

Deprescribing Medications in Comfort Care Patients in the Intensive Care Unit

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Abstract

With advancements in medical care, life expectancy has increased in the United States, leading to more patients needing outpatient or inpatient hospice, or palliative care services. While in hospice care, performing a medication reconciliation to determine which medications benefit the patient and should be continued versus those that can be deprescribed is essential. Providers often overlook the deprescribing of medications in the comfort care population in the Intensive Care Unit (ICU). This leads to polypharmacy, a decreased quality of life for the patient, and an increased time burden on the nurses. This Quality Improvement project aimed to educate ICU nurses to remind the provider to complete a medication reconciliation and deprescribe non-comfort care medications on patients transitioning to comfort care. Education was provided to the nursing staff using a screenshot of the current comfort care order set in the Electronic Medical Record (EMR) and a modification of an evidenced-based tool that the nurse presents in daily rounds. Data was collected from the EMR and recorded in a spreadsheet created in Excel. Data from the post-implementation period revealed a 40% increase in medication reconciliations completed and about a 70% increase in non-comfort care medications deprescribed in patients who transitioned to comfort care. In conclusion, further research needs to be conducted on this topic. Additionally, this project benefited the unit and could be replicated in similar units to ensure all patients transitioning to comfort care have the best quality of life for their last few days.

Keywords: polypharmacy; deprescribing; intensive care unit (ICU); comfort care

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Section I. Introduction

Background

With current advancements in modern medicine, such as improved technology and the creation of new medications, life expectancy is increasing (Low et al., 2021). Low et al. stated that as people live longer, they have an increased chance of having multiple health issues, often resulting in the patient taking at least five medications, known as polypharmacy. Over the last two decades, polypharmacy has increased substantially (Low et al., 2021). According to Le et al. (2021), more than 65% of adults take at least five prescription medications daily. Additionally, as people live longer, more hospice and palliative care patients will need inpatient and outpatient services (Low et al., 2021). With an increased number of prescriptions, and an increased number of patients in the hospital transitioning to hospice or palliative care, the medication reconciliation process becomes crucial (Thompson, 2019). According to Thompson, medication reconciliation involves gathering a definitive list of all the medications a patient is on and the reasons they are taking these medications. Additionally, a medication reconciliation involves determining which medications will continue to benefit the patient versus which medications are appropriate to be deprescribed. Medication reconciliations can reduce an unnecessary pill burden in hospice and palliative care patients by supporting the deprescribing of excess medications, such as those used for primary and secondary prevention (Thompson, 2019).

Organizational Needs Statement

The organization where this Doctor of Nursing Practice (DNP) project occurred is a non-profit healthcare system in the Piedmont region with over 40 hospitals serving patients covering the entire Southeast region (██████████, 2022a). According to the Chief Executive Officer, the company and its employees strive to “improve health, elevate hope, and advance healing for

all.” The company aims to provide its patients with the highest quality of care by increasing patient satisfaction and safety to ensure they have the best outcomes. In addition, through its partnership with a local medical school, the organization has remained a leader in evidence-based practice ([REDACTED], 2022a).

Located in an urban city, the project partner is at the only level-one trauma center in the area, with the next closest being in the Triad region (North Carolina Department of Health and Human Services, 2019). The hospital staffs’ employees in 18 specialty areas, allowing multiple pediatric and adult Intensive Care Units (ICU) ([REDACTED], 2022b). One of the specialty adult ICUs, referred to as "ICU A" throughout the paper, contains 29 beds and is the site for this Doctor of Nursing Practice (DNP) project.

Patients' diagnoses are often incompatible with their desired quality of life in ICU A. For example, the quality of life for the patient can decrease due to an acute life-threatening illness, such as a gunshot wound, small bowel obstruction, or exacerbating chronic life-limiting diseases like esophageal cancer (Isaac & Curtis, 2020). As a result, the care of these patients often shifts from curative to comfort as they approach death. This shift toward hospice care in ICU A is commonly called comfort care. As patients transition to comfort care at this project site, the provider initiates an order set or power plan built into the hospital's Electronic Medical Record (EMR). This power plan contains a list of pre-selected orders which the provider modifies and initiates to address many vital aspects of care. These aspects of care include changing the patient's resuscitation status to "Do Not Resuscitate," discontinuing unnecessary blood draws, vital signs, or physical therapy, prescribing intravenous medications for pain, nausea, and anxiety, and ordering a bereavement basket for the family members. However, one essential component that this comfort care order set does not address is performing a medication

reconciliation on previous medications prescribed to the patient during this hospitalization. The lack of medication reconciliations being completed results in time-consuming discussions between nurses and providers for clarification and ongoing patient costs.

Successfully improving the process of deprescribing medications in comfort care patients in ICU A helps the hospital meet the benchmarks of the Triple Aim, which the Institute for Healthcare Improvement (IHI) created to help healthcare systems enhance their performance (Institute for Healthcare Improvement, 2022b). First, nurses can improve the quality of the patients' experience by decreasing phone calls to the provider to receive clarification on which medications are appropriate to give to meet the first aim created by the IHI. Second, studies show that reducing the number of drugs a patient takes at end-of-life can help improve their quality of life, which would meet the IHI's second aim of improving the populations health (Thompson, 2019). Lastly, deprescribing would meet the third aim of reducing the per capita cost of healthcare by providing the patient with fewer medications (Institute for Healthcare Improvement, 2022b).

Unfortunately, ICU A had no specific pre-implementation data points, such as percentages on completed medication reconciliations when providers initiated the comfort care order set or how medication reconciliation affected the patient's or hospital's cost. However, upon admission to this hospital, medication reconciliation is done within 24 hours by the patient's nurse, pharmacist, or provider. Healthy North Carolina 2030 also does not address polypharmacy or medication reconciliation; however, it predicts that life expectancy will increase from 77.6 years in 2018 to 82 years in 2030 (North Carolina Institute of Medicine, 2020). With this increase in life expectancy, providers can anticipate an increase in the number of medications per patient (Low et al., 2021). According to Healthy People 2030 0A-02, one of

the goals of the United States is to decrease the number of adults who use inappropriate medications from 15.9% to 11.2%; however, there are no further data points on how to accomplish this goal (United States Department of Health and Human Services, 2022). The World Health Organization (2022) mentions that approximately 40 million people need palliative care services annually, and only about 17% receive them. Some of their goals are to ensure adequate resources for palliative care in all health systems and develop tools for healthcare professionals to use in palliative care, which could help deprescribe medications in this population (World Health Organization, 2022).

