based bundle of handoff bedside reporting and printed medication information with a

medication teach-back method was implemented in the 26-bed medical-surgical-orthopedic (MSO) unit.

Significance of the Practice Problem

Medication safety is to prevent medication errors and to achieve the best clinical outcome. It is a national and global concern. Unsafe medication practice is a costly yet preventable harm to patients and the healthcare systems. According to the World Health Organization (WHO, 2017), medication-related injuries are estimated at USD 42 billion globally every year. In United States in-patient settings, medication-related injury or fetal incidents amount to 770,000 per year and cost between $1.5 to $5.6 billion annually (WHO, 2017). This is merely the estimate for the direct cost of patient injury or death, not including long-term disabilities, loss of wages, additional health care costs, compromised quality of life, malpractice, or litigation costs (Slight et al., 2018). Unsafe medication practices can occur at any stage during the medication management process, and the risk heightens when a weak system is employed. A weak system may be structural, such as a noisy or distractive environment, or flaws in the process, like automatically dispensing medication without double-checking for accuracy, lack of communication between healthcare providers and patients, or absence of a culture of safety (Rodziewicz & Hipskind, 2020). Ultimately, the impact of unsafe medication practices can impact all major stakeholders.

Patient

Patients are the beneficiaries of quality healthcare, and clinical outcomes are typically applied to measure patient safety and the healthcare quality that patients receive. Conversely, unsafe medication practices directly jeopardize patients' safety and lead to unwanted outcomes, including morbidity, mortality, medication non-adherence, and distrust in healthcare providers (Harkanen et al., 2019). Hospitalized patients are at risk of unsafe medication practices for various reasons. For example, the

medical condition the patient is in, age, physical and mental capacity, health literacy, unfamiliar environments, frequent change in shift of healthcare providers, and lack of standardized communication on medication education are common areas that can fall short and lead to unsafe medication practices. Hence, patients should be encouraged and empowered to participate actively in their medication use. Literature has shown that effective communication on medication can significantly improve patients' ownership of their health management, increase patient satisfaction, enhance patient health literacy, and decrease re-admission (Yen & Leasure, 2019).

Healthcare Providers and Nurses

Preventing medication errors by adopting safe medication practices has been one of the main targets for healthcare organizations to improve the quality of patient care (MacDowell et al., 2021). Nurses have the ethical, legal, and professional responsibility to ensure safe patient medication management. Unsafe medication practices, including communication deficiency on medication teaching, relying on personal experience or intuition rather than scientific knowledge of medication use, and rushing through medication preparation and administration, can have severe adverse reactions or even fatalities in patients. Furthermore, it is common for nurses who fail to provide medication safely to be criminally charged (Patient Safety by Healthcare Excellence Canada, 2017; Cellini, 2022). Therefore, nurses cannot overlook their legal and ethical responsibilities to patients and the nursing profession in safe medication practice. Nurses must proactively communicate with patients/ families and educate them on medication use for the safety and quality of patient care.

Healthcare Organization

Patient safety and quality of care are missions that all healthcare organizations strive for and are often clearly stated in any healthcare organization's mission statement. A safe medication practice process can offer numerous benefits to the healthcare organization. For example, in the study by Yen

and Leasure (2019), effective communication with patients on safe medication use decreases hospital readmission, which has been challenging for many hospitals operating in a strict reimbursement era. Moreover, effective, standardized, evidence-based medication teaching positively engages patients in their health decision-making, which translates to heightened patient satisfaction. Positive patient satisfaction boosts the organization's reputation in the community and on Medicare ranking, as well as the likelihood of being the preferred hospital provider for the residents of the local community and from afar. Furthermore, it can help the healthcare organization become more attractive to potential healthcare partners and employees. In addition, such a higher patient safety and satisfaction ranking is advantageous for the hospital's marketing and financing endeavor. On the contrary, unsafe practice on patient medication practice can profoundly impact the organization's legal risk and financial viability in terms of fines, loss of reimbursement, cost of lawsuits, and loss of accreditation as a healthcare provider (Slight et al., 2018; Hussein et al., 2021). Therefore, healthcare organizations must ensure an effective system for safe medication practice is present and consistently utilized.

PICOT Question

Literature has shown that medication errors resulting from unsafe medication process systems are costly but preventable (MacDowell et al., 2021; Toussaint & Segel, 2022). By utilizing evidence-based practices of effective communication, patient education through standardized workflow can mitigate medication-related harms and improve patient knowledge and medication adherence (MacDowell et al., 2021). There is ample support from the literature that the *Teach-Back* method effectively communicates between provider and patient on safe medication use (Prochnow et al., 2018; Scott et al., 2019; Yen & Leasure, 2019). Moreover, bedside handoff reporting and the use of printed medication handouts with the teach-back method create a win-win situation for safe medication practice (Callaway et al., 2018). Hence, the PICOT question for this paper is: In direct care nursing

staff (P), how does an evidence-based medication teaching bundle (I) compared to the current medication teaching practice (C) affect staff adherence to the dissemination of medication teaching to hospitalized patients (O) in 12 weeks (T)?

Population

All registered nurses working at the 26-bed MSO unit who provide direct patient care and have at least two years of acute care experience were invited to participate in this voluntary project.

Intervention

There is abundant support in the literature that the teach-back method is an effective practice for teaching safe medication use to patients**.** The teach-back method has been shown to increase patients' health literacy, prevent medication errors, empower patients' participation in healthcare decision-making, decrease hospital readmission, and increase healthcare quality **(**Scott et al., 2019; Yen & Leasure, 2019). The intervention involved implementing a medication teaching process using the teach-back method and the facility's medication education pamphlet. The teach-back method was reinforced and double-checked during the handoff of bedside reporting, which was meant to provide accurate communication between providers who manage patients' medication use during inpatient stays (Callaway et al., 2018). Therefore, the process was sequential, starting at the patient's admission and after medication reconciliation by the admitting physician; new medications related to the admitting diagnosis were identified and indicated in the patient's electronic medical record. These identified new medications were the focus of medication education using the teach-back method. The nurse administering the first dose of the new medication, after verifying the five rights (right patient, right drug, right dose, right time, and right route), was expected to use the evidence-based teach-back method and the standard medication pamphlets to begin teaching on the medication. Later, at the

bedside handoff reporting, the taught medication was double-checked for the patient's comprehension and retention, then documented in the patient's medical records.

Comparison

At the time of project implementation, there was no standardized medication teaching practice in the facility. However, all newly admitted patients would receive generic preprinted medication pamphlets available on the bedside table for patients to read independently. Nevertheless, there was no monitoring of whether patients read it or not. Some nurses claimed that they would highlight medication side effects for patients, but even this task was not consistently performed. Bedside handoff shift reporting is suggested as safe patient care and effective communication between patients and healthcare providers who care for the patient (Landro, 2015). Despite bedside handoff reporting being part of the unit's patient reporting procedure, it was not regularly implemented even during the day, and evening shifts changed when the patients were awake.

Outcome

The project's process measures were trifold: random monitoring of the nurse's use of the medication pamphlets during medication teaching, reviewing patients' charts for documentation on the use of the teach-back method for patient medication teaching, and patient interviews during leadership rounding and nursing surveys regarding consistently implementing evidence-based interventions. The outcome measure was the quarterly Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) report on patient satisfaction on the CMS website.

Time

The average stay for hospitalized patients in this facility is less than five days. Therefore, the allowable 12 weeks for project conduction was sufficient time to gather data to determine whether the evidence-based interventions would add value to the medication-teaching process at this facility.

Evidence-Based Practice Framework and Change Theory

For this evidence-based practice (EBP) project, the fourth edition of the Johns Hopkins evidence-based model (JHEBP) was chosen to guide the project process. The JHEBP consists of three major domains: practice question, evidence, and translation (PET) process. The PET is a goal-oriented problem-solving guide that provides a frame of reference for the development of the project and the precise steps within each domain to guide the execution of the project (The Institute for Johns Hopkins Nursing, 2021). The seven steps in the practice question and project planning portion are useful in determining if the EBP question warrants the need for the project to progress. For example, the PICOT question of this project was formulated after consulting, meeting, and soliciting with the interprofessional team to identify the existence of the clinical problem and the stakeholders' interest in resolving the problem. The five steps in the evidence process guide the project manager in locating, appraising, and synthesizing the available evidence to make a recommendation for the project. The final translation domain contains eight steps for implementing the project and disseminating the findings.

Lewin's Change Theory was employed for this EBP project. Lewin's change theory involves three stages: unfreezing, change, and refreezing (McFarlan et al., 2019). Lewin theorized that behavior is a dynamic balance between the driving and restraining forces. Therefore, the equilibrium between the two forces must be disrupted to facilitate a behavior change (McFarlan et al., 2019). Thus, during the unfreeze stage, the project manager identified the resistance and built the driving force by clearly communicating the project's advantages and the desired destination to move the project toward the change stage. For instance, many nurses in this practice setting expressed that, among other competing priorities, such as receiving new admission and carrying pre-operative orders, the time-consuming medication teaching was not one of their priorities. To unfreeze this resistance of the nursing staff, the

project manager educated nurses on the risks of unsafe medication practice, debunked the misconception that teaching medication was time-consuming, and presented how the intervention could benefit patients, nurses, and the organization. The unfreeze activities for this project included individual or small group sessions where nurses could freely express any concerns for clarification or contribute to implementing the intervention. *Change* is the second stage in Lewin's Change Theory. During the change stage, the recommended change for this project was implementing the teach-back method for medication teaching. Continuous feedback from the participants and empowering and mentoring those involved in the change were vital during the change stage and the success of the project implementation. Finally, in the re-freeze step of Lewin's Change Theory, the newly adopted practice change was evaluated, solidified, and celebrated (Radtke, 2013). The strength of Lewin's Change Theory is in its emphasis on the staff's ownership of the planned change and the refreeze stage, which ensures the sustainability of the new practice.

Evidence Search Strategy

Translating evidence-based knowledge to clinical practice begins with a well-defined PICOT question and appropriate literature search strategy. A precise and answerable PICOT query facilitates relevant literature search results (Ho et al., 2016). The search strategy for this project was developed after a consultation session with a research librarian. The search strategy was a three-step process. The first was to decide on the databases to be utilized. The databases chosen for the project were ProQuest, CINHAL Complete, PubMed, and the Search of the University of St. Augustine for Health Sciences (Search USA). Amongst the suggested search sites, ProQuest and Search USA were recommended by the librarian after consideration of the PICOT question for the project. ProQuest is an aggregate, user-friendly database and a reliable source of evidence-based literature for nursing and allied health professionals. However, Search USA contains a collection of literature and research articles from

different databases. Next in the process was to determine the keywords from the components of the PICOT; using PICOT components would yield more precise results. The main concepts of the PICOT were the *teach-back method* and *medication teaching*. However, the conduction of a literature search is a repetitive process involving continually refining the keywords due to different search terms that could be used in other databases (Aromataris & Riitano, 2014). Thus, to capture the most relevant literature, the keywords used for the literature search were *evidence-based*, *best practice teach-back method*, *show me*, *patient education*, *medication teaching*, and *discharge instruction* in different combinations. No Boolean operators or MeSH were utilized for this purpose, and all five levels of evidence-based practice were included in the search strategy. The last step of this process was to employ subject filters in the search to exclude irrelevant studies. The subject filters chosen were limited to articles within the previous five years, English language, conducted in the United States, nursing as population, full text, academic journals, and peer-reviewed articles. This search strategy was successful in producing multiple articles to be appraised.

Evidence Search Results

The four databases used for the literature search were ProQuest, PubMed, CINAHL, and Search USA. The key terms used for the literature research were *teach-back method, medication teaching, patient education,* and *discharge instruction.* In addition, filters were applied to retrieve the most recent and relevant articles. Therefore, the search was limited to English articles published within the last five years, studies conducted in the United States, peer-reviewed or academic journals, and full texts. Using these search criteria, 65 articles were identified in the four databases. Most articles found were in ProQuest and Search USA, with twenty-seven and twenty-six articles, respectively, and another nine from PubMed and three from CINAHL. With the 65 identified articles, the process of screening and eliminating began. Thirteen of the 65 articles were duplicated and, therefore, removed from the list.

Another twenty-seven articles were excluded based on the abstract reflecting that the teach-back method was for use other than patient education. For example, several articles used the teach-back method for training nursing or pharmacy students; others used the teach-back method as the outcome measure and not as an intervention. After the full-text screening of the remainder of the twenty-five articles, thirteen were again excluded because the articles were international studies, some were conducted in community clinics or maternity settings, and some were incongruent with the PICOT elements. After the screening, twelve articles were identified as relevant to the PICOT statement, thus eligible and included in the literature appraisal.

The JHEBP model for nursing and healthcare professionals consists of Appendix A through J, a tool providing guidelines for developing EBP projects (Dang et al., 2022). Appendix D provides the model for the hierarchy of evidence guides, Appendix E for the research evidence appraisal tool, and Appendix F for the non-research evidence appraisal tools used to determine the evidence level and quality of the included articles. Among the 12 articles, eight were non-research quality improvement projects based on research evidence and clinical practice guidelines; therefore, they were inducted into Level IV according to the hierarchy of the evidence guide. They varied in quality A (high), B (good), or C (low), depending on the answers to the guiding questions. Three articles were Level II for their quasi-experimental nature, and the answers to the tools' questions determined the quality of the evidence. There was one study in a randomized control trial that was categorized as Level I evidence. The quality of evidence presented in this Level I study was rated B (good), for many of the answers to the questions were favorable but insufficient to meet the A (high) quality. The appraisal of the articles and the determination of the level and quality of evidence are illustrated in Appendix A and Appendix B.