Problem Statement

The providers often overlook the deprescribing of medications in the comfort care population in the ICU. Nevertheless, research suggests that polypharmacy can negatively affect the quality of life and patient satisfaction in those with a life-limiting illness. Therefore, deprescribing medications is a crucial issue to resolve as it can decrease costs for the patient and hospital and decrease the time burden on the nursing staff.

Purpose Statement

The purpose of this DNP project was to educate nurses that no automated reminder populates on the EMR when the comfort care order set is initiated in ICU A, therefore the provider is not prompted to perform a medication reconciliation. When the "A-N rounding tool bundle" is presented by the registered nurse in daily rounds, this helped to trigger the provider to complete a medication reconciliation on the patient. In turn, this encouraged the deprescribing of medications to meet the components of the triple aim and improve patient outcomes.

Section II. Evidence

Literature Review

This literature review aimed to learn more about excess medications' effects on patients receiving comfort care in the Intensive Care Unit (ICU). The search strategy was related to the proposed intervention plan of deprescribing medications. In this literature review, the Doctor of Nursing Practice (DNP) student searched for articles that met this paper's inclusion and exclusion criteria. In this initial step, the DNP student briefly read the abstract of each article to decide if the report was relevant to this DNP project. After the DNP student completed the initial search, they further reviewed the papers kept by reading the entire article to determine whether they were still relevant to this DNP project. Once the articles were considered appropriate, they were added to the Literature Matrix, as seen in Appendix A.

For this literature review, the DNP student initially searched for the hospital's nursing policies on Lippincott to determine what interventions were already in place at the project site for patients on comfort care. Using the Medical Subject Headings (MeSH) terms "comfort care," and without limitations, they found six articles and kept three. These three articles were explicitly related to the clinical question, the project site, and the correct population. After further reviewing the three articles initially kept, only one, with an evidence level of five, was saved and placed in the literature matrix. The article included met the criteria related to the clinical question and had the correct intervention. The five pieces excluded did not have the appropriate intervention or outcome.

Next, the DNP student explored UpToDate to determine the standard for evidence-based practice related to comfort care and the ICU. This time, the MeSH terms "Comfort care AND ICU" and "Palliative care AND ICU" were used in the literature search. In addition, articles were

limited to those about the adult population. This criterion found 21 articles that the DNP student narrowed down to four. The inclusion criteria for this search were articles that were related to the clinical question and had the appropriate population. Once these four articles were reviewed in-depth, they were all kept and placed in the literature matrix, as the inclusion criteria still applied. One of the articles was level one evidence, two were level five, and the last was level seven evidence.

After gathering basic information about the project site and this DNP project was determined to be relevant through UpToDate, the DNP student conducted the following step in this literature review using East Carolina University's (ECU) online Laupus Library. First, multiple nursing-specific databases, including PubMed, ProQuest, and Cumulative Index to Nursing and Allied Health Literature (CINHAL), were searched with various combinations of MeSH terms. These key terms included "deprescribing medications," "polypharmacy," "medication reconciliation," "comfort care patients," "palliative care," "hospice care," and "deprescribing tools." The DNP student placed a limit of five years on all searches, and a few also had limits of full text, journal review, or systematic review. With these limitations in place, initially, 22,385 articles were found, and the DNP student kept 32 articles. Initial inclusion criteria were articles with the correct intervention and those related to the clinical question. Initial exclusion criteria were articles with the wrong population, intervention, outcome, or setting. Next, the 27 articles were read in depth to determine whether they continued to meet the inclusion criteria. Only 14 articles were related to the clinical question, had appropriate interventions or outcomes, and were the correct population. These 14 articles, which included evidence levels one through seven, were interpreted and added to the literature matrix.

Current State of Knowledge

The current literature found much information on the importance of deprescribing medications in the primary care setting for older adults. However, there was not much literature related explicitly to deprescribing in the inpatient setting of the ICU or for comfort care patients (Le et al., 2021). On the contrary, overwhelming amounts of literature suggested that when deprescribing medications for a comfort care patient, there is often hesitation from the provider, the patient, and the family members (Thompson, 2019). Thompson noted that this hesitancy stems from the feeling that when physicians deprescribe medications, they give up hope. Additionally, there is also hesitancy when the patient or family fears change or when the provider needs to clarify which drugs should be deprescribed (Thompson, 2019). Furthermore, research showed that the lack of communication between interdisciplinary teams often results in provider reluctance to deprescribe medications (Paque et al., 2018). Providers collaborating with pharmacists and other internists helped reduce the prescribing of inappropriate medications and helped to deprescribe medications that were no longer essential (Paque et al., 2018).

The literature stated that providers should follow an algorithm when deprescribing medications in the comfort care population to ensure consistency (Miller-Smith et al., 2020). The Oncological Palliative (OncPal) and Screening Tool of Older Persons' Prescriptions in Frail adults with a limited life expectancy (STOPPFrail) are two tools with minimal outcome differences, which can be used for assistance when deprescribing medications in the comfort care population (McNeill et al., 2021). Best practice states that medications taken for primary or secondary prevention, such as high blood pressure, lowering cholesterol, or regulating blood sugar, are non-essential and should be deprescribed (Harman et al., 2021). Furthermore, Harman et al. noted that medications not considered an appropriate route for the comfort care patient

should also be deprescribed. For example, if a dying patient cannot swallow pills and does not have intravenous access or a feeding tube, all oral medications are inappropriate and should be deprescribed (Harman et al., 2021).

Current Approaches to Solving Population Problem(s)

Death often happens in the ICU, so bedside nurses and the medical team must provide efficient and competent palliative care to give the subject the best quality of life (Harman et al., 2021). According to the literature, to help successfully facilitate the deprescribing of medications in the comfort care population in the ICU, one effective intervention is to use the Electronic Medical Record (EMR) (Low et al., 2021). Low et al. stated that within the EMR, reminders can populate for the provider to perform medication reconciliation by flagging certain medications which are appropriate for discontinuation. Collaborating with the interdisciplinary team and having the pharmacist present on daily rounds to lead the medication reconciliation is also an effective intervention (Paque et al., 2018). Engaging the palliative representative, the intensivist, a pharmacist, the patient, and their family in a combined discussion allows for shared decision-making on which medications should be appropriately deprescribed (Le et al., 2021).