Themes with Practice Recommendations

The 12 articles included were in different levels of evidence hierarchy and quality ratings based on the JHEBP Model Tools for Nursing and Healthcare Professionals. However, they were all threaded together by the evidence-based intervention of the teach-back method. The teach-back techniques used in the studies vary in model and duration. While five of the studies used the teach-back method created by the Agency for Healthcare Research and Quality (AHRQ, 2017; Callaway et al., 2018; Eloi, 2020; Marks et al., 2022; Nickles et al., 2020; Prochnow et al., 2018; Scott et al., 2019) adapted the teach-back method based on the version of the Institute for Healthcare Improvement (IHI), the rest of the studies either used other online teach-back platforms or created their own educational material. The duration of the teach-back education program also varies from twenty minutes of training to hours of the educational program. Despite the differences in the model used or training duration, all 12 studies reached similar conclusions thematically.

A total of seven common and favorable themes arose from the twelve articles. They were patient-nurse communication, the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) score, hospital re-admission, self-care and self-management, patient experience, medication safety, and patient outcomes listed on the synthesis matrix table (see Table 1). Among the seven common themes, self-care and self-management, medication safety, and patient outcomes were the most cited thematical results from implementing the teach-back technique. The following section discusses these three most common themes, concerns about time constraints, and recommendations**.**

Self-Care and Self-Management

This theme appeared in 11 of the 12 studies, and the evidence demonstrated that using the teach-back method positively impacted patients' understanding and knowledge of their medication and health management. Part of the teach-back method was to have the patient verbally explained the information the healthcare provider taught to the patient. This teach-back activity facilitated knowledge retention, verified that information was accurately conveyed, and encouraged the patient to be proactive in self-care engagement. Patients were generally eager to take charge of their care and desired information to better care for themselves (Callaway et al., 2018). In the study by Marks et al. (2022), the authors also found that 68.2% and 61.7% of their patient participants wanted to learn about medication side effects and medication names, respectively, to better medication management; the teach-back method satisfied the patient's needs and promoted health literacy in patients (Eloi, 2021). A less-mentioned but positive gain from the teach-back method was increased nursing confidence and knowledge in using the technique (Eloi, 2021; Scott et al., 2019). Moreover, patient engagement in self-care was crucial in reducing preventable complications and optimizing patient outcomes (Callaway et al., 2018).

Medication Safety

Applying the teach-back technique could lead to safe medication practice, a theme seen in seven of the 12 articles. Patients desired medication information, but it was unclear if the pertinent information was conveyed fully to the patients' comprehension (Marks et al., 2022). Research pointed out that patients understood and retained less than half of what their care providers explained to them due to ineffective communication (Prochnow et al., 2018); this communication gap may result in unsafe medication practices, including non-adherence, inability to administer correct dosing or fail to recognize medication side effects (Eloi, 2020; Pajaro et al., 2022). Conversely, teach-back techniques for medication education aid in clarifying misunderstandings about the medication regimen, enhancing

information retention, promoting health literacy, and encouraging self-management in safe medication practice and minimizing re-admission and preventable complications (Li et al., 2020; Marks et al., 2022; Scott et al., 2019).

Patient Outcomes

Teach-back is an evidence-based communication modality utilized to improve patient outcomes. Positive patient outcomes in different dimensions were explicitly described in seven of the included articles. The literature strongly associated the teach-back method with positive self-care behavior, which reduced the length of hospital stay, re-admission, and better health outcomes (Antrum et al., 2021; Scott et al., 2019). Implementing the teach-back method attributed to medication knowledge and adherence thus increased patients' satisfaction with healthcare education and encounters. In Yen and Leasure (2019), the authors cited that the teach-back method significantly improved health outcomes in patients with chronic conditions like heart failure or coronary artery disease and avoided re-admission at twelve months after teach-back implementation compared to the non-teach-back group (teach-back group 59%, non-teach-back group 44%; p value= 0.005). Based on the evidence presented, all the articles included support the idea that a teach-back method was a valuable tool for medication communication, which enhances patient-nurse encounters, health literacy, and self-management in patients and drives better patient outcomes.

Time Constraint

The teach-back method is an educational modality supported by nurses and healthcare professionals and is recommended to be included in new staff orientation, mandatory in-service, and annual evaluations (Antrum et al., 2021; Eloi, 2021; Marks et al., 2022; Prochnow et al., 2018). Despite this overwhelming advocacy for its implementation, the execution is challenging. Many nurses are concerned about the time constraints (Eloi, 2020; Klingbell & Gibson, 2018; Komondor & Choudhury, 2021; Pajaro et al., 2022), particularly in the current ever-increasing demands on the

nursing staff already short in supply. It is questionable if nurses would adhere to the teach-back practice if the time constraint remains a force of resistance to change. In the study by Komondor and Choudhury (2021), the authors suggest that if the teach-back method is performed correctly, it would only take one to two minutes longer per session compared to no teach-back used. Nevertheless, all the other articles display different sentiments.

Recommendation

The presented evidence helps in answering some of the critical elements of the PICOT question. The articles demonstrate that acute care nurses (population) support the values and the utilization of teach-back methods for medication teaching (intervention); however, the adherence to using it for medication communication (outcome) rests on the resolution of time issues. With this consideration, the project design was user-friendly (for nurses and hospitalized patients), time-efficient, and feasibly adopted into daily nursing care. Therefore, the project adopted the least time-consuming teach-back training method since no evidence exists that the training length impacts the outcomes. Secondly, medication communication emphasizes using only the information pertinent to the patient. The verbal education was formatted in a structured script that included the name, purpose, and three to five most common side effects of the new medications. Pre-printed standard medication sheets were included in the intervention to facilitate learning and provide visual aids to patients. The teaching session was recommended to be done in a *chunk and check* fashion during new medication administration, hourly patient rounds, or bedside shift reporting (Komondor & Choudhury, 2021). Integrating evidence-based knowledge into clinical practice took considerable time, effort, and possibly several processes. However, identifying the gaps in the evidence and closing the gap with carefully thought-out recommendations guided the project in the desired direction.

Setting, Stakeholders, and Systems Change

Integrating evidence-based teach-back method for medication communication into routine nursing care requires organizational system change and staff behavioral changes. According to Donabedian's structure-process-outcome model, the three components work synergistically to yield quality care (Nash et al., 2019). Therefore, it is essential to analyze the organizational structure, including the setting, stakeholders, and internal and external factors, to identify indicators that may aid or hinder the success of the evidence-based project. Hence, the project setting, stakeholders, strength-weakness-opportunity-threat (SWOT) analysis, and systems change are presented in this section.

This mid-size acute care hospital in Northern California, Silicon Valley, where the DNP scholarly project was implemented, belongs to one of the country's most extensive not-for-profit healthcare systems. Although the hospital is licensed for 300 beds, its daily census is under 100. There is team camaraderie between staff and staff to management. The staff, visitors, and patients are mainly Caucasians, which is less diverse than other hospitals in the neighborhood cities. The hospital is well known for its culture of safety, staff engagement, and application of evidence-based practices. The organization is tuned in to all the performance metrics to identify areas for improvement. It received a high rating from CMS (2023).

The Medical-Surgical-Orthopedic floor, where the evidence-based DNP project implementation was recommended, is a 26-room private unit with an average daily census of 22 patients. Due to the one-to-five nurse-patient ratio, each shift is staffed with five nurses and one *break nurse* who works from eleven to seven in the evening, mainly to cover the morning and evening shift nurses while on lunch or dinner breaks. All nurses in this unit are full-time staff with more than two years of

experience in direct nursing care. They pride themselves on being the hospital's most cohesive and camaraderie team, helping each other when tight staffing or heavy in tasks.

Stakeholders could be influential in the success of the project implementation. Therefore, starting at the project's planning stage, identifying and collaborating with stakeholders, particularly those with high interests in and influence on the project's success, is crucial (Kogon et al., 2015). For this EBP project, different levels of stakeholders were identified. Internally, the key stakeholders who were identified to have a high interest in the project and were committed to the project implementation included the vice president, who also served as the chief nurse officer (CNO) and chief operating officer (COO), the unit manager, and the unit charge nurse because the project aligned with the organization goals in improving the CMS medication communication domain. The hospital health educator and the lead pharmacist were also interested in the project to improve patient experience and outcomes. The frontline nurses, the end-users of the teach-back method, had high interests and influence. However, they were ambivalent about the project implementation because they were not certain if the established nursing routine would become turbulent from the project implementation. The hospital informatics, discharge planner, patients, and project beneficiaries were all low in interest and influence on the project implementation. Externally, CMS was highly interested in the hospital's performance but did not directly impact the project implementation. In contrast, the local community had little interest in and influence on the project.

While all the internal stakeholders recognized the project was a high-value, low-cost intervention, the nurses were cautious with watchful eyes, which could have challenged the project's sustainability. Sustainability could be roughly defined as the state where a change became the norm and could be continually built upon (Lawson et al.,2018). To ensure the sustainability of the project, it was vital to empower and engage all the relevant stakeholders with timely feedback and support, listen

to concerns and address them attentively, establish process measures (i.e., patient interviews during leadership rounds) and outcome measures (i.e., observable of the new practice), and allow time for the change to solidify and becomes the new norm (the re-freeze stage of Lewin's Change Theory).

SWOT analysis is a self-assessment tool that allows the project management team (project leader and relevant stakeholders) to identify the organization's internal strengths and weaknesses as well as external opportunities and threats for strategic project planning (Nelson & Staggers, 2018). By knowing the internal strengths and weaknesses, the team can leverage the strengths toward the team's goals and exercise better control of the weaknesses to facilitate the project outcomes. Likewise, by identifying external opportunities and threats, the team can seize the opportunity presented and develop a contingency plan to mitigate threats that can hinder the project outcome. Appendix C is the completed SWOT analysis for this evidence-based performance improvement project.

While aiming at the meso-level system change, the teach-back medication communication project has impacted the micro and macro-level health systems. The health delivery system is structured into sub-systems: micro-level, where the point of care between patients and providers takes place; meso-level, which occurs at the local organizational level; and macro-level, which applies to the government or legislative status of the system (Murphy, 2021). The DNP project aims to translate the evidence-based teach-back method to a system-wide medication teaching practice (organization meso-level). The success of the project implementation would yield standardized medication teaching/ communication between the patient and provider (point of care micro-level) and an improvement in the scoring of the CMS medication communication domain (government macro-level).

Implementation Plan with Timeline and Budget

The literature synthesis and organizational-specific recommendations demonstrated that the evidence-based teach-back method is a high-value, low-cost, low-risk intervention. It was an

intervention that was feasible, adaptable, and congruent with this healthcare facility's goal of improving medication communication between nurses and patients. However, knowing evidence-based knowledge can enhance the quality of care is not enough; knowledge must be translated into clinical practice for it to be meaningful. Therefore, the Johns Hopkins PET framework (The Institute for Johns Hopkins Nursing, 2021) used to guide this DNP project was transitioned to the translation phases in which the evidence-based knowledge was applied to the clinical setting for practice change, leading to the excellence of care.

Translation of evidence, or project implementation, is the essence of the entire DNP project. Many factors must be addressed to execute the project successfully. These include clearly defined project objectives, progress tracking metrics, role accountability, collaboration and communication among the team and relevant stakeholders, implementation timeline, funding, budgetary considerations, and proper application of change theory (Wong & Sullivan, 2016). This section is designed to present these implementation strategies.

Objectives

A successful EBP project begins with well-defined, shared objectives, which motivate relevant stakeholders and provide a clear destination image of the desired practice changes (Melnyk & Fineout-Overholt, 2019). Project objectives can be used to track the progress of the project. For this DNP project, four goals were established to gauge the implementation's structure, process, and outcomes. The strategies to achieve and the metrics to measure these objectives are included for discussion.

Goal Supporting Implementation

The intervention component of the PICOT is the teach-back method for use in medication communication. Thus, participants must be well-equipped for teach-back before applying it correctly and comfortably. Therefore, the objective was for all the participants to understand and be able to describe the five steps (share-ask-listen-share again- ask again) of the teach-back process by week four

of the project implementation. During week four, all participants should have completed the learning material and be ready to implement teach-back on patient medication teaching. This objective would be met by learning the ten-minute PowerPoint teach-back slides created by AHRQ (2017) and the Teach-Back organization's (teach-back.org, 2018) fifteen-minute interactive online learning module. A teach-back simulator session would be performed during the weekly team huddle to evaluate participants' understanding of the teach-back process.

Goal Supporting Evaluation

Once the participants were trained and armed with the new knowledge of the teach-back technique, the goal was to apply it until they became proficient. The goal supporting the evaluation of this process was to have at least 63% of the participants using the teach-back on all patients with new medication by week six of the project implementation. Sixty-three percent was chosen as the acceptable target goal used at this healthcare facility. Moreover, week six would be the week when the second survey results would be compiled to show the usage of teach-back. A collaborative effort from the project team and relevant stakeholders would be crucial to meeting this goal. The engaging presence of the unit champion nurse, the weekly meetings, supportive and informal coaching sessions for participants, transparency in communication and team collaboration, and support from leadership would facilitate the process's taking root and solidification.

Goal Support Outcome

Two outcome goals were essential for the success of this DNP project. The PICOT outcome aimed to standardize the teach-back as the method for medication communication between nurses and patients. Hence, the objective supporting this outcome would be that by the end of the project implementation, all participants would actively demonstrate the use of teach-back for medication communication with all patients. The benefits of teach-back on patients, the support from the project team, and leadership could help with this goal attainment. The goal measurement could be seen by

comparing the first to the third survey, reflecting the participants' conviction of using teach-back. Another tool that could be used for this measurement would be the Teach-back Observation Tool (see Appendix H), available through the AHRQ website for public use, and no permission needed. (http://higherlogicdownload.s3.amazonaws.com/HEALTHLITERACYSOLUTIONS/b33097fb-8e0f-4f8cb23c-543f80c39ff3/UploadedImages/docs/Teach_Back_-_Observation_Tool.pdf)

The second outcome objective was organization-specific, which was to improve the HCAHPS score on communication about medication. According to the CMS (2023), the facility was at the 39th percentile from July 2022 to May 2023. The project goal was to improve the score by at least ten percent at the subsequent HCAHPS reporting. Although the HCAHPS score is released quarterly, the CNO/COO indicated that the score posting is usually late and may not be available at project completion.