A third intervention the literature suggests using is the OncPal or the STOPPFrail deprescribing tools as guidelines for every comfort care patient in the ICU (McNeill et al., 2021). However, the creator of the OncPal tool intended its use to be for patients with cancer, which does not represent every comfort care patient in the STICU (Thompson, 2019). Additionally, the inventor of the STOPPFrail tool made it specifically for older adults, which does not describe every patient on comfort care in the ICU (McNeill et al., 2021).

A final intervention that can help facilitate the deprescribing of medications in a comfort care patient is to obtain a palliative care consult (Miller-Smith et al., 2020). Miller-Smith et al.

stated that consulting a palliative care specialist can help increase communication between the family and other providers, which can help alleviate the concerns of the subject and their family about deprescribing medications. In ICU A, after placing a palliative care consult order in the EMR, it is expected for a provider from ICU A to message the on-duty palliative care representative. In this secure message through the Halo application, there is disclosure regarding details of the patient's current condition, history of their hospitalization, and reasons for consultation. Once this message is received, the palliative care representative will review the patient's chart and assess the patient and their family. Next, the palliative care representative will consult with a provider from the ICU A team to discuss the new care plan. Upon completion of this discussion, a family care conference, often involving the palliative representative, ICU A provider, bedside nurse, and the patient's family, is set up to finalize care goals. Additionally, if the family decides to transition the patient to comfort care, the ICU A provider and the palliative care representative decide who will add and remove orders.

Evidence to Support the Intervention

The partnering organization for this DNP project had recently switched from Cerner's EMR charting system to EPIC before implementation began. When initiating the comfort care order set in Cerner, there were no reminders to perform medication reconciliation. However, in the new charting system EPIC, when the provider puts in the comfort care order set, there is a box to click that states, "Review current medication orders AND ensure sedatives and/or paralytics are weaned or discontinued as appropriate." After clicking the box, prompts appear for the provider to choose which specific comfort care medications they want to order, such as atropine, morphine, and lorazepam. Unfortunately, no prompt populates for the provider to perform medication reconciliation on the previously prescribed drugs. Given that this was not

part of the providers' practice in the previous charting system, the best intervention is to educate bedside nursing staff about the change in EPIC (Low et al., 2021). Unfortunately, it is easy to overlook this built-in reminder, as the section combines the option to prescribe new medications.

For this DNP Project, the designated project site champions included two Clinical Nurse Specialists (CNS) and one Doctor of Pharmacy, who were members of the ICU A staff. This collaborative team agreed that for this intervention, education for the registered nurses included showing them a word document, shown in Appendix C, which contains a screenshot of the new order set in the EMR and highlights the required box that needs to be checked by the provider (Low et al., 2021). Specifics in this education for the nurses included that even though this box gets checked, the provider still needs to complete medication reconciliation. In addition, educating the nurses to remind the provider and pharmacist about this change in the charting system during multidisciplinary rounds helped them remember to reconcile the patient's current medications (Paque et al., 2018).

Evidence-Based Practice Framework

The execution of this DNP project used the Plan-Do-Study-Act (PDSA) cycle, which the Institute for Health Improvement (IHI) created to assess rapid change on a small scale (Institute for Healthcare Improvement, 2022a). The PDSA cycle acts as a framework to guide improvement in the desired process, which in this project is deprescribing medications in the comfort care population in the ICU. According to the IHI (2022a), it is essential to test changes to see how much improvement there is, the effects on quality measures, and evaluate costs. Furthermore, interventions that were ineffective in deprescribing medications in comfort care patients in ICU A were quickly changed, as PDSA cycles are effective for initiating rapid change.

Identification of the Framework

This DNP project followed the four steps of the PDSA framework, shown in Appendix B, on a large and small scale. Determining the objective and creating a plan to test the change is step one or the "plan" step of the PDSA cycle (Institute for Healthcare Improvement, 2022a). The plan was created for this DNP project while enrolled in ECU's Nursing 8269 course and Nursing 8272 course. A literature review was conducted during these two courses to determine an appropriate DNP project and an evidence-based intervention to fix the problem. The second step of the PDSA cycle, also known as the "do" step, was completed in the Fall of 2023 while in the Nursing 8274 course (Institute for Healthcare Improvement, 2022a). In this step, the DNP student implemented the project's chosen intervention. Once the project was implemented in Spring 2023 while enrolled in Nursing 8277, the results from the implementation were studied and analyzed to determine if the intervention was effective, which is step three of the PDSA (Institute for Healthcare Improvement, 2022a). Based on the results, this project was acted upon and changed to increase its effectiveness and improve the number of medication reconciliations used, step four of the PDSA (Institute for Healthcare Improvement, 2022a). Additionally, the completion of four smaller-scale PDSA cycles ensued every four weeks of this DNP project during the pre-, intra-, and post-implementation phases to provide rapid change. During each PDSA cycle, the project site champions met to evaluate any hindrances to achieving this DNP project's goals and arrange implementation modifications.

Ethical Consideration & Protection of Human Subjects

One ethical consideration in this DNP project was considering the subjects and their families, who are vulnerable when deciding to enter comfort care. To create the most equality and equity in the target population, providers explained the comfort care process entirely to the

patient and the family during the family care conference. This discussion helps bridge the gaps in understanding and increases trust between the providers and the subjects while setting appropriate expectations. Educating the patients and their families on why primary and secondary prevention medications are non-essential in this stage of life helps them be less reluctant to stop taking them. Explaining that the medical team is not discontinuing care but instead attempting to give the patient their best quality of life helps to increase trust. This DNP project caused no potential harm as it did not directly involve human subjects and did not take advantage of this target population, as the provider obtained consent before transitioning to comfort care.

There was the completion of the "Social and Behavioral Responsible Conduct of Research" basic course and refresher course on the Collaborative Institutional Training Initiative (CITI) website to prepare for formal approval of this DNP project (Collaborative Institutional Training Initiative Program, n.d.). This CITI module helped its users learn more about the Institutional Review Board (IRB) and its role in the DNP approval process. IRB is based on the Belmont Report and ensures protection for the human subjects involved in the DNP project (██████████, 2022c). This protection is achieved by providing privacy and ensuring that this DNP project holds ethical principles to the highest standard (██████████, 2022c).

Additionally, for this formal process, an E-pirate account through ECU was created for IRB.