Evidence-Based Practice Project Guided by Lewin's Change Theory

Lewin's unfreeze-change-refreeze change theory was the framework that guided the EBP project. To motivate change or create learning anxiety for change, unfreezing or disrupting the status quo must be present (McFarlan et al., 2019). Evidence has shown that a lack of effective medication communication not only adversely impacts patients' health outcomes and an organization's financial viability but could also bring on loss of employment or legal liability for nurses (Cellini, 2022; Hussein et al., 2021; Slight et al., 2018). When delivered to the participants at the early stage of the project and before the training implementation, these medication risks could spark and intensify the driving force overcoming the restraining force for change.

Time constraints have been identified as the main barrier influencing the implementation of the EBP project. Therefore, during the change stage of the change theory, the concern of the time element had to be effectively addressed to allow a conducive environment for the desired change to occur.

Considering the time issue, the teach-back training material chosen for the project was only 25 minutes long and could be viewed conveniently online anytime.

The last stage of Lewin's change, regarded as the most crucial, is called re-freeze, in which a new practice is recently adopted. It is easy to revert to the old way of practice if measures to support and sustain the recent change are absent (Radtke, 2013). Therefore, the project implementation, at this point, continues to support collaboration among stakeholders to invest in communication and individual or group coaching, celebrating the change as the new norm in practice beyond the project timeframe.

Implementation Plan Details

The project implementation team consisted of the DNP student as the team lead, the facility nurse educator, one nurse champion, the unit manager and the charge nurse, and the CNO/COO representing administrative leadership. Aside from the CNO/COO, who would provide administrative support and attend the weekly update meetings, would have no direct role in the project assignment; all other team members would be accountable for the assigned roles. Detailed action items in chronological order with timelines and role assignments are presented in the teach-back project implementation plan (see Appendix E). Nonetheless, there are several action items or milestones worth mentioning for clarity.

Consent and Surveys

This EBP project was for practice change to improve the delivery of medication communication. Nurse participation was voluntary; therefore, no consent was needed. The self-assessment survey was provided in questionnaire format to all participants during the project implementation at different times. The content of the surveys was identical, and data was collected at week one before the educational sessions, then at week six (two weeks after the implementation of the teach-back use for

medication communication), and the last one at week ten (six weeks since the teach-back method used). The timing of surveys was twofold: to track the project's progress and trends in practice change in participants and to allow time for feedback if any process refinement was needed. A sample of the teach-back survey is presented in the Appendix section (see Appendix D).

Online Teach-Back Training and Medication Pamphlet

The unit where the project was implemented was on an eight-hour, three-shift system. Considering the time element expressed anecdotally by the nursing staff and to capture the most participation in the project, the educational portion of the project was in an online format from two credible healthcare websites. The ten minutes educational teach-back module by AHRQ (2017) is available publicly at https://www.ahrq.gov/sites/default/files/wysiwyg/professionals/quality-patient-safety/patient-familyengagement/pfeprimarycare/static_teach-back_module.pdf. The 15 minute-interactive module provided by teach-back.org (2018) is also available for public use at http://teachback.org/. Moreover, the collaborative effort between the facility pharmacy and nursing education department created the pre-printed standard common medications handout (see Appendix H). Permission from the facility was granted to include this medication sheet for the implementation of the project.

Costs and Budgetary Plan

The practicum facility has regularly offered preceptorship to nurses and other allied healthcare disciplines. With the tightening healthcare spending, there was no budget allocated for preceptorship. Staff overtime for non-organizationally designed improvement projects was not allowed. However, some costs must always be accounted for regardless of how small-scale the project would be. For this EBP project, a sponsorship donation of $1,500 was allocated and secured from the employer of the DNP student. The project's costs were kept within budget, with

the most spending on appreciation for the direct care nurse participants for their private time donations. The teach-back project budgetary plan with items needed, costs (tangible items), and sources is presented in this paper (see Appendix F).

Evaluation Plan

EBP project evaluation is an integral part of the process as it reflects whether the intervention is successful and whether the desired practice change has occurred (The Institute for Johns Hopkins Nursing, 2021). Evaluation is the process used to review current baseline practice data and compare it to the changes after project implementation. Therefore, having a rigorous evaluation plan is crucial to ensure the congruence of the processes. For this EBP project, the evaluation plan aimed at participant recruitment (population unit nurses), data collection method, and data analysis on using teach-back for medication communication (outcome).

Participant Recruitment, Inclusion, Exclusion, and Comparison

The unit of analysis for this EBP project was population (nurses). The project focused on nursing practice change and did not involve patients or protected health information; therefore, concern for the Health Insurance Portability and Accountability Act (HIPAA) did not apply. Initially, planned nurse recruitment methods were a formal invitation through the facility's internal electronic mail system to all the forty-five nurses who work in the unit and a recruitment notice posted on the unit's communication board inside the nurses' lounge. However, these recruitment methods were unsuccessful in soliciting volunteers. Hence, the CNO and clinical educator recommended conducting unit rounding for face-to-face recruitment, which was not time efficient but more effective in reaching out to participants interested in the project. The inclusion criteria were nurses with at least two years of direct care experience and working on any shift (day, evening, break, or night) in the medical-surgical-orthopedic unit of the facility. Nurses who were nurse navigators/coordinators without direct

medication teaching roles were excluded. Due to the infeasibility of visiting the unit during night shift hours, nurse recruitment targeted day and evening shift staff. There were no comparison groups among participants. Instead, the same group of participants were evaluated for the pre-post comparison using the teach-back technique for medication communication. Using the same group of participants for pre-post comparison prevented bias due to differences between participants of each group (Sylvia & Terhaar, 2018).

Data Collection, Data Analysis, and Result Significance

Data from the participants were collected and analyzed to evaluate how the teach-back intervention impacted the practice change for improvement. The process and outcome data measure tools were the self-reported questionnaire named the teach-back survey (see Appendix D). The teach-back survey was adapted and modified from the AHRQ teach-back survey tool (2022), containing nominal (dichotomous) and ordinal variables. The AHRQ website permitted the public use of the tool. The revised survey version has been face-validated by five registered nurses, each with more than five years of patient care experience. The survey was hand-delivered to and collected from all the participants personally by the project lead; only the initials of each nurse were needed for de-identification. Moreover, the project lead maintained the survey data in a private, securely locked file cabinet designated for the project, and the project lead was solely accountable for compiling the data for analysis. Only the completed questionnaires were counted in the data analysis. Baseline data was collected in week one before the teach-back training. Then, participants were given two weeks to complete the online teach-back modules. In weeks six and ten, the second and third surveys were retaken to track and compare the use of teach-back by nurses over time.

Relying solely on data from the same group pre-post comparison could be problematic and confounding because of group participants' familiarity with the survey content (Sylvia & Terhaar,

2018). Therefore, an objective teach-back observation tool (see Appendix G) was added to counterbalance this probable flaw. The teach-back observation tool, formatted in a nominal (dichotomous) variable, was a validated tool available on the AHRQ website and permitted to be used for this project. The unit nurse champion was responsible for using the evaluation tool randomly during the project period to directly observe the nurse participants using teach-back for new medication teaching. The completed hard copies of the tool were kept in a locked drawer in the nursing unit, accessible only by the nurse champion and the nurse manager until the project lead picked them up personally. Both tools were used for process and outcome tracking. The facility's target goal was to have sixty-three percent of the participants consistently practice teach-back for medication communication. The information about data tools, process, and outcome measures variables, data type, the applicable statistical test, and other relevant information described in this section is listed in Appendix I for reference.

The external outcome data measurement used was the HCAHPS score. There was no evaluation plan for HCAHPS data collection or statistical analysis because this quarterly CMS comparison star rating report is published publicly. The project goal was to attain a minimal ten percent increase from the current thirty-nine percent by the subsequent reporting period after the project implementation.

Data Analysis

The EBP project aimed to learn if there were any practice changes in medication teaching with nurses who received training in the teach-back during the twelve weeks from October 24, 2023, to January 16, 2024. A total of ten nurses were recruited, but two dropped out during the project period due to personal reasons. The remaining eight nurses participated in and completed the teach-back training and the three surveys of the project. Considering the project design involved the same

participant group with pre-post-intervention comparisons and the project sample size was small, with only eight participants (n=8), a paired t-test was appropriate for data analysis (Kim et al., 2020). While the project intervention and obtained data did not show statistical significance, nonetheless, clinical significance was evidenced.

Analysis Methods

Data was imported and analyzed using SPSS version 23 for Windows (IBM Corp.). Frequency tables and descriptive statistics were used to summarize the data for demographics, Teach Back Survey, and Teach-Back Observation Tool. Paired *t*-tests (Field, 2013) were used to determine if there was a statistically significant difference in the importance of using teach-back in medication teaching practice and confidence in using teach-back for medication teaching between the three-time points (Week 1 pre-teach-back module training, Week 6, and Week 10 after the module training).

Demographics

The data collected in this project included demographic information, teach-back survey data, and teach-back observation tool data at three time points (Week 1 pre-teach-back module training, Week 6 after the model training, and Week 10 after the module training). No missing responses were observed in the demographic data, the teach-back survey data, and the teach-back observation tool data (See Tables J1-J5 of Appendix J for the data used for data analysis).

Eight nurses participated in this project, and Table 1 presents the demographics of the project participants. Nearly two-thirds of the nurses were female (62.5%) and had at least five years of experience as a direct care nurse (62.5%).

Table 1

Demographics

	N	%
Gender		
Male	3	37.5
Female	5	62.5
Years as RN		
≤ 2	1	12.5
3-5	2	25.0
> 5	5	62.5

Figure 1

Gender

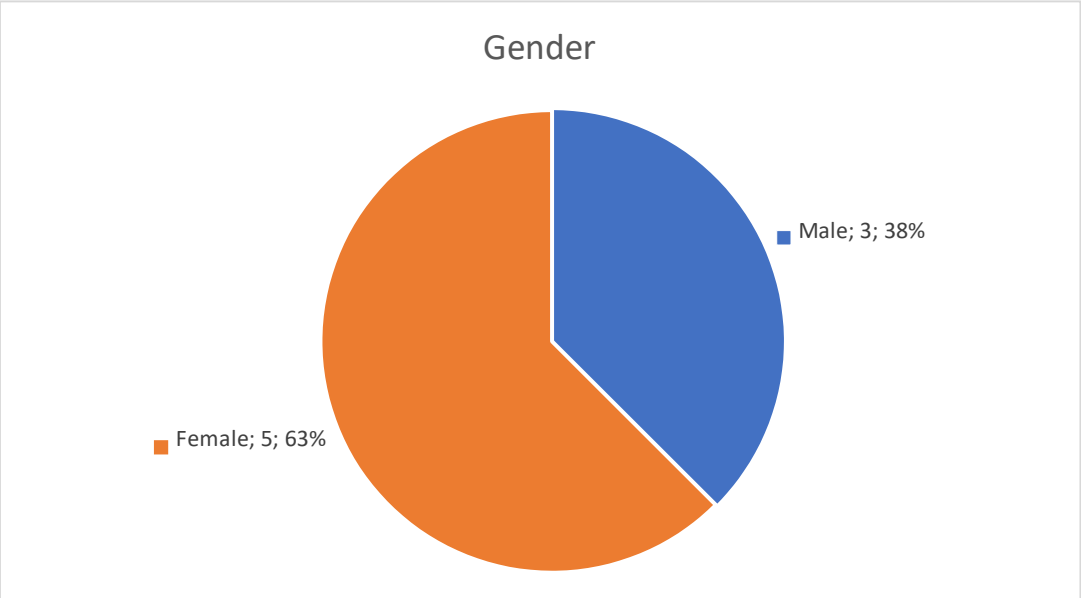
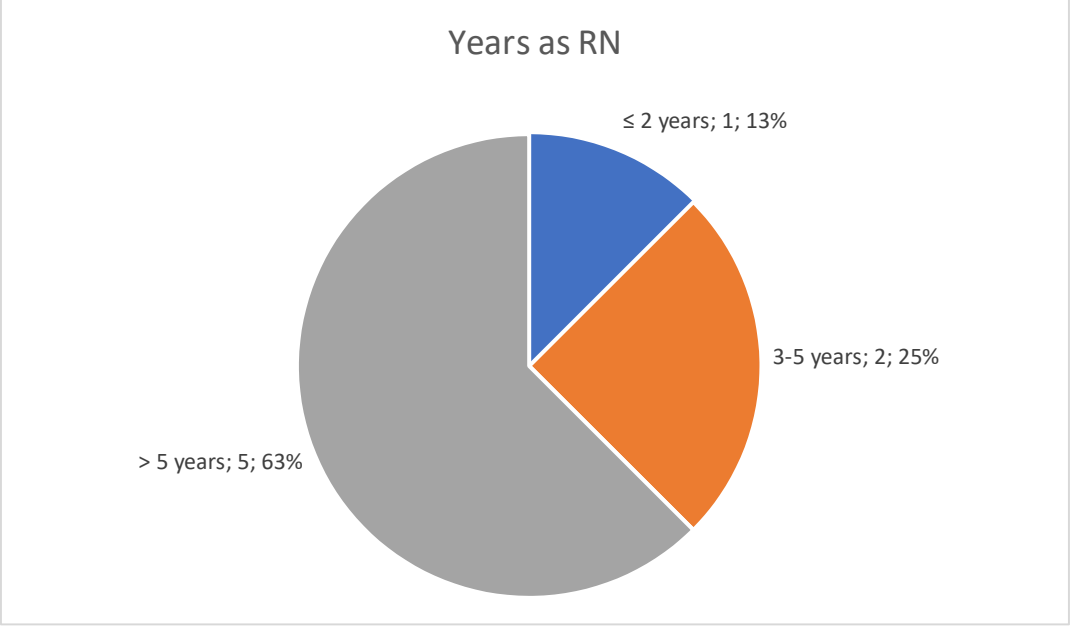


Figure 2

Years as RN



Intervention Results

The results of the teach-back survey at Week 1 (pre-teach-back module training), Week 6 (after the module training), and Week 10 (after the module training) are summarized in Table 2. Half of the nurses had training in the teach-back before the teach-back module training (50% for Week 1), while all eight nurses had training after the module (100% for Week 6 and Week 10). Nearly two-thirds of the nurses before the teach-back module training (62.5% for Week 1) and all nurses after the module (100% for Week 6 and Week 10) indicated that the teach-back method has changed how they communicate medication to patients. Most nurses before the teach-back module training (75.0% for Week 1) and all nurses after the module (100% for Week 6 and Week 10) currently used teach-back for medication communication/teaching. These nurses indicated they used teach-back for medication communication/teaching occasionally (62.5% for week 1, 75.0% for week 6, and 62.5% for Week 10). Nurses did not use teach-back because patients were not interested (37.5% for Week 1) and had no time (50.0% for Week 6 and Week 10).