This organization required all DNP projects to undergo their IRB process before implementing the project. For the hospital's IRB process, it was a requirement to obtain approval from their DNP council first to receive a Letter of Support. Once the organization approved this project, the DNP student turned the completed "Quality self-certification" paper into ECU. This certification was reviewed and approved by the designated faculty. After completing these steps,

this same form was completed and submitted through ECU's IRB using an online application. Next, ECU determined if this project met the requirements for a quality improvement project or not. After approval from ECU's IRB deemed this project quality improvement, submission for creating a Wake Forest email address occurred. Then, there was a submission of the Quality Improvement learning module through the organization, the "Data management" CITI module, and participating school of medicines "Clinical Research Study Staff Test" modules through a designated portal. Next, a copy of these learning modules, the letter of support, a current resume, and ECU's IRB approval were submitted through the Wake Forest School of Medicine electronic IRB portal to authorize this DNP project. Once formally approved, implementation proceeds at this project site.

Section III. Project Design

Project Site and Population

Intensive Care Unit (ICU) A, which is a specialty ICU in a hospital in the piedmont region, served as the project site where implementation occurred for this Doctor of Nursing Practice (DNP) project. The leadership team in this unit consisted of one manager, four nursing supervisors, two Clinical Nurse Specialists (CNS), and two educators. With optimal staffing on this unit, each 12-hour shift should have at least two attending providers, one trauma chief, four medical residents, two Advanced Practice Providers (APP), two pharmacists, 16 bedside Registered Nurses (RN), two Licensed Practice Nurses (LPN), and one guest relations specialist. Usually, most of the staff changes each day, as schedules rotate each week. Additionally, some extra collaborators help care for the patients in ICU A, including specialized services consulted, such as palliative care or geriatrics.

In ICU A, it was highly suggestive that the bedside RN was present to participate in daily rounds and scheduled family care conference meetings. Therefore, the target population for this DNP project was the bedside RN. One potential barrier to targeting this population included the ability to educate the entire nursing staff, as there are 91 RNs employed on the unit. Additionally, among these 91 RNs employed, some staff members only worked part-time or as needed, hindering the ability to educate the entire staff. Another potential barrier to targeting this population was that the bedside nurse often has a heavy patient load, so the RN may only sometimes be able to be present during daily rounds or in the family care conference. Lastly, the high staff turnover rates were a third potential hurdle to educating all the RNs on the unit. Two potential facilitators of this DNP project were the project site champions, which included two staffed CNSs, and the pharmacist. Education of project site champions was imperative as they

also participated in daily rounds. In addition, the ICU A leadership team members were potential facilitators as they announced education updates to the entire nursing staff in the daily huddle.

Description of the Setting

The hospital in which this DNP project occurred is a non-profit healthcare organization, and ICU A, which was the setting for this DNP project, consisted of 29 beds. This unit specializes in caring for two patient populations: surgical and trauma. The surgical patients on this unit include but are not limited to liver and kidney transplants, abdominal surgeries, head and neck cancers, hepatobiliary cases, and general emergency surgeries. On the other hand, the trauma patients on this unit include but are not limited to gunshot wounds, car wrecks, boating accidents, motorcycle crashes, falls, and all geriatric traumas.

Description of the Population

The population of this DNP project was the 91 RNs in ICU A who took care of the patients at the bedside, which included staff nurses, nursing supervisors, and nurse educators. This unit also received RNs who floated to various units when staffing numbers were low. However, these float nurses were not explicitly trained with this education as they were not a part of the permanent ICU A staff. However, they may have received it in the daily huddle. Even though the providers added or discontinued orders, the bedside nurses worked closely with them during rounds on each shift. Interdisciplinary rounds occurred once in the morning, afternoon, and night. During these rounds, the bedside nurse presented the "A-N rounding tool bundle," as seen in Appendix E, and any other concerns the nurse may have.

Project Team

This DNP project team involved four members, including the DNP student and the project site champions, comprising two CNSs and one Doctor of Pharmacy. The two CNSs in

ICU A assisted with data collection for this DNP project, as at least one of these two individuals participated in daily rounds Monday through Friday. The data gathered was placed into an accessible excel document called the data collection tool. During rounds, the two CNS site champions also helped remind the providers to perform a medication reconciliation when initiating the comfort care order set. In addition, the Doctorly prepared Pharmacist was the mentor for the school of medicines Institutional Review Board application for this DNP project. The pharmacist also participated in daily rounds when scheduled and helped remind the providers to perform a medication reconciliation when initiating comfort care orders. Lastly, the pharmacist educated her fellow Pharmacist colleagues on this DNP project so that they could encourage deprescribing during their rotation in daily rounds.

Project Goals and Outcome Measures

The primary goals of this project were to increase the number of medication reconciliations completed pre-transition to comfort care by 10% and increase the compliance of non-comfort care medications deprescribed post-transition to comfort care to 50% of applicable patients (i.e., Insulin, Beta Blockers). It was essential to have pre-implementation data, as there was no previous data for this project in ICU A since no one had ever studied it. Therefore, the pre-implementation data was compared to the post-implementation data to determine if the education was adequate.

Description of the Methods and Measurement

As stated above, the methods used to help meet the project goals and outcome measures were a few different tools that were created and modified. Initially, the "A-N rounding tool bundle," which is an evidence-based guide which the bedside nurse presents in daily multidisciplinary rounds in ICU A to help with ICU liberation for critically ill patients, was

altered in Excel to include a section regarding comfort care. The addition of this section was in response to the palliative care screening section in the current tool. In the current palliative care screening section of the rounding tool, there was a QR code the RN could scan, which generated the palliative care screening tool. This screening tool allowed the RN to answer questions about the patient to determine whether they were appropriate for a palliative care consult based on their status. If the patient was deemed appropriate for a palliative care consult, the nurse checked the "yes" box on the "A-N rounding tool bundle," and the nurse moved on to the comfort care section. Next, the nurse checks "yes" or "no" if the patient has comfort care orders. If "yes" is checked, these results were reported in rounds when the nurse presented the "A-N rounding tool bundle." The act of saying that comfort care orders are in helped to remind the provider to deprescribe any unnecessary medications remaining on the Medication Administration Record (MAR). Next, the DNP student created an education sheet using Microsoft Word that was presented to the RNs on the unit to make them aware of this new change. This education sheet contained three bullet points on why deprescribing medications in comfort care patients in ICU A are essential, a screenshot of the new order set in EPIC, and two bullet points to help facilitate this change. In addition, the DNP student used a blank roster that the unit educators had already created to obtain the RN's signature after education. Lastly, using Adobe Connect, the DNP student placed an educational flyer in the break room, bathrooms, and the central staff office. This flyer aimed to catch the RNs and other ICU A staff's attention and give them a brief overview of the importance of deprescribing medications in the comfort care for patients in the ICU.

One measurement tool used to determine if this project had achieved its goals is the Data Collection Tool shown in Appendix F. This tool was created using Excel and records pertinent

information while reviewing patients' charts on comfort care. The DNP student used this tool to gather information, such as the number of medications on the MAR in comfort care patients, during pre- and post-implementation periods. After collecting all the data, the DNP student analyzed whether they achieved the project goals.

Discussion of the Data Collection Process

The partnering hospital's internal network, Encompass, allowed its employees access to search through patients' medical records using their assigned number or name and birthdate. Once a patient in ICU A was identified as a potential candidate to transition to comfort care, there was a complete review of their chart through Encompass. Each new patient encounter added to the Excel document, as shown in Appendix F, was numbered consecutively based on the data collection date. In addition, notes were made in the excel tool if this encounter was before or after the ICU A staff education about this DNP project. Next, the DNP student reviewed the MAR to determine if medication reconciliation occurred after initiating the comfort care order set. Additionally, they reviewed the chart to determine if non-comfort care medications were deprescribed in this medication reconciliation. Collection of pre-implantation data occurred from July through August 2022, and post-implantation data from October through December 2022.

Implementation Plan

This DNP project was implemented in September 2022 using a copy of the education document seen in Appendix C and Appendix E. This educational material was announced in the morning huddle and throughout the month, with in-person education sessions for the registered nurses staffed that day. In addition, there was the utilization of a unit roster of the current staff to ensure there was education provided for every RN on the unit. Additionally, the DNP student

placed the flyer shown in Appendix D in various areas throughout the unit, including the bathroom, break room, and central staff office, called the "fishbowl."

Timeline

The timeline of this DNP project, as shown in Appendix G, ranged from Spring 2022 through Spring 2023. In the Spring and Summer of 2022, the DNP student performed a literature review to determine the best evidence-based intervention for this DNP project and project site. Pre-implementation data was collected from July through August 2022 once formal approval from the East Carolina University Institutional Review Board and hospitals affiliated school of medicine Institutional Review Board was granted. Implementation of the specific education related to this DNP project was provided to the entire nursing staff using the specific tools shown in Appendix C, D, and E in September 2022. The DNP student collected post-implementation data from October through December 2022. Analyzation of the data occurred in the spring of 2023, and the DNP student disseminated this data to East Carolina University and ICU A's unit-based shared governance.

Section IV. Results and Findings

Results

Overall, this Doctor of Nursing Practice (DNP) project effectively deprescribed medications in comfort care patients in the Intensive Care Unit (ICU), as affirmed by the analysis of the results. The overall sample size of this DNP project was 21 patient encounters. The initial percentage, included in both goals, was determined based on the analysis of the results from the seven patient encounters in the pre-implementation period. However, the final percentages did not include the one patient encountered during the implementation period. Therefore, to compute the percentages included in both goals for the post-implementation period, there was a review of 13 patient encounters.

Outcomes Data

The first goal of this DNP project was to increase the number of medication reconciliations completed pre-transition to comfort care by 10%. As a result, the number of medication reconciliations completed pre-transition to comfort care increased from 42.86% in the pre-implementation period to 92% during the post-implementation period. The second goal was to increase the compliance of non-comfort care medications deprescribed post-transition to comfort care to 50% of applicable patients. As a result, the compliance of non-comfort care medications deprescribed post-transition to comfort care increased from 28.57% in the pre-implementation period to 100% during the post-implementation period. As shown in the graph in Appendix H, the data points show the meeting of both goals.

Discussion of Major Findings

While addressing limitations noted at each Plan-Do-Study-Act (PDSA) cycle, it became clear that the providers did demonstrate the same hesitancy that the literature indicated on

deprescribing medications in comfort care as they needed more clarity on which medications they should prescribe. An example to support this statement is that there were unclear guidelines on when to stop antibiotics in comfort care. Some providers perceived continuing antibiotics at the end of life as fruitless, and others felt as if this could aid comfort to prevent further infection. Additionally, the literature supported the findings of this DNP project that involving interdisciplinary teams, such as pharmacists and other internists, such as palliative care, helps ensure the completion of medication reconciliation when transitioning to comfort care. Likewise, the deprescribing of medications for primary and secondary prevention was consistent with the findings of this DNP project and the literature, as medications such as aspirin, metoprolol, and pantoprazole were deprescribed. Alternatively, to the literature, the results of this DNP project did not support that medications were not deprescribed due to reluctance to give up hope on the patients, as the providers in ICU A often discussed this process with the family members in detail before making changes to the plan of care. Lastly, the literature suggested that it is best practice to use the OncPal or STOPPfrail tools when deprescribing medications, which was different from the findings of this DNP project, as the pharmacists or providers did not use these to aid in deprescribing. In addition, neither of these tools is reliable for every patient who transitioned to comfort care in ICU A, as OncPal is only appropriate for cancer patients and STOPPfrail is only for older adult patients.

Section V. Interpretation and Implications

Costs and Resource Management

If the organization where completion of this Doctoral of Nursing Project (DNP) project occurred were to pay someone to replicate this study, numerous items would play into the budget as shown in Appendix I. The costs of this DNP project included paying an employee their previously determined hourly rate for the time spent on this project outside of their previously scheduled shifts, which included about 175 total hours in research, development, and collaboration. This DNP project also has about 150 hours of implementation, development, revisions, and analysis. There would also be a cost to the unit for supplies such as paper, ink, a printer, tape, and adobe connect access, as seen in the budget below.

Some nonfinancial resources used to complete this DNP project were the time spent using professional collaboration between multiple registered nurses, nurse practitioners, and pharmacists. This professional collaboration helped to accurately get this DNP project approved through two Institutional Review Boards (IRB), planning, and implementation successfully. Assuming no pushback, the hospital could save money by adding research and data collection into the Clinical Nurse Specialist (CNS) role on the unit on which the DNP student implements this DNP project. The CNSs participate in daily interdisciplinary rounds, where they can collect data on the encounters of patients transitioning to comfort care. If the CNS could collect data concurrently during daily rounds, this would decrease the time spent outside work doing research and collecting data, reducing costs.