Table 2

Summary of Teach-back Survey Results (N (%))

	Week 1	Week 6	Week 10
Date of the survey	10/24/2023-10/31/2023	11/28/2023-12/14/2023	01/04/2024-01/16/2024
Have you ever had training in the teach-back before?			
Yes	4 (50.0)	8 (100)	8 (100)
No	1 (12.5)	0	0
Not sure	3 (37.5)	0	0
If you have been trained in the teach-back method, has it changed how you communicate medication to your patients?			
Yes	5 (62.5)	8 (100)	8 (100)
No	0	0	0
Not applicable	3 (37.5)	0	0
Do you currently use teach-back for medication communication/teaching?			
Yes	6 (75.0)	8 (100)	8 (100)
No	2 (25.0)	0	0
If you are currently using teach-back for medication communication/teaching, how often do you use it?			
Rarely	0	0	0

Occasionally	5 (62.5)	6 (75.0)	5 (62.5)
Always	2 (25.0)	2 (25.0)	3 (37.5)
Not applicable	1 (12.5)	0	0
If you are not currently using teach-back, what is the most likely reason for it?			
No time	2 (25.0)	4 (50.0)	4 (50.0)
No one else use it	0	0	0
Patient not interested	3 (37.5)	3 (37.5)	2 (25.0)
I don't know	2 (25.0)	0	1 (12.5)
Not applicable	1 (12.5)	1 (12.5)	1 (12.5)

Note. $N = 8$ for Week 1, Week 6, and Week 10.

In the teach-back survey, participants were asked about the importance and confidence in using teach-back for medication teaching practice. The mean ratings for importance in using teach-back for medication teaching practice were 9.50 ($SD = 0.76$), 9.50 ($SD = 0.54$), and 9.75 ($SD = 0.46$) at Week 1, Week 6, and Week 10, respectively (Table 3 and Figure 3), indicating that participants believed that using teach-back for medication teaching practice was very important at all three-time points during the project period. Although the perceived importance of using teach-back for medication teaching practice seemed to be increasing from Week 1 to Week 10, the difference was not statistically significant between any two time points ($t(7) = 0$, $p = 1.000$ for Week 1 vs. Week 6; $t(7) = -0.798$, $p = 10.451$ for Week 1 vs. Week 10; $t(7) = -1.000$, $p = 0.351$ for Week 6 vs. Week 10) (Table 4).

The mean ratings for confidence in using teach-back for medication teaching practice were 7.75 ($SD = 1.17$), 8.00 ($SD = 1.60$), and 8.88 ($SD = 0.99$) at Week 1, Week 6, and Week 10, respectively (Table 3 and Figure 3), indicating that participants were very moderately to very confident in using teach-back for medication teaching practice at all three-time points during the project period. Although the confidence in using teach-back for medication teaching practice seemed to be increasing from Week 1 to Week 10, the difference was not statistically significant between any two time points ($t(7) = -0.475$, $p = 0.649$ for Week 1 vs. Week 6; $t(7) = -2.346$, $p = 0.051$ for Week 1 vs. Week 10; $t(7) = -1.433$, $p = 0.195$ for Week 6 vs. Week 10) (Table 4).

Table 3

Descriptive Statistics (M (SD)) of Importance and Confidence in Using Teach-back for Medication Teaching

	Week 1	Week 6	Week 10
Importance	9.50 (0.76)	9.50 (0.54)	9.75 (0.46)
Confidence	7.75 (1.17)	8.00 (1.60)	8.88 (0.99)

Note. For importance, scores could range from 1 to 10 (1 = not at all important, 10 = very important), and for confidence, scores could range from 1 to 10 (1 = not at all confident, 10 = very confident).

Table 4

Comparisons of Importance and Confidence in Using Teach-back for Medication Teaching

			Shapiro-Wilk normality test			Paired *t*-test		
	M_{diff} (*SD*)	95% *CI*	*S*	*df*	*p*	*t*	*df*	*p*
Importance								
Week 1 vs. Week 6	0 (0.53)	[-0.45, 0.45]	0.732	8	0.005	0	7	1.000
Week 1 vs. Week 10	-0.25 (0.89)	[-0.99, 0.49]	0.826	8	0.054	-0.798	7	0.451
Week 6 vs. Week 10	-0.25 (0.71)	[-0.84, 0.34]	0.827	8	0.056	-1.000	7	0.351
Confidence								
Week 1 vs. Week 6	-0.25 (1.49)	[-1.49, 0.99]	0.948	8	0.690	-0.475	7	0.649
Week 1 vs. Week 10	-1.13 (1.36)	[-2.26, 0.01]	0.930	8	0.512	-2.346	7	0.051
Week 6 vs. Week 10	-0.88 (1.73)	[-2.32, 0.57]	0.919	8	0.425	-1.433	7	0.195

Note. M_{diff} = mean difference; *SD* = standard deviation; *CI* = confidence interval; *S* = Shapiro-Wilk test statistic; *t* = *t*-statistic; *df* = degrees of freedom; *p* = *p*-value. Based on the results of the Shapiro-Wilk tests, the normality assumption was not satisfied when comparing the importance between Week 1 and Week 6 ($p = 0.005$). As the normality assumption was not satisfied when comparing importance between Week 1 and Week 6, the Results of the Wilcoxon signed rank test ($W = 1.500$, $SE = 1.061$, $z = 0$, $p = 1.000$) confirmed the results of the paired t-test for the comparison of importance in using teach-back for medication teaching between Week 1 and Week 6.

Figure 3

Mean Scores of Importance and Confidence in Using Teach-back for Medication Teaching

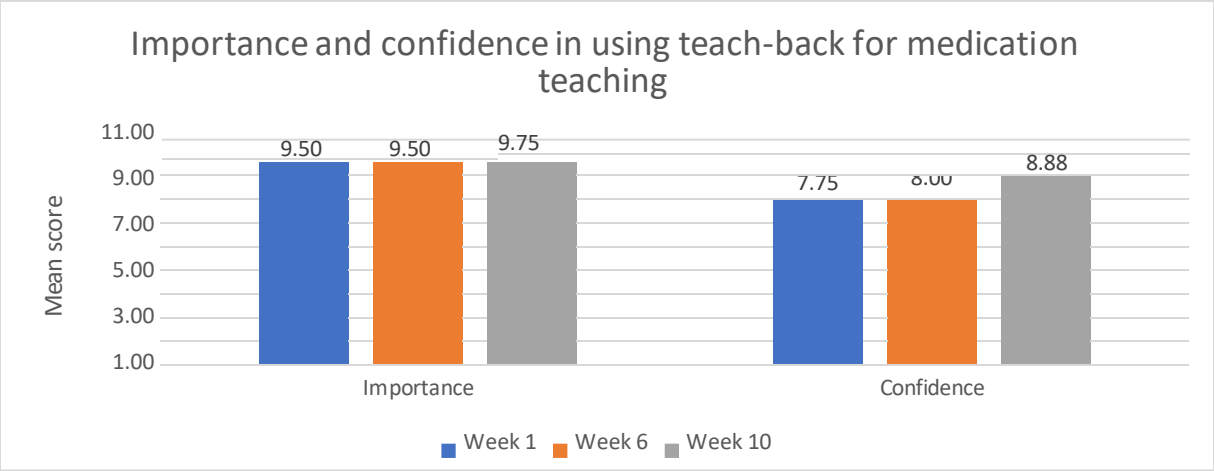


Table 5 summarizes the TBOT results. TBOT documented if a nurse has performed a specific task at Week 1 pre-teach-back module training, Week 6 after the model training, and Week 10 after the module training. There was only one observation in Week 1, and no observations were made in Week 6, and three observations in Week 10.

All observed nurses at Week 1 (100%) and Week 10 (100%) used a caring tone of voice and attitude, displayed comfortable body language, made eye contact, sat down, used plain language, asked the patient to explain in their own words what they were told to do about signs and systems they should call the doctor for and what they were told to do about key medications, avoided asking questions that can be answered with a yes or no, and took responsibility for making sure they were clear.

One nurse in Week 1 (100%) and two nurses in Week 10 (66.7%) used non-shaming, open-ended questions. The one nurse in Week 1 (100%) and one nurse in Week 10 (33.3%) explained and checked again if the patient was unable to use teach-back. The nurse in Week 1 (100%) and two nurses in Week 10 (66.7%) did not use reader-friendly print materials to support learning. No nurses at Week 1 or Week 10 had documented use of and patient's response to teach-back (100% "not applicable" for

Week 1; 66.7% "no" and 33.3% "not applicable" for Week 10) or included family members/caregivers if they were present (100% "not applicable" for Week 1 and Week 10).

Table 5

Summary of Teach-back Observation Tool Results (N (%))

Item	Week 1	Week 10
Date	10/28/2023	01/16/2024-01/17/2024
Use a caring tone of voice and attitude?		
Yes	1 (100)	3 (100)
No	0	0
Not applicable	0	0
Display comfortable body language, make eye contact, and sit down?		
Yes	1 (100)	3 (100)
No	0	0
Not applicable	0	0
Use plain language?		
Yes	1 (100)	3 (100)
No	0	0
Not applicable	0	0
Ask the patient to explain in their own words what they were told to do about signs and systems they should call the doctor for?		
Yes	1 (100)	3 (100)
No	0	0
Not applicable	0	0
Ask the patient to explain in their own words what they were told to do about key medications?		
Yes	1 (100)	3 (100)
No	0	0
Not applicable	0	0
Use non-shaming, open-ended questions?		
Yes	1 (100)	2 (66.7)
No	0	1 (33.3)
Not applicable	0	0
Avoid asking questions that can be answered with a yes or no?		
Yes	1 (100)	3 (100)
No	0	0
Not applicable	0	0
Take responsibility for making sure they were clear?		
Yes	0	3 (100)
No	0	0
Not applicable	1 (100)	0

Explain and check again if the patient is unable to use teach-back?		
Yes	1 (100)	1 ((33.3)
No	0	2 (66.7)
Not applicable	0	0
Use reader-friendly print materials to support learning?		
Yes	0	1 ((33.3)
No	1 (100)	2 (66.7)
Not applicable	0	0
Document use of and patient's response to teach-back?		
Yes	0	0
No	0	2 (66.7)
Not applicable	1 (100)	1 (33.3)
Include family members/caregivers if they were present?		
Yes	0	0
No	0	0
Not applicable	1 (100)	3 (100)

Note. $N = 1$ for Week 1, $N = 0$ for Week 6, and $N = 3$ for Week 10.

External Outcome Data Analysis

The external outcome measurement used for the project was the quarterly HCAHPS score posted publicly by the CMS. The available HCAHPS score on the CMS website before the project implementation for this facility was thirty-nine percent. The latest HCAHPS score ending January 31, 2024, shows the facility is currently at fifty-nine percent, with fifty-eight and sixty-two percent, respectively, for California and the national average.

Clinical Significance

In clinical practice, if an intervention can improve patients' health outcomes and healthcare experience or add value to their lives, the result is clinically meaningful and significant, regardless of the statistical significance (Ranganathan et al., 2015). In other words, clinical significance is most important in EBP projects, which aim to result in practice change that ultimately improves patient outcomes. Although the statistical analysis of the project data did not produce a p-value less than 0.05, it revealed valuable insights into participants' knowledge gained and practice change. As demonstrated in

Figure 3, all participants showed progressive increases in perceived importance and confidence using the teach-back technique. Moreover, participants who always used the teach-back technique for medication teaching increased from twenty-five percent to nearly thirty-eight percent by the end of the project. All eight participants indicated that the teach-back training changed how they communicated medication to their patients.

Impact

The project intervention presented promising results of system change at the micro-meso-macro levels, as expected during the planning phase of the project. At the micro level (between patient and healthcare provider), the data revealed that all the participants (100%), after the intervention of teach-back training, used the teach-back technique and changed how they communicated medication with patients, compared to 75% and 62.5% respectively before the intervention. At the meso-level (local organization), the practice changes at the MSO unit facilitated staff engagement. The fact that progressive increase in the perception of the importance of teach-back and the confidence in using teach-back in all participants may inspire peer participation in adopting teach-back in other units of the organization. Finally, the improvement in survey results, as indicated by the increased HCAHPS score, reflected a more desirable standing of the facility with CMS and the community, a macro-system change resulting from the intervention.

Future Implications

Improving medication communication between the nursing staff and patients is an important organizational priority for this facility. The EBP project and its results set the wheel of medication teaching in motion. Besides designating the current nurse champion as the leader of future medication enhancement projects, the facility is working on updating the medication handout to be more user-friendly and listing new medication teaching guides in patient orientation/admission packets.

Limitations

While the results of the projects are favorable in answering the PICOT question, it is essential to know that there are limitations to the project. The most obvious shortcoming of the project is the small sample size. The participants were all from the day and evening shifts of the same unit. Moreover, the participants were the core staff of the unit, familiar with being project participants; therefore, they may have a pre-set perception of how to fulfill their role in project participation.

Although the project was implemented in the MSO unit, most of the patients in the unit were orthopedic-related. Many of the orthopedic patients were sophisticated and younger in age compared to their counterparts, typically older and more complex medical-surgical patients. In other words, using teach-back could be more straightforward for the MSO patients of this facility.

Lastly, the timing of the project implementation could be a drawback. The project was conducted over two major holidays, during which many participants took time off, or the unit was closed due to a low patient census. As a result, not all the participants had been evaluated using the teach-back evaluation tool, and the few who had been evaluated were done only once. Hence, there was no absolute certainty that participants were proficient in using teach-back perpetually.

Dissemination Plan

The final step of the EBP project is dissemination. The goal of dissemination is to expand nursing knowledge and promote the application of EBP in clinical settings. Therefore, it is the professional responsibility of the project lead to disseminate the DNP project results at and beyond the project site to wider audiences.

The DNP project aimed to promote medication safety through the teach-back technique by nursing providers. Upon the completion of project implementation and data analysis in early February 2024, the results were disseminated through written reports and table illustrations to the

direct stakeholders, including the project team, nurse participants, and executive nurse leaders. A formal Webinar dissemination at the facility and corporation's Nursing Excellence Showcase is scheduled for July 2024.

Upon the approval of the final manuscript in March 2024, a video oral poster presentation of the project will be shared with the University of St. Augustine for Health Science NUR7803 faculty and nursing colleagues. The approved manuscript will then be electronically submitted, collected, and archived to the Scholarship and Open Access Repository (SOAR@USA) for dissemination to the University's students, staff, and faculty.

For wider dissemination of the project results, LinkedIn is an e-platform where the project will be posted for dissemination. The local Sigma Theta Tau International Nu-Xi at-Large Chapter has been contacted for a poster presentation during one of the regional meetings. An oral poster presentation at the Alpha Alpha Alpha Chapter of Sigma Theta Tau is to take place in August 2024. The American Nurse Journal and the Institute for Safe Medication Practice (ISMP) are peer-reviewed nursing journals and professional organizations for project dissemination for their commitment to medication safety.

Conclusion

Medication errors in acute care settings cause more than 770,000 injuries or deaths, costing the healthcare systems between $1,56 and $5.6 billion annually (Slight et al., 2018). While medication education is one of the primary responsibilities of nurses, an effective strategy for medication communication is often lacking amidst other competing demands on nurses. The deficiency in medication communication was also evidenced in this mid-size Northern California hospital, which, otherwise, has a high CMS performance ranking except a consistently low score in medication communication. Thus, the purpose of the PICOT question and the project was to determine if

implementing evidence-based teach-back training could improve and standardize the medication communication practice in the hospital's nursing staff.

The project was guided by the JHEBP model for nursing and healthcare professionals and Lewin's Change Theory. A detailed description of the project, including the clinical setting, literature review, participants, interventions, evaluation, project outcomes, impacts, and dissemination plan, was included in the paper. The project timeline, budget, implementation tools, and statistical data were discussed and included in the appendices. While the participation in the DNP project was small and statistical significance was not achieved, clinical significance was realized in all eight participants, and there was an improvement in the hospital's HCAHPS scores. The project result answered the PICOT favorably and supported the teach-back method as an effective strategy for medication communication for nurses. More importantly, it is evidenced that teach-back is patient-centered care that is essential in promoting safe and quality care in patients.

References

Agency for Healthcare Research and Quality (2017, April). *Teach-back interactive module slides*. Agency for Healthcare Research and Quality. https://www.ahrq.gov/patientsafety/reports/engage/interventions/teachback-mod.html

Antrum et al. (2021). The teach-back method to improve patients' perception of nurse communication. *Med-Surg Matters*, *28*(5), 4–7. https://prxusa.lirn.net/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=ccm&N= 139311800&site=eds-live

Aromataris, E., & Riitano, D. (2015). Constructing a search strategy and searching for evidence. A guide to the literature search for a systematic review. *American Journal of Nursing*, *114*(5), 49-56. https://doi.org/10.1097/01.NAJ.0000446779.99522.f6

Callaway, C., Cunningham, C., Grover, S., Steele, K. R., McGlynn, A., & Sribanditmongkoi, V. (2018). Patient handoff processes: Implementation and effects of bedside, handoffs, the teach-back method, and discharge bundles on an inpatient oncology unit. *Clinical Journal of Oncology Nursing, 22*(4), 421–428. https://doi.org/10.1188/18.CJON.421-428

Cellini, M. (2022, April 6). *Fatal medication error-Radonda Vaught.* [Video]. YouTube. https://www.youtube.com/watch?v=VVWr_NKFonA

Centers for Medicare and Medicaid Services. (2023, March 16). *Hospital quality initiative public reporting.* https://www.cms.gov/medicare/quality-initiatives-patient-assessment-instruments/hospital quality inits/hospital compare

Centers for Medicare and Medicaid Services. (n.d.*). Patient survey rating*. https://www.medicare.gov/carecompare/details/hospital/050197?id=2cdc853f-6c81-4f46-9841-331002df8d60&city=Redwood%20City&state=CA&zipcode=&measure=hospital-patient-surveys

Dang, D., Dearholt, S., Bissett, K., Ascenzi, J., & Whalen, M. (2022). *Johns Hopkins evidence-based practice for nurses and healthcare professionals: Model and guidelines* (4th ed.). Sigma Theta Tau International.

Eloi, H. (2021). Implementing teach-back during patient discharge education. *Nursing Forum, 56*(3), 766–771. https://doi.org/10.1111/nuf.12585

Harkanen, M., Vehvillainen-Julkunen, K., Murrells, T., Rafferty, A. M., & Franklin, B. D. (2019). Medication administration errors and mortality: Incidents reported in England and Wales between 2007-2016. *Research in Social and Administrative Pharmacy, 15*(7), 858-863. https://doi.org/10.1016/j.sapharm.2018.11.010

Ho, G. J., Liew, S. M., Ng, C. J., Shunmugam, R. H., & Glasziou, P. (2016). Development of a search strategy for an evidence-based retrieval service. *PLOS One, 11*(12), e0167170. https://dooi.org/10.1371/journal.ppme.0167170

Hussein, M., Pavlova, M., Ghalwash, M., & Groot, W. (2021). The impact of hospital accreditation on the quality of healthcare: A systematic literature review. *BMC Health Service Research, 21*(1), 1-12. https://doi.org/10.1186/s12913-021-07097-6

Intellectus Statistics. (2019). Intellectus Statistics [Online computer software]. Retrieved from https://analyze.intellectusstatistics.com/

Kim, M., Mallory, C., & Valerio, T. (2020). *Statistics for evidence-based practice in nursing* (3rd ed.). Jones & Bartlett Learning

Klingbeil & Gibson. (2018). The teach-back project: A system-wide evidence-based practice implementation. *Journal of Pediatric Nursing, 42*, 81–85. https://doi.org/10.1016/j.pedn.2018.06.002

Kogon, K., Blackmore, S., & Wood, J. (2015). *Project management for the unofficial project manager.* BenBella Books.

Komondor & Choudhury. (2021). Assessing teach-back utilization in a downtown medical center. *Health Literacy Research and Practice,5*(3), e226-e232. https://doi.org/10.3928/24748307-20210719-01

Landro, L. (2015, October 26). *The most crucial half hour in the hospital: The shift change.* The Wall Street Journal. https://www.wsj.com/articles/the-most-crucial-half-hour-at-a-hospital-the-shift-change-1445887115

Lawson, T., Weekes, L., & Hill, M. (2018). Ensuring success and sustainability of a quality improvement project. *BJA Education, 18(*5), 147–152. https://doi.org/10.1016/j.bjae.2018.02.002

Li et al. (2020). Medication education for dosing safety (MEDS): A randomized control trial. *Annals of Emergency Medicine, 76*(5), 637–645. https://doi.org/10.1016/j.annemergmed.2020.07.007

MacDowell, P., & Davis, M. (2121, March 12). *Medication administration errors.* Agency for Healthcare Research and Quality. https://psnet.ahrq.gov/primer/medication-administration-errors

Marks et al. (2022). Using a teach-back intervention significantly improves patients' knowledge, perceptions, and satisfaction with nurses' discharge medication education. *Worldviews on Evidence-Based Nursing,19*(6), 458–466. https://doi.org/10.1111/wvn.12612

McFarlan, S., O'Brien, D., & Simmons, E. (2019). Nurse-leader collaborative improvement project: Improving patient experience in the emergency department. *Journal of Emergency Nursing, 45(*2), 137–143. https://doi.org/10.1016/j.jen.2018.11.007

Melnyk, B. M., & Fineout-Overholt, E. (2018). *Evidence-based practice in nursing and healthcare. A guide to best practice.* Lippincott Williams & Wilkins.

Murphy, L. (2021). Employing interprofessional health teams to meet meso-level challenges: A short report. *Journal of Interprofessional Care, 35*(6), 971–974. https://doi.org/10.1080/13561820.2021.1889486

Nash, D. B., Joshi, M. S., Ransom, E. R., & Ransom, S.B. (2019). *The healthcare quality book: Vision, strategy, and tools.* (4th ed.). Health Administration Press.

Nelson, R., & Staggers, N. (2018). Health informatics: An interprofessional approach (2nd ed.). Elsevier.

Nickles et al. (2020). Nursing students use teach-back to improve patients' knowledge and satisfaction: A quality improvement project. *Journal of Professional Nursing, 36*(2), 70–76. https://doi.org/10.1016/j.profnurs.2019.08.005

Pajaro et al. (2022). Effect of Ask3Teach3 on patient satisfaction on medication communication. *Journal of Nursing Practice Applications and Reviews of Research,12*(1), 51-57. https://doi.org/10.13178/jnparr.2022.12.01.1208

Patient Safety by Healthcare Excellence Canada. (2017, October 30). *Near-fatal medication error leads nurse to make patient safety a priority.* [Video]. YouTube. https://www.youtube.com/watch?v=MGT8yoAIun4&t=16s

Prochnow, J. A., Meiers, S. J., & Scheckel, M. M. (2018). Improving patient and caregiver new medication education using an innovative teach-back toolkit. *Journal of Nursing Care Quality, 34*(2), 101-106. https://doi.org/10.1097/NCQ.0000000000000342

Radtke, K. (2013). Improving patient satisfaction with nursing communication using bedside shift report. *Clinical Nurse Specialist, 27*(1), 19–25. https://doi.org/10.1097/NUR.0b013e3182777011

Ranganathan, P., Pramesh, C. S., & Buyse, M. (2015). Common pitfalls in statistical analysis: Clinical versus statistical significance. Perspectives in Clinical Research, 6(3), 169–170. https://doi.org/10.4103/2229-3485.159943

Rodziewicz, T. L., & Hipskind, J. E. (2020*). Medical Error Prevention*. Stat Pearls [Internet]. Treasure Island (FL): Stat Pearls Publishing.aludinfantil.org/Postgrado_Pediatria/Pediatria_Integral/papers/Medical%20Error%20Prevention%20-%20StatPearls%20-%20NCBI%20Bookshelf.pdf

Scott, C., Andrews, D., Bulla, S., & Loerzel, V. (2019). Teach-back method: Using a nursing education intervention to improve discharge instructions on an adult oncology unit. *Clinical Journal of Oncology Nursing*, *23*(3), 288-294. https://doi.org/10.1188/19.CJON.288.294

Slight, S. P., Seger, D. L., Franz, C., Wong, A., & Bates, D. W. (2018). The national cost of adverse drug events resulting from inappropriate medication-related alert overrides in the United States. *Journal of American Medical Informatics Association, 25(*9), 1183-1188._ https://10.1093/jamia/ocy066

Sylvia, M. L. & Terhaar, M. F. (2018). *Clinical analytics and data management for the DNP*. Springer Publishing Company, LLC.