Additionally, the hospital could use this DNP project as a clinical ladder advancement opportunity for an employee already in the organization to help the CNS. The employee pursuing their clinical ladder advancement can help develop the intervention, make revisions, and analyze

the data. Using this DNP project for clinical ladder advancement would be more cost-efficient on a larger scale, as an internal employee does not require extra training to use the charting system. In addition, they could work on this project during downtime on their previously scheduled shifts.

Implications of the Findings

This DNP project helped pharmacists and providers realize there was no clear guideline for which medications to deprescribe in comfort care or how to deprescribe them. Future research needs to be conducted on this topic to help create a deprescribing tool that providers can follow when completing a medication reconciliation.

Implications for Patients

If executed correctly and consistently, this DNP project can continue to impact wellness by allowing comfort care patients to take medications only as needed for comfort in their last few days of life. This DNP project also saves patients money by reducing unnecessary medications they must take at the end of life, as they have decided to be made comfortable.

Implications for nursing practice

This DNP project helped remind the providers to deprescribe medications in comfort care, saving time for the registered nurse and the provider. In addition, this decreased the number of phone calls from nurses to the provider to receive clarification on which medications to give or not give. Incidentally, this allowed the nurse to spend more time with the patient, potentially increasing job satisfaction. This DNP project also helped educate and empower the bedside nurses to remind the provider which medications, such as insulin and blood pressure, do not need to be given during comfort care.

Impact for Healthcare System(s)

The impacts of this DNP project on the healthcare system are currently unknown as there was no data collected on the patient or hospital savings from this project; however, the hope is that the healthcare system saves money and increases patient satisfaction scores by only giving necessary medications. Additionally, this DNP project could help with team building as multiple disciplines worked towards the same goal of deprescribing medications for comfort care patients. Lastly, this DNP project helps to decrease phone calls to providers, which in turn gives them more time to complete essential tasks and ultimately affects the healthcare system in a positive manner.

Sustainability

For this DNP project to be sustainable long term, it is imperative that the bedside nurse consistently completes and reports the "A-N rounding tool" bundle in daily interdisciplinary rounds. Modifying the rounding tool bundle on the unit takes only a few extra seconds to complete, as this tool is already used in daily rounds. This rounding tool served as a reminder for the provider and the pharmacists who participated in interdisciplinary rounds to deprescribe medications in patients who transitioned to comfort care. Additionally, educating the providers and pharmacists about the importance of this DNP project can help improve sustainability, as the provider completes the medication reconciliation, and the pharmacist approves medication orders once entered into the Electronic Medical Record (EMR).

Dissemination Plan

For the final step of this DNP project, there was the dissemination of critical information via multiple different platforms to educate about the importance of deprescribing medications to the comfort care population in the Intensive Care Unit (ICU). First, relevant information about

this DNP project, including its background, purpose, results, and recommendations, was compiled into a poster. The presentation of this poster to university staff and students at East Carolina Universities College of Nursing occurred on April 11th, 2023. Second, the DNP student disseminated this project through "The Scholarship," an East Carolina University (ECU) portal where all Doctoral presentations are submitted. The date of this submission was April 24th, 2023. Additionally, the DNP student conveyed the results of this project at the project site during the monthly Unit-Based Council meeting on April 12th, 2023. Lastly, the paper and poster presentation were submitted to the DNP council at the project site to disseminate these findings further.

Section VI. Conclusion

Limitations and Facilitators

The Doctor of Nursing Practice (DNP) student implemented this project in September 2022, and post-implementation occurred from October 2022 to December 2022. Four Plan-Do-Study-Act (PDSA) cycles were completed during implementation and post-implementation, each four weeks apart. At the end of each PDSA cycle, limitations and facilitators were analyzed to determine how to improve this DNP project best. For example, one limitation noted during the first PDSA cycle was that fewer night shift staff had been educated than day shift staff, as most of the time spent at the project site was during the day shift hours. As a result, the DNP student made arrangements to inform the charge nurses on the unit about the educational leaflet so that they could educate staff in the morning and nighttime huddles and ensure equal education to the staff about this DNP project.

In the second PDSA cycle, one limitation discovered was that there was a limited number of patients who transitioned to comfort on the unit during this cycle. This barrier was uncontrollable; however, it affected the sample size of this DNP project negatively. Therefore, the post-implementation period was extended until the end of December 2022 to overcome this barrier. Additionally, during the second PDSA cycle, another limitation noted was that once the patient encounter was closed, chart reviews were not as user-friendly as they were when the encounter was still open. Closed patient encounters in EPIC made it challenging to determine when the medications were deprescribed, whether it was before the provider placed comfort care orders or when the patient encounter closed. The DNP student made a process change to review the patients' charts before they were deceased to help facilitate and ease this process.

In the third PDSA cycle, one barrier identified was whether patients who proceeded with organ donation met the criteria for inclusion in the data set for this DNP project. For example, in ICU A, many patients donate their organs/tissues through the program "Lifeshare" instead of transitioning to comfort care. Upon further discussion with the site champions of this DNP project, a conclusive decision noted that this patient population was excluded from this DNP project, as initiation of the comfort care order set did not occur. In addition, the provider kept patients who proceeded with Lifeshare on medications to keep their organs alive, which does not align with this DNP project. Again, this was a barrier, as multiple patients in the post-implementation period transitioned to Lifeshare.

No limitations were noted in the fourth PDSA cycle, as there was an increased number of patients who transitioned to comfort care during this period. In addition, having the project site champions readily available during this DNP project helped to facilitate a smoother process, as the DNP student could work through barriers with them in real-time.

Recommendations for Others

Recommendations for future replication of this DNP project include a daily chart audit of all the patients on the unit at the clinical site. This daily chart audit can help ensure that patients transitioning to comfort care are noticed in the data and can help increase the sample size. Additionally, when teaching the staff about this DNP project, it is essential to contact the site champion or project leader directly when a patient is transitioning to comfort care so that they can conduct a complete review of their chart before the encounter is closed.

The scalability of this DNP project can increase by replicating this project in all the adult ICUs at the participating hospital, such as the Medical Intensive Care Unit (ICU) or the Neurosurgical ICU. To assist the project lead in collecting data, as increasing scalability includes

multiple units, educating the Clinical Nurse Specialist (CNS) in each ICU about this project and the data collection tool is helpful. The CNS can then report the medical record number of patients who transition to comfort care to the project lead daily to aid in data collection. To sustain this DNP project long-term, educating the providers and pharmacists about the objectives and goals of this DNP project is recommended, as they are both a part of multidisciplinary rounds. Educating the providers and pharmacists will help increase recognition of the problem and meet the goals of increasing medication reconciliations and deprescribing non-comfort care medications to comfort patients.