Teach Back [Internet]. (2018, November 27). Learn about teach-back. https://teachback.org

The Institute for Johns Hopkins Nursing. (2021, July 28). What's new with the Johns Hopkins evidence-based practice model and tools. https://nursing-theory.org/theories-and-models/lewin-change-theory-php

Toussaint, J. S., & Segel, K. T. (2022). 4 Actions to reduce medical errors in US hospitals. *Harvard Business Review Digital Articles*,

1-https://prxusa.lirn.net/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=heh&AN=156759103&site=eds-live

University of St. Augustine for Health Sciences. (2021). *Doctor of Nursing Practice (DNP) program practicum handbook*. https://my.usa.edu/ICS/icsfs/USAHS_DNP_Practicum_Handbook_8-2022_FINAL.pdf?target=cad65815-2f93-450e-8ed8-c418c501687b

Wong, B. M., & Sullivan, G. M. (2016). How to write up your quality improvement initiatives for publication. *Journal of Graduate Medical Education,8*(2), 128–133. https://doi.org/10.4300/JDME-D-18-00086.1

Word Health Organization. (2017, March 29). *Medication without harm.* https://www.who.int/initiatives/medication-without-harm#:~:text= It%20was%20formally%20launched%20at,Germany%20on%2029%20March%202017

Yen, P. H., & Leasure, A. R. (2019). Use and effectiveness of the teach-back method in patient education and health outcomes. *Federal Practitioner, 36*(6), 284–289. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6590951/

Table 1: Synthesis Matrix

	Improved pt/ RN medication communication	Higher HCAHPS score and $ $	Lower readmission	Increase selfcare/ self-engagement due to more knowledge= health literacy	Better patient experience	Improved medication safety	Increased patient outcomes	Extra information /Remarks
Antrum et al. (2021). Used 20 minute online educational forum for teach back training	**x**	X and $$	**x**	**x**	**x**			
Callaway et al. (2018). Tools: AHRQ	**x**		**x**	**x**		x		Inconsistent feedback on bedside reporting
Eloi (2020). Tools: AHRQ tool kit			**x**	**x**		**x**	**x**	75% of participants indicated time issue
Klingbell & Gibson (2018). Used Un-named teachback tools				**x**		x	**x**	
Komondor & Choudhury (2021). Used Teach back training .org				**x**				Time issue is a concern. (chunk and check tool and only 1-2 min more per session if used correctly

Li et al. (2020) Un-named teach back and hand out used				**x**		X No med error recorded		
Marks et al. (2022) AHRQ teach back. TIME(teach important med side effects)		**x**		**x**	**x**	x		
Nickles et al. (2020) AHRQ teach-back used		**x**		**x**	**x**		**x**	
Pajaro et al. (2022) Teach-back done at med admin and again at bedside reporting with med sheet	**X** Pt centered care	**x**	x	**x**	**x**	x	**x**	Mixed feedback from nurses on bedside reporting and teaching of med (time consumption and potential frightening pts with Side effects**)**
Prochnow et al. (2018). Used 20 min teachback training from AHRQ		X and $$				x	**x**	
Scott et al. (2019) one-hour selfconstructed teachback method based on IHI	**x**		**x**	**x** Nurses also gained better knowledge and confidence using teachback			**x**	

Yen & Leasure (2019). mentioned short to 20-hour teach-back program			**x**	**x**	**x**		**x**	
	4	**5**	**6**	**11**	**5**	7	**7**	

Legend: AHRQ (Agency for Healthcare Research and Quality); IHI (Institute for Healthcare Improvement).

Appendix A

Summary of Primary Research Evidence

Citation	Design, Level Quality Grade	Sample Sample size	Intervention Comparison (Definition s should include any specific research tools used along with reliability & validity)	Theoretical Foundation	Outcome Definition	Usefulness Results ey Findings

Antrum et al. (2021). The teach back method to improve patients' perception of nurse communication. *Med-Surg Matters*,*28* (5), 4–7. https://prx- usa.lirn.net/login?url=https://search.ebscoho st.com/login.asp x?direct=true&db=ccm&AN=139311800&site=eds-live	Quasi-experimental Level II and B quality. (Most of the quality of evidence question s are favorable).	146 from the three units of the hospital were potential clinician participants and 29% participated and completed the training and competency validation.	Quasi-experimental Approach was used to complete a retrospective data from the nurse communication domain of HCAHPS for pre-intervention data collection. Intervention include the use of evidence-based teach-back tool kit to complete a 20 minutes' didactic online education and hands on competency demonstration from September through November of 2017.	No guiding theory was mentioned. The methodology used was the FOCUS Plan-Do-Study-Act (PDSA).	T test was used to determine if any significant differences between pre-and post-intervention nurse communication on HCAHPS scores Teach-back competency tool was used for validation of each patriciate's competency in using the teach-back method (www.teachbacktraining.org)	HCAHPS data was analyzed statistically using SYSTAT software and the mean score for nurse communication domain up from 68.01% in second quarter to 71.46% for the fourth quarter, 2017. Paired t test also showed significantly improvement from second to the fourth quarter p=0.007. The teach-back method improved in the nurse-patient communication domain of the HCAHPS by more than 2% resulting in a $400,000 return in DSRIP for the organization.

Callaway, et al. (2018). Patient handoff processes. *Clinical Journal of Oncology Nursing*, *22*(4), 421-428. https://doi.org/10.1188/18.CJON.421- 428	Quality Improvement Project Level IV and C quality (unable to	In a 12-bed adult oncology unit, 49 patient and 33 nurses	From January 2015 to June 2016, cognitive competent and non-hospice	The framework of PDSA in three progressive repetitive	Outcome measures used were: PAM, readmission rate, and Nursing Satisfaction Survey. PAM is a 13 items, validated survey used	The PAM scores did not show significant difference (p=0.4354). Nursing satisfaction survey trended toward

	verify validity of the Nurse Satisfaction Survey for change of shift reporting)	participated in the correspondent survey before the intervention and 71 patients and 32 nurses after the intervention	patients admitted to the unit were invited to complete the validated PAM survey before and after the interventions (two independe-nt groups of patients). Interventions is nursing training using PDSA on: Bedside handoffs, teach-back method and discharge bundles (medication reconciliation, discharge education, post-discharge follow up and advanced care planning information). Nurses were asked to complete the Nursing Satisfaction Survey before	cycles were used in guiding the completion of the project.	to assess patient's knowledge, skills and confidence in managing one's own health and healthcare. Readmission rate was calculated based on the total number of patients who experienced an unplanned admission within 30 days of discharge. Nursing Satisfaction Survey was a 11 items self-report questionnaire, for measuring the effectiveness of the interventions.	improvement after the interventions implementation. Most noticeable improvement was the decrease in re-admission rate from 32% for the six-months prior to the intervention implementation to 25% for the six-months following the interventions.

			and after intervention training.			
Eloi, H. (2021). Implementing teach-back during patient discharge education. *Nursing Forum*, *56*(3), 766-771. https://doi.org/10.1111/nuf.12585	Qualitative pretest-posttest design Level IV and A quality	19 Registered nurses with at least 2 years' experience on the medical/surgical units were invited using a consecutive sampling method. Only 12 nurses completed the teach-back training and the pre- and post-training interviews.	From July to August 2016, each participant was given a pre-and post-intervention interview and a training session on the teach-back method. The 20-25 minute interviews were for assessing nurse's knowledge and perception of the teach-back method	No theoretical framework was mentioned. The teach-back method was adopted from the AHRQ. The open-ended interviews were guided by the MHLP	Pre and post-intervention interviews were audiotaped and transcribed for analysis and subsequent development of themes, which were: the benefits of teach-back, application of teach-back, understanding of information, workplace support, and barriers to teach-back.	All of the participants agreed that the teach-back method is a valuable tool that could be used not only for medication and discharge instruction but for other patient education as well (i.e. wound care, pain control etc.). They viewed the application of teach-back would increase patient engagement and leadership support. Barrier most prevalent cited was time constraint.
Klingbeil & Gibson. (2018). The teach back project: A system-wide evidence based practice implementation. *Journal of Pediatric Nursing*, *42*, 81-85. https://doi.org/10.1016/j.pedn.2018.06.00 2	A pre-and-posttest design level IV A quality	300 healthcare clinicians (mostly nurse, also dietitian, occupational and physical therapists, respiratory therapists) of a	The project was rolled out in the organization over 24 months. The intervention was a onetime interactive,	Iowa Model of EBP was used as the frame-work guiding the implementation of the EBP project.	Outcome measure were surveys developed by a outcome survey specialist. A total of 3 surveys were conducted electronically. The first pre-intervention survey was a seven	Result revealed that: staff reported an increase in knowing what health literacy meant from 60% (pre-intervention) to 100% (post-intervention), staff checked for patient/ family

		290 beds Magnet designated hospital participated	and video scenario training on health literacy on health outcomes, teach-back method, strategy and process of teach-back method.		questions survey to evaluate baseline knowledge of health literacy and teach-back method. The second survey was a 10-question survey given 2 months after the intervention to reveal staff experience with teach–back and barriers to the use of teach-back. The third survey with the same content as the second survey was sent at 12 months to evaluate the sustainability of the teach-back practice.	understanding of teaching from 28% (pre) to 33%(post), staff familiar with the teach-back method increased from 60% (pre) to 95%(post), the use of teach- back in daily practice increased from 13%(pre) to 38% (post). The teach-back method is an effective communication and the foundation for quality of care.

Komondor & Choudhury. (2021). Assessing teach-back utilization in a downtown medical center. *Health Literacy Research and Practice*, *5*(3), e226-e232. https://doi.org/10.3928/24748307- 20210719-01	Level IV C quality	135 out of 200 eligible patients participated in the patient survey. Two hundred forty-four clinicians (220 nurses and 24 residents) completed the survey and teach-back training.	Intervention was in 3 parts: first, HLI created a survey to evaluate clinicians' familiarity, perception and use of teach- back method. Then clinicians attended a one-hour teach-back training	No theoretical framework was evidence, and the PDSA model guided the project	The provider survey was used as a process measure, and the patient survey was used as an outcome measure	The results of the patient survey were inconsistent compared to the provider survey. About 95% of the provider survey indicated Teach- back should be used always for patient teaching but only 70% acknowledged using the tool. Patient survey indicated 90% of the providers taught them issues regarding their care but only 46% used the teach-back method. Authors

			session and were offered to small groups. Finally, a five questions patient survey examined whether teach-back was used for patient education and if it was helpful.			questioned if providers overstating the frequently they used the tool.
Li et al. (2020). Medication education for dosing safety(MEDS): A randomized control trial. *Annals of Emergency Medicine*, *76*(5), 637-645. https://doi.org/10.1016/j.annemergmed.2020.07.007	Level I Quality B	149 patients aged between 90 days to 11.9 years enrolled in the study, with 83 in the control group and 66 allocated to the intervention group.	All the families in the study received the standard d/c education; the intervention group received four teaching components: a handout, a demonstration session, teach-back and take home syringe. Follow up scheduled at 2-3 days and 5-7 days after discharge for evaluations	No theoretical framework was mentioned	Outcome measures were the two phone calls to patients/guardians reporting safe dosing of the medication. 75% of the intervention group and 45% of the control group reported safe medication dosing at the first contact; 75% of the intervention group and 54% of the control group reported safe medication dosing at the second phone contact.	The result showed that a brief multi-faceted intervention, including a teach-back method, significantly increased the guardians' confidence and ability to manage correct medication dosing for patients.

Marks et al. (2022). Using a teach-back intervention significantly improves knowledge, perceptions, and satisfaction of patients with nurses' discharge medication education. *Worldviews on Evidence-Based Nursing,19*(6), 458466. https://doi.org/10.1111/wvn.12612	Level II A quality (patients were randomly selected, but unsure if it is also randomly assigned to the two groups).	107 randomly selected medical/ surgical patients participated in the study. 52 patients in the control group and 55 in the intervention group	The pre- test was the control group, which received the usual discharge instructions and the Post Discharge Medication Recall and Experience Survey (PDMRES) . Nursing was trained with a scripted Teach back method created by AHRQ. The intervention group was patients selected one month after the teach-back training to complete the same patient survey.	No framework was used to guide the study	Outcome measures used were the PDMRES provided to participants, the AHRQ Teach-Back Observation Tool used on nurses after the teach-back training and again at one month after the teach-back training.	The patient survey indicated that the patient's most learning needs were knowing medication names and the side effects. The results showed a significant improvement in patient understanding of medication side effects and the use of the teach-back in providers. (72.5% of the control group versus 94.3% of the intervention group knew the side effects of the medications p=0.003; similarly 81.5% of the control group compared to 100% of the intervention group knew why they were taking the medications p=0.02; 21.1% of the control group versus to 55.9% of the intervention group indicated the nurses used the teach-back in teaching medication side effects).

Nickles et al. (2020). Nursing students use of teach-back to improve patients' knowledge and satisfaction: A quality improvement project. *Journal of Professional Nursing*, *36*(2), 70-76. https://doi.org/10.1016/j.profnurs.2019.08.005	Level IV B Quality (pre-post QI project with well-constructed project model, insufficient literature search strategy).	There were 55 qualified and consented participants (criteria: cognitive geriatric medical patient with available caregiver anticipated to be discharge with at least one new medication) .	This was a two-part train the trainer intervention utilizing junior and senior student nurses of a BSN program. First, the faculty project coordinator trained the student nurses using the resources "Using the Teach-Back Toolkit" developed by AHRQ. After the training, the student nurses working under the leadership of faculty leader, would use the teach-back to teach patient and	Model for Improvement and the PDSA model were used for this project.	Process measures: 1 The "Teach-Back Observation Tool" to evaluate student nurses' of the use of teach-back method. 2 Nursing Student Perception of Teach- back Effectiveness Survey Outcome measures:1. One-minute Evaluation completed by patient or caregiver to measure the usefulness and satisfaction of the teach-back session. 2. HCAHPS survey of the medication communication domain.	Based on the Teach-Back Observation Tool, 80% of the student nurses were competent and confident in using the method for patient teaching. 55% of the student nurses found the teach-back is easy to use, 45% found the method was effective in enabling patients to understand the purpose and side effects of their medication, whereas 65% indicated their patients required repeated teaching before demonstrating understanding. One-minute evaluation reflected that 96.4% of the participants were satisfied with the teach-back method but the HCAHPS scores did not meet the benchmarks: 75% measuring staff explanation of purpose of new medication (benchmark 77.2%) and 50% for

			caregiver on their current and new medication including the side effects.			communication of possible side effects of new medications (benchmark 52.3%). Possible causes to the low HCAHPS could be small sample size, HCAHPS score included patients who did not participate in the project.
Pajaro et al. (2022). Effect of Ask3Teach3 on patient satisfaction on medication communication. *Journal of Nursing Practice Applications and Reviews of Research*,*12*(1), 51-57. https://doi.org/10.13178/jnparr.2022.12.01 .1208	Level IV B Quality (pre and post-test study design QI project using standardized training tools)	Twenty-one nurses of the 24 bed oncology unit participated in the project.	An one hours nursing training on Ask3 Teach3 Teach- back method that entailed a standard script (name, purpose and common side effects of the new medications) and pictograms representing medication side effects to ensure consistency in patient-nurse communicat	No theoretical framework mentioned or use for the project	Outcome measure was the HCAHPS two month before and two months after the implementation of the Ask3Teach3 Teach-back method.	The HCAHPS scores were significantly improved after the intervention implementation. The overall patient satisfaction score showed a 37.5% increase from 62.5% to 100%. The medication communication on side effect increased from 25% to 100%. A standardized script for teach-back covering the essential components of medication communication (name, purpose and common side effects) increased patient satisfaction

			ion.			and HCAHPS scores.
Prochnow et al. (2018). Improving patient and caregiver new medication education using an innovative teach-back toolkit. *Journal of Nursing Care Quality, 34*(2), 101-106. https://doi.org/10/1097/NCQ.0000000000000342	Level IV A Quality (Theory guided one group pre- and post-education designed QI project and robust literature search)	74 patients and 33 caregivers were enrolled in the study (criteria: English speaking, at least age 18 or above and to be discharged home with at least one new medication)	25 of the 29 RNs on the demonstration unit participate in the pre- and post-education, training observations and self-reported outcome assessments and evaluations Training of teach-back include video about teach-back	The Ottawa Model of Research Use was the change theory used to guide the implementation of the project.	Patient / Caregiver outcome measure: Patient recalled 97% on the purpose of new medications and 66% of the side effects. Caregiver remembered the purpose of medication at 100% and 84% of the medication side effects. Nurse outcome measures: RNs self-reported increased conviction and importance in the use teach-back method and increased (5.5 mean score pre-education to 9.5 three-month follow-up) Frequency	The use of teach-back method enhanced patient and caregiver understanding to medication particularly new medications. Teach back promote quality of care, patient engagement and satisfaction.
			by the IHI, overview on Observation Tool, a handout and discussion, role play on the "10 Elements of Competence for Using Teach- back Effectively". Participants		in use of teach back sessions also increased from 2.2 mean score (pre-education) to 4.2 (post-education at three months follow-up). Paired t-test=<0.001. HCAHPS scores increased in all three medication communication domain (77% pre to 80% post on the questions how often RN explained	

			were contacted 2 to 12 days after discharge and asked to recall and state the purpose of the new med and at least one side effect taught by RN using teach- back.		things in easy to understand manner, 61% pre to 71% post on teaching patient the purpose and side effects of the new medications).	
Scott et al. (2019). Teach-back method: Using a nursing education intervention to improve discharge instructions on an adult oncology unit. Clinical Journal of Oncology Nursing, 23(3), 288-298. https://doi.org/10.1188/19.CJON.288-294	Level IV B Quality (pre and post education study design	19 nurses on the hematology - oncology unit	The IHI's Always Events toolkit and evidence-based literature principals were used for the training curriculum. Upon completion of the training, the nurses were assessed to ensure competency using the 10 elements competency tool.	Authors mentioned use of teaching principles from evidence-based literature was incorporated in the curriculum development strategies but no specifics were named.	Outcome measures: The Conviction and Confidence Scale was used to rate three areas of patient education: confidence of the nurses in using the teach-back technique, their belief on how teach-back should be used, and how often the technique was used with patient teaching. The survey was sent to nurses pre-implementation, post-implementation (T1), one month post-implementation (T2) and again at three month post-implementation (T3).	The participants rated higher in all post-intervention implementation. The difference between the time-points were statistically significant (p=0.022 from pre-implementation to T1; p=0.048 from T1 to T2; p=0.007 from T2 to T3). Teach- back method in clinical practice increased nurses' knowledge and conviction to its use which would benefit patients' comprehension in their own care management when transitioned to home and lower re-admission

Legend: HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems); DSRIP (Delivery System Reform Incentive Payment); PAM (Patient Activation Measure); AHRQ (Agency for Healthcare Research and Quality); MHLP (Minnesota Health Literacy Partnership); IHI (Institute for Healthcare Improvement)

Appendix B

Summary of Systematic Reviews (SR)

Citation	**Quality Grade**	**Question**	**Search Strategy**	**Inclusion/ Exclusion Criteria**	**Data Extraction and Analysis**	**Key Findings**	**Usefulness/ Recommendation/ Implications**
Yen & Leasure. (2019). Use and effectiveness of the teach-back method in patient education and health outcomes. Federal Practitioner, 36(6), 284-289. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6590951/	Level II B Quality (systematic review included both quantitative and qualitative studies, no table presented except for the PRISMA chart)	What are the effectiveness of using the teach-back method to understand health education as well as the impact of this method on patients' disease self-management and health outcomes?	In September 2017, Ovid Medline, PubMed, EBSCO, CINAHL and ProQuest were used for article retrieval. Search terms included: teach-back, and terms from the structured PICO(population consisted of patients, who received the teach-back intervention and comparator population of patients who did not received teach-back intervention. Outcome terms were disease self-management, self-care, patient satisfaction, patient perception and acknowledgement).	Inclusion criteria: Patients aged 18 or over with chronic conditions (heart disease, diabetes mellitus, hypertension, asthma etc.), English language articles published in peer-reviewed journals, may include method alone or in combination with other educational strategies, qualitative, randomized controlled trials, quasi-experimental studies, cohort and pretest-posttest studies on the effect of teach-back method, any	Data collected included authors, publication date, journal, purpose, study design, setting, sample and population, intervention and outcomes. Articles were appraised based on the CASP guidelines. The 26 studies consisted of 15 cohort studies, 5 case-control studies, 5 RCTs, and 1 qualitative interview.	The 26 studies resulted finings in five categories: 1. Patient Satisfaction (6 studies found increased in HCAHPS score, all studies showed improved satisfaction with medication education discharge information and health management) 2. Readmission rate improved after the teach back intervention (6 studies found positive impact that teach-back had on 30 days' re- admission; p=0.005 for	The teach-back method was useful and effective in provider-patient communication for the purpose to enhance self-management, improved health outcomes, lower re-admission and increased patient satisfaction.

				clinical settings. Exclusion criteria: Studies that did not use teach-back methods for patient education. Excluded studies that used the teach- back method as an outcome measurement.		patients with heart failure; p=0.02 for those with coronary artery disease and 3 studies did not provide p value). 3. Patient perception of teach-back (patients indicated teach-back was an effective educational method in preventing avoidable hospitalization, recall of health related information). 4. Disease knowledge and management also improved after the intervention. Patient rated the teach- back method better than multimedia educational program and self-care	

						activities program. 5. Effects on HR-QOL (the mean Happiness scores were higher and QOL scores were higher for post- partum (p,0.001) and breast cancer patients (p,0.001) who received teach-back in the health management	

Appendix C (SWOT Analysis)

STRENGTHS +	WEAKNESSES –
Cohesive team All full-time staff with low turnover Nurses with more than two years of direct care experience Organizational culture supports evidence-based intervention. Staff engagement and safe practice are encouraged by management Open inter and intradepartmental communication High function and high rating by CMS All private rooms conducive to learning The project will: Increase safe medication management. Increase medication communication between patients and providers. Improve patient experience. Increase CMS HCAHPS score that leads to increased reimbursement. Improved patient outcomes decrease in readmission. Increase health literacy and self-management.	EMR system Cerner does not have a new medication pop-up alert Nurses must go to separate screens to look up medication side effects Pharmacists not involved in the intervention but as supportive resource staff Nursing staff may be resistant to change despite the benefits of the intervention Increase nursing time to do the medication teaching to patient/ caregiver Nursing staff may perceive these as added tasks on their daily duties The training and implementation will take time and effort from the nursing staff

OPPORTUNITIES +	THREATS –
Potential for higher CMS reimbursement More attractive to quality vendors and healthcare partners More competitive to be the choice of the healthcare facility for local communities	Economic downturn impacting budget cut to hospital Changes in the local demographics that affect the patient census Worsening shortage in the healthcare workforce Expanding of nearby Kaiser Permanente, which has been the top performer Political or regulatory mandates that makes the operation non-viable

Appendix D (Teach back Survey)

Teach-Back Survey

Name or Initial: _____

Work Unit: _____

Check one: First survey: Date: _____

Second survey: Date: _____

Third survey: Date: _____

1. How many years of experience do you have as a direct care nurse?

   0-2 years 3-5 years over 5 years

2. Have you ever had training in the teach-back before?

   Yes no not sure

3. If you have been trained in the teach-back method, has it changed how you communicate medication to your patients?

   Yes no not applicable

4. Do you currently use teach back for medication communication /teaching?

   Yes no

5. If you are currently using teach-back for medication communication/teaching, how often do you use it?

   Rarely Occasionally Always Not applicable

6. If you are not currently using teach-back, what is the most likely reason for it?

   No time No one else use it Patient not interested I don't know

7. On a scale from 1 to 10, how convinced are you that it is important to use teach-back in your medication teaching practice?

   Not at all important **Very Important**

   1 2 3 4 5 6 7 8 9 10

8. On a scale from 1 to 10, how confident are you in using teach-back for medication teaching?

   Not at all confident **Very confident**

   1 2 3 4 5 6 7 8 9 10

Appendix E

Project Name: Teach Back Implementation

	Start Date	End Date	Duration	Progress	Responsibility	Comments
Action Items	09/04/23	11/13/23	70			
Review implementation details	09/04/23	09/04/23	0		Tracy	meet with the team for assignment, timeline, etc
Invite participation to the project	09/04/23	09/09/23	5		Tracy	invite in nurses' lounge and help from nurse educator
Consent and first survey to participants	09/05/23	09/10/23	5	Milestone	Glenn	Send by nurse education, eval and compile by Tracy
Weekly briefing with the team	09/11/23	09/11/23	0		Project team	Encourage participants to join in
PowerPoint and online training module	09/11/23	09/25/23	14	Milestone	Tracy	AHRQ and Teach-back.org module
Weekly briefing with the team	09/18/23	09/18/23	0		Project team	Participants are welcomed to attend
Weekly briefing with the team	09/25/23	09/25/23	0		Project team	Participants are encouraged to attend
Implement teach back + med pamphlet	09/26/23	11/13/23	48		All Participants	provide resources and support
Coaching the use of Teach-Back	09/26/23	10/31/23	35		Champion nurse	Tracy will participate when on site
Weekly team briefing on progress	10/02/23	10/02/23	0		Project team	Participants may join to share progress
Monitor teach-back on med teaching	10/02/23	11/13/23	42		Kim or Anita	At weekly leadership rounds use Teach-back observation tool
Continue weekly briefing on progress	10/09/23	10/09/23	0		Project team	Continue supporting the implementation
Deliver and evaluate second survey	10/09/23	10/09/23	0	Milestone	Glenn	
Continue weekly briefing on progress	10/16/23	11/13/23	28		Project team	Solidify the new practice
Deliver and evaluate third survey	11/06/23	11/10/23	4		Glenn	
Celebrate success of the new practice	11/13/2023	11/13/2023	0	Milestone	All involved	Project team, participants, and administrative leaders

Appendix F (Budget Planner)

Teach-Back Project Budget Planner

Income	Source	Amount
Sponsorship	**Project Lead Employer**	**$1,500**

Expenses	**Source**		
Items	**Project Lead Employer**	**Practicum facility**	**Participants**
Appreciation token Max 45 nurses X $30	$ 1,350		
Time spent on the survey and PowerPoint/ training module.			Participate in volunteer own time.
Surveys Delivery		The internal e-mail system of the facility	
AHRQ and Teach-back online module		Facility unit hardware	Participants' computer
Medication Pamphlet		Donations in kind and Property of the facility	
In-person meeting room		Empty second-floor: Space donation in kind	
Water for in-person meetings (72 bottles)	$32.97		
Bulk snacks for meetings (pretzels /granola bars)	$36.79		
Printing of Teach–Back evaluation forms		Facility Donation in kind	
Total expenses	$1,419.36		

Appendix G (Teach-Back Observational Tool)

Always **Use** Teach-back! Teach-Back Observational Tool

Care Team Member: _____ Date: _____

Observer: _____ Time: _____

Did **the** care team member...	Yes	No	*NIA*	Comments
Use a caring tone of voice and attitude?				
Display comfortable body language, make eye contact, and sit down?				
Use plain language?				
Ask the patient to explain in their own words what they were told to do about: • Signs and symptoms they should call the doctor for? • Key medicines?				
Use non-shaming, open-ended questions?				
Avoid asking questions that can be answered with a yes or no?				
Take responsibility for making sure they were clear?				
Explain and check again if the patient is unable to use teach-back?				
Use reader-friendly print materials to support learning?				
Document use of and patient's response to teach-back?				
Include family members/caregivers if they were present?				

Appendix H (Common Medication Pamphlet /Sheets)

Common Medications Handout

Purpose & Side Effects

Please discuss with your nurse which medications you are currently on, what they are for, and their side effects. This list is for your reference. If you feel that any medication is making you sick or causing you pain, please contact your doctor or nurse immediately. While you are in the hospital, you may also contact a pharmacist at 650.367.5534 during regular business hours.