Recommendations For Further Study

Based on the data analysis, this DNP project yielded positive results, which benefit the comfort care patients in ICU A by increasing their quality of life. Therefore, a second DNP student could launch a new project from this current study by expanding to all adult ICUs at the participating project site. Replicating this DNP project in the adult ICUs could be successful, as they all use the same comfort care order set in Epic, and all have patients who meet the inclusion criteria. Suppose expansion to other adult ICUs is successful, completion of another DNP project could extend to the entire organization. Additionally, this DNP project could be applied in various settings, such as long-term care facilities, nursing homes, or different floors in the hospital, as patients transition to comfort care in those settings.

During data collection, this DNP project exposed a significant gap in the research conducted on deprescribing medications in the comfort care population in the inpatient setting. As a result, there need to be clear guidelines on how to deprescribe medications or which medications are appropriate to deprescribe, which can hinder provider compliance. Hence,

recommendations are made for further research on this topic, as there are varying opinions on which medications are appropriate or not to deprescribe in comfort care.

Final Thoughts

Implementation of this DNP project of deprescribing medications in the comfort care population in the ICU took place at a level one trauma center in the Piedmont region. ICU A was a 29-bed unit that consisted of patients from two different populations, including surgical and trauma patients. This DNP project aimed to increase the number of medication reconciliations completed on comfort care patients. This aim can decrease patient costs, increase nurse time spent with the patient, and increase the quality of life. Pre-implementation data was collected in August 2022, as there needed to be current data on this topic for this unit. Implementation of this DNP project occurred during the entire month of September 2022. For implementation, education of the bedside nurses on the unit took place to inform them about the importance of deprescribing medications in comfort care patients using flyers and personal education.

Additionally, the education taught bedside nurses to remind the providers to complete a medication reconciliation after placing comfort care orders by reporting the "A-N rounding tool" in daily rounds. Post-implementation data was collected from October 2022 to December 2022 and placed in an excel spreadsheet for this DNP project. Data results found an increase in the deprescribing of non-comfort care medications and medication reconciliations completed when patients transitioned to comfort care in ICU A. This data shows that this project was practical and recommends expanding this DNP project. In addition, this DNP project was important for future studies, as it revealed that there needs to be more information available in the literature on how to accurately deprescribe and which medications are appropriate to deprescribe. With

further research, comfort care patients in the future can consistently receive the quality of care they deserve, no matter the setting.

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Appendix A

Literature Matrix

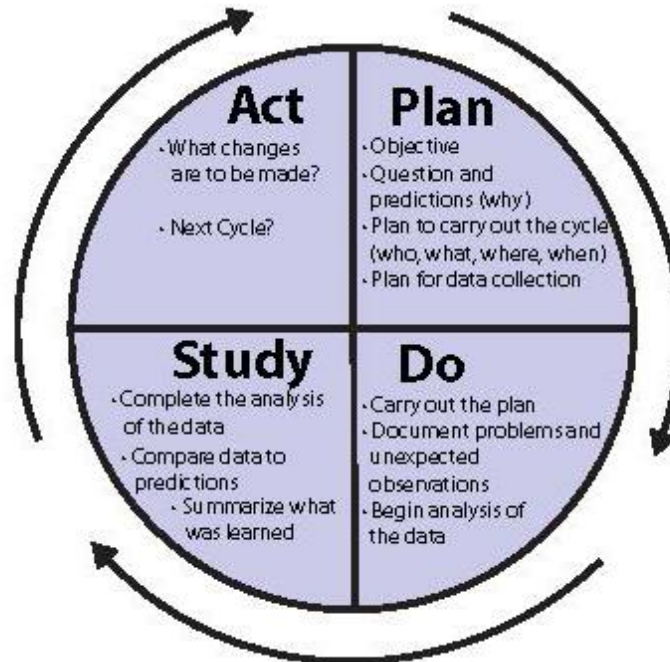
| Number | Authors | Year Pub | Article Title | Theory | Journal | Purpose and take home message | Design/Analysis/Level of Evidence | IV DV or Themes concepts and categories | Instr. Used | Sample Size | Sample method | Subject Charac. | Comments/critique of the article/methods GAPS |
|---------|--|----------|---|-------------------------|----------------------|---|---|--|---|-------------|--|--|---|
| Example | Rutgers (made up) | 2013 | Factors related to nursing students thriving in doctoral education | Theory of self-efficacy | Journal of Education | To determine if self-esteem and self-efficacy contribute to thriving in doctoral education | Level II-II (See below) Descriptive Inferential | IV Self-efficacy & Self-esteem DV thriving | Self-efficacy Rosenberg self-esteem scale | 100 | Interviewed students at 3 universities | African-American 10%; Caucasian 85% and other 5% | The authors found that...They did not include information on doctoral students who did not persist/thrive Limitations: Usefulness: Synthesis: |
| 1 | Isaac, M. L. & Curtis, R. C. | 2020 | Palliative care: issues in the intensive care units in adults | N/A | N/A | Palliative care is appropriate for ant patient in the ICU with a serious illness. For patients who have life-sustaining interventions withdrawn in the ICU, steps should be taken to maximize comfort and decrease unnecessary interventions. | Level II-V RCT Systematic review | Concepts: Appropriate consulting of palliative care | N/A | N/A | N/A | N/A | The authors focus on why it is important to involve palliative care in patients in the ICU who have a serious of life-limiting illness Limitations: Does not have a sample size |
| 2 | Miller-Smith, L., Lantod, J. D., & Pope, T. M. | 2020 | Palliative care: medically futile and potentially inappropriate therapies of questionable benefit | N/A | N/A | What ethical care should or should not be provided to a palliative care patient and how you should keep the family informed. | Level VII | Concepts: Ethical issues in palliative care | N/A | N/A | N/A | N/A | Limitations: Does not have a sample size |
| 3 | Hannan, S. M., Bailey, F. A., & Walling, A. M. | 2021 | Palliative care: the last hours and days of life | N/A | N/A | How to care for a patient when they are about to die and what signs and symptoms you should educate their family on to expect. | Level V | Concepts: Management of the dying patient | N/A | N/A | N/A | N/A | Limitations: Does not have a sample size Synthesis: Look for certain signs and symptoms such as vital signs, etc to educate the family on so that they can be prepared as to what the death process will look like |
| 4 | Okon, T. R. & Christense n, A. | 2021 | Overview of comprehensive patient assessment in palliative care | N/A | N/A | It is important to manage symptoms and relieve suffering all while allowing the patients values and preferences to be taken into account. | Level V | Concepts: Domains of palliative care | PEACE tool MOPQRST assessment MSAAS-SF symptom assessment scale PHQ2/9 | N/A | N/A | N/A | Limitations: Does not have a sample size Synthesis: during the death process, it is important that we respect the patients cultural and religious beliefs all while medically managing them. |
| 5 | Atrium Health Policy | 2021 | Palliative sedation | N/A | N/A | Medications Atrium Health uses to give patients in the comfort care process | Level V | Concept: Medications to give in palliative care | N/A | N/A | N/A | N/A | Limitations: Does not have a sample size and is not the original source. Does not include medications that should not be given Usefulness: Helpful for the nurses on knowing what medications are appropriate to give Synthesis: Talks about specific medications that are given at Atrium Health per policy in comfort care patients |
| 8 | Thompson J. | 2019 | Deprescribing in palliative care | N/A | Clinical Medicine | Stopping inappropriate medications in palliative care can improve quality of life. | Level VI Peer reviewed Journal article | Concept: Deprescribing in those with a limited life expectancy | OncPal | 61 | N/A | Cancer patients, <6 months to live | Limitations: Do not know sample method Synthesis: A stepwise approach to deprescribing is recommended in those with less than 6 months to live |