DRUG CLASS	EXAMPLES (Common Medications)	PURPOSE (Used For)	POTENTIAL SIDE EFFECTS
Acid Reducer 	Omeprazole (Prilosec), Pantoprazole (Protonix), Famotidine (Pepcid), Other:	Reduces stomach acid	Headache, nausea, diarrhea, constipation • **Proton pump inhibitors:** Fractures
Anti-Anxiety 	Alprazolam (Xanax), Lorazepam (Ativan), Buspirone (Buspar), Other:	Relieves anxiety, depression, or nerve pain	Drowsiness, nausea, dry mouth, weakness • **Avoid alcohol** • **Avoid driving or operating machinery**
Antibiotic or Antifungal 	Ciprofloxacin (Cipro), Levofloxacin (Levaquin), Doxycycline, Cephalexin (Keflex), Amoxicillin, Fluconazole (Diflucan), Metronidazole (Flagyl), Azithromycin (Zithromax), Nystatin, Other:	For infections	Diarrhea, nausea, metallic taste • **Metronidazole:** Do not drink alcohol • **Levofloxacin, Ciprofloxacin, and Moxifloxacin:** Please give at least 2 hours before or 6 hours after antacids or other products containing calcium, iron, or zinc (includes dairy products or calcium-fortified juices) • **Doxycycline:** Sunburn

DRUG CLASS	EXAMPLES (Common Medications)	PURPOSE (Used For)	POTENTIAL SIDE EFFECTS
Anticoagulants 	Fondaparinux (Arixtra), Warfarin (Coumadin®), Dabigatran (Pradaxa), Heparin, Enoxaparin (Lovenox), Rivaroxaban (Xarelto), Apixaban (Eliquis), Other:	Blood Thinner Prevent blood clots	Bruising, unusual bleeding, rash, stomach pain • Consult with your pharmacist about taking any drugs over the counter
Anticonvulsant 	Phenytoin (Dilantin), Pregabalin (Lyrica), Gabapentin (Neurontin), Valproic Acid (Depakene), Valproate (Depakote), Lamotrigine (Lamictal), Topiramate (Topamax), Levetiracetam (Keppra), Other.	For seizure control	Drowsiness, dizziness, blurred vision. Constipation
Antidepressant 	Escitalopram (Lexapro), Fluoxetine (Prozac), Citalopram (Celexa), Bupropion (Wellbutrin), Trazodone (Desyrel), Other:	Relieves anxiety, depression, or nerve pain	Drowsiness, dry mouth, blurred vision, constipation • Avoid alcohol
Anti-inflammatory 	Naproxen, Aspirin, Ibuprofen (Motrin), Indomethacin, Ketorolac (Toradol), Other:	Reduce pain, inflammation, redness, swelling	Heartburn, nausea, stomach irritation • Take with food, milk, or antacids
Anti-Nausea 	Ondansetron (Zofran), Promemazine (Phenergan), Metoclopramide (Reglan), Other:	Relieves nausea and vomiting	Drowsiness, dizziness, stomach upset • Report unusual facial or body movements
Antiplatelet 	Aspirin, Clopidogrel (Plavix), Prasugrel (Effient), Dipyridamole (Persantine), Cilostazol (Pletal), Other:	Blood Thinner Prevent blood clots	Rash, unusual bleeding, abdominal pain
Antipsychotic 	Olanzapine (Zyprexa), Ziprasidone (Geodon), Quetiapine (Seroquel), Haloperidol (Haldol), Risperidone (Risperdal), Other:	Hallucinations, disordered thoughts	Involuntary movements, dry mouth, drowsiness

DRUG CLASS	EXAMPLES	PURPOSE	POTENTIAL SIDE EFFECTS
Blood Pressure Medications 	♦mipril (AllB B , ck)pr lol R [Lopressor, Torxol), tosartan 11 dip tCozaarl. A (Nan,i.asc), Valsarta mtOYanl, isln pri . Carved lol (Coreg), 0 ller:	For control of blood pressure	LO, b od pressure, emo ; tired ss, izz n ess, weakness. f eau l m lla ion, visual changes • Co...su'lt wilh jour physici n b fore taking any salt subs tutH or [P0tass um sl.fpplem.ents:
Blood Sugar Control 	Glyburide Metformi • lns un, Glipiz d . (Glur:otrol, (Giyt>uri e), e1:	To prevent high blood s gar or lredit diabetes	Ti em;s, r ed ess, lzzIness. upset stomac
Diuretics (water pills)	Hydrochlorothiazide, Triamterene and Hydrochlorothiazide (Dyazide, Maxide), Furosemide (Lasix), Bumetanide (Bumex), Other:	For flu"d rel>! ,on	v lo<>J pressure, dz iness, frequent nnation
Hea t flat QII re or, FUly hm CIllntrol 	Digoxin, Metoprolol (Lop Toprol), Amiodarone, Dronaderone (Multaq), Diltiazem, Dofetilide (Tikosyn), Sotalol (Betapace), Other:	I prove a r coo Irad ion a d eart rate	.,;;;;-are, dizzi llredness • Cons.tilt ith your ph)sidan before takins any salt substirtufes or l)Dta:ssiurn supplements
Inhalers 	Albuterol (Proventil), Fluticasone (Flovent), Ipratropium (Atrovent), Tiotropium (Spiriva), Budesonide/Formoterol (Symbicort), Other:	F r breathlng difficul1i s	I\ terec bea rate. outh
Laxative 	Docusate (Colace), Milk of Magnesia, Bisacodyl (Dulcolax), Senna (Senokot), Polyethylene Glycol (Miralax), Other:	for co snoaton	Diarrhea. cramps

DRUG CLASS	EXAMPLES (Common/Vaginal name)	PURPOSE (Used For)	POTENTIAL SIDE EFFECTS
Cholesterol Lowering 	Simvastatin (Zocor), Atorvastatin (Lipitor), Pravastatin (Pravachol), Rosuvastatin (Crestor), Other:	For treatment of high cholesterol	Muscle pain, stomach irritation, cramping, gas, loose stool
Mood Stabilizer 	Lithium, Olanzapine (Zyprexa), Valproate (Depakote*), Lamotrigine (Lamical*), Topiramate (Topamax*), Gabapentin (Neurontin*), Other:	Eve s out moon	Headache, drowsi es , dry mout blurred 11St0'1 conslipa·io11 • Lithium: stomach d iscornl art irst, t quent a r0 . Consult with your hy-s lan.
Pain Medication 	dr oco elac,eHl ml pti n (NO(C • v in) Oxyc done (Ox•conti n), H;rdrornorphon• (Di audid), Morp ins, Fenta Sl. Tr made' (Ultran L Ox coclonet ac 1, · p . *i* eri.. et', 0 h .r:	R ,e In	D iness, dry ma h, blur ec .Is n, onst•1• • Avoid idcohol • Avo&d dri't'ing or 11perating machin *ry*
Pain Medication, miscellaneous 	Acetam·rm *en*, othlilf':	Reduce pai	Na isaa, vomi ·ng • Awoio atcohol • •port an• unus;ua l :symptoms such as da U'il , stomach pain, •lkJ..w skin or @JH as 11 oOll ld be a sign ot l lver pr obtel'iliFS
Vitamin• & Mi eral s uppte ment 	Iron, Multivitamins, Prenatal Vitamin, Folic acid, Magnesium, Calcium, Other:	Su erme	Na sea, cisrr e", bloatin g, stomac i. rna n
Other			

Appendix I (Data Measures Variable Table)

Item of the Analysis unit	Brief Description	Data Source	Range of Values /Measure variable	Level of measurement	Statistical test
Population	Participants will be direct care nurses at the MSO unit	The MSO nurse roster identified before sending out invitations to the project	0-45	ratio	NA
Process measure	The implementation of the teach-back method performed by the participants at each new medication teaching and how well it is being delivered	Teach-back survey. Compiled right before the teach-back training; then at the sixth and tenth week of the project	Participants' communication styles, level of confidence in, and conviction in the teach-back method Patients' ability or level of readiness to learn	Nominal and ordinal	Paired t-test
Process measure	Tracking the accurate and consistent use of the teach-back technique by the participants for a desirable result	The teach-back evaluation tool. To be completed during the weekly leadership round.	Subjective interpretation of the participants' performance by different leader observers	Nominal (dichotomous)	Mean or median
Outcome measure	The result or impact on patients from the teach-back implementation	The comparison of the teach-back surveys from the baseline to the third or final survey. CMS HCAPHS rating	Pt's environmental and physiological issues, unrelated to the quality or consistency of the teach-back technique use, can impact the outcome.	Nominal and ordinal	Paired t-test
Balance measure	Unintended consequences from the project implementation within the system (results can be positive or negative)	Occurs during or after the project implementation	Use of teach-back delay noon hour discharge	Currently unknown	Currently unknown

Appendix J: Data

Table J1

Demographic Data

subject	gender	years as RN
1	2	3 to 5
2	1	3 to 5
3	2	>5
4	2	>5
5	1	>5
6	2	>5
7	1	2 yr
8	2	>5

Note. Gender: 1 = male, 2 = female

Table J2

Data of Teach-back survey (TBS)

name	work unit	date	q1	q2	q3	q4	q5	q6	q7	q8	survey
AQ	MSO	10/24/2023	2	1	1	1	2	3	10	7	1
CL	MSO	10/26/2023	2	1	1	1	3	3	9	9	1
CM	MSO	10/24/2023	3	1	1	1	2	1	10	7	1
LS	MSO	10/24/2023	3	3	3	2	4	1	8	7	1
MB	MSO	10/27/2023	3	3	3	1	2	4	9	7	1
MI	MSO	10/31/2023	3	2	3	1	3	NA	10	10	1
NC	MSO	10/24/2023	1	1	1	2	2	3	10	7	1
PQ	MSO	10/27/2023	3	3	1	1	2	4	10	8	1
AQ	MSO	11/28/2023	2	1	1	1	2	1	10	8	2
CL	MSO	11/28/2023	2	1	1	1	3	3	9	8	2
CM	MSO	11/28/2023	3	1	1	1	2	1	10	10	2
LS	MSO	12/6/2023	3	1	1	1	2	3	9	8	2
MB	MSO	12/14/2023	3	1	1	1	2	1	9	5	2
MI	MSO	11/28/2023	3	1	1	1	3	NA	10	10	2
NC	MSO	12/8/2024	1	1	1	1	2	3	10	7	2
PQ	MSO	12/6/2023	3	1	1	1	2	1	9	8	2
AQ	MSO	1/15/2024	2	1	1	1	2	3	10	7	3
CL	MSO	1/4/2024	2	1	1	1	3	1	10	8	3
CM	MSO	1/4/2024	3	1	1	1	2	1	9	9	3
LS	MSO	1/9/2024	3	1	1	1	2	1	10	10	3
MB	MSO	1/16/2024	3	1	1	1	2	4	9	9	3
MI	MSO	1/4/2024	3	1	1	1	3	NA	10	10	3
NC	MSO	1/10/2024	1	1	1	1	2	3	10	9	3
PQ	MSO	1/5/2024	3	1	1	1	3	1	10	9	3

Note. NA = not applicable.

Table J3

Coding for TBS Data

Variable	Description	Data coding
name	Name or initial	
work unit	Work unit	
date	date of the survey	
q1	How many years of experience do you have as a direct care nurse?	1 = 0-2 years, 2 = 3-5 years, 3 = over 5 years
q2	Have you ever had training in the teach-back before?	1 = yes, 2 = no, 3 = not sure
q3	If you have been trained in the teach-back method, has it changed how you communicate medication to your patients?	1 = yes, 2 = no, 3 = not applicable
q4	Do you currently use teach-back for medication communication/teaching?	1 = yes, 2 = no
q5	If you are currently using teach-back for medication communication/teaching, how often do you use it?	1 = rarely, 2 = occasionally, 3 = always, 4 = not applicable
q6	If you are not currently using teach-back, what is the most likely reason for it?	1 = no time, 2 = no one else use it, 3 = patient not interested, 4 = I don't know
q7	On a scale from 1 to 10, how convinced are you that it is important to use teach-back in your medication teaching practice?	1-10 (1 = not at all important, 10 = very important)
q8	On a scale from 1 to 10, how confident are you in using teach-back for medication teaching?	1-10 (1 = not at all confident, 10 = very confident)
survey	The first, second, or third survey	

Table J4

Data of Teach-back Observation Tool (TBOT)

subject	member	observer	date	time	q1	q2	q3	q4	q5	q6	q7	q8	q9	q10	q11	q12	survey
1	MI	Team lead	10/28/2023	12:40	1	1	1	1	1	1	1	99	1	0	99	99	1
2	CM	CL	1/16/2024	9:10	1	1	1	1	1	1	1	1	0	0	99	99	3
3	AQ	CL	1/17/2024	8:40	1	1	1	1	1	0	1	1	0	0	0	99	3
4	NC	CL	1/17/2024	10:50	1	1	1	1	1	1	1	1	1	1	0	99	3

Table J5

Coding for TBOT Data

Variable	Description	Data coding
member	care team member	
observer	observer	
date	date	
time	time	
Did the care team member…		
q1	use a caring tone of voice and attitude?	1 = yes, 0 = no, na = 99
q2	display comfortable body language, make eye contact, and sit down?	1 = yes, 0 = no, na = 99
q3	use plain language?	1 = yes, 0 = no, na = 99
q4	ask the patient to explain in their own words what they were told to do about signs and systems they should call the doctor for?	1 = yes, 0 = no, na = 99
q5	ask the patient to explain in their own words what they were told to do about key medications?	1 = yes, 0 = no, na = 99
q6	use non-shaming, open-ended questions?	1 = yes, 0 = no, na = 99
q7	avoid asking questions that can be answered with a yes or no?	1 = yes, 0 = no, na = 99
q8	take responsibility for making sure they were clear?	1 = yes, 0 = no, na = 99
q9	explain and check again if the patient is unable to use teach-back?	1 = yes, 0 = no, na = 99
q10	use reader-friendly print materials to support learning?	1 = yes, 0 = no, na = 99
q11	document use of and patient's response to teach-back?	1 = yes, 0 = no, na = 99
q12	include family members/caregivers if they were present?	1 = yes, 0 = no, na = 99