| | | | | | | | | | | | | | |
|----|---|------|---|-----|--|--|--|---|--|-----|---|---|--|
| 9 | Heinrich, C. H., Barley, E., McCarthy, S., McHugh, S., & Donovan, M. D. | 2022 | Barriers and enablers to deprescribing in long-term care facilities: a 'best-fit' framework synthesis of the qualitative evidence | N/A | Age and Ageing | Definition of deprescribing and how PIM affect older adults | Level V Peer reviewed Systematic review Meta-analysis Qualitative Descriptive | IV: Long term care facility DV: Education received | SPICE framework Best-fit or priori framework GRADE-CERQual assessment | 14 | Grey literature search of previously written papers | Deprescribing; Long term care facilities; educational intervention | Limitations: No limits on publication dates; Only uses those >65 years old Usefulness: Use the 'best-fit' framework to create inclusion and exclusion criteria for a priori framework Synthesis: Deprescribing is not routine in LTCF's, however it should be done and can be completed with intraprofessional collaboration |
| 18 | Low, C. E. et al. | 2021 | Deprescribing in hospice patients: discontinuing aspirin, multivitamins, and statins | N/A | Mayo Clinic Proc Int Qual Out | People are living to be older ages, so they are on more medications that should be discontinued at the end of life | Level VI Journal article | IV: Patients in the hospital DV: How many medications they were on | PDSA Likert scale | 83 | Used the patients that were in the current hospital census | Mayo clinic hospice patient census, medication use | Usefulness: Educated the nurses on tools that could be used to help describe aspirin, multivitamins, and statins Synthesis: There should be a dedicated person in the hospice setting who is in charge of discontinuing medications |
| 19 | Le V. et al. | 2021 | Retrospective analysis of a pilot pharmacist-led hospice deprescribing program initiative | N/A | Journal of American Geriatrics Society | Successful deprescribing of medications works well when a patient has multiple encounters with a pharmacist | Level III Retrospective analysis Peer reviewed | IV: Those in the hospice referral service DV: Disease that the patient had | Edmonton Symptom Assessment System questionnaire | 94 | | Cancer, cardiovascular disease, KPSI medical center hospice referral service | Limitations: No control group; applied to all patients admitted to the hospice and enrolled for at least 48 hours Usefulness: The more patient encounters increases the odds of having a reduction in medications Synthesis: Pharmacist-led collaboration with other healthcare providers helps to successfully describe medications |
| 20 | Schenker, Y. et al. | 2019 | Associations Between Polypharmacy, Symptom Burden, and Quality of Life in Patients with Advanced, Life-Limiting Illness | N/A | Journal of General Internal Medicine | Polypharmacy is burdensome at the end-of-life and affects quality of life | Level V Peer reviewed Original Research Descriptive | Concept: Polypharmacy decreases quality of life | Edmonton Symptom Assessment System questionnaire McGill QOL Questionnaire | 372 | Participants at the sites of Palliative Care Research Group | 75 years and older, enrolled in hospice care, English speaking, had a life-limiting illness | Limitations: Patients must be English speaking Synthesis: Adults taking more medications should be assessed so they do not have medication symptom burden at the end of life |
| 21 | Barak, R. et al. | 2021 | Less is more: polypharmacy at the end of life | N/A | The Israel Medical Association Journal | Polypharmacy should be addressed at end of life care in pediatric and adult patients | Level VII Peer reviewed | Concept: It is better to be on less medications at the end of life | N/A | N/A | N/A | N/A | Limitations: Does not have a sample size Synthesis: Polypharmacy should be addressed in the pediatric and adult populations when end-of-life is in discussion |

Appendix B

Plan-Do-Study-Act (PDSA) Framework

The PDSA Cycle for Learning and Improving



Institute for Healthcare Improvement. (2022). *Six quality improvement questions for an IHI improvement advisor.*

<http://www.ihl.org/resources/Pages/ImprovementStories/QandAonQISixQuestionsForIHIImprovementAdvisor.aspx>

Appendix C

Deprescribing Medication Education Document used for Staff Education

DEPRESCRIBING MEDICATIONS IN COMFORT CARE IN THE ICU:

New Comfort Care Order Set in EPIC

Deprescribing medication in comfort care allows for....

1. Decreased medication burned on the patient
2. Decreased confusion and phone calls from the nurse to the provider about what medications are still appropriate or not to give
3. Decreased patient costs

EPIC now reminds the provider to review current medications orders....

however, it ONLY gives them the option to prescribe new medications

- HOW CAN YOU HELP?**
1. Fill out your A-N bundle (section on palliative consult and if pt is on comfort care)
 2. Report in daily rounds & remind provider to deprescribe medications if pt is comfort care

Appendix D

Deprescribing Medication Flyer used for Reminders

Importance of Deprescribing Medications in Comfort Care

WHY? TO PREVENT GIVING UNNECESSARY MEDS

HOW? IN ROUNDS, REPORT IF PATIENT IS TRANSITIONING TO COMFORT CARE

THEN, verify med rec completed when comfort care is initiated

questions?
contact Bryce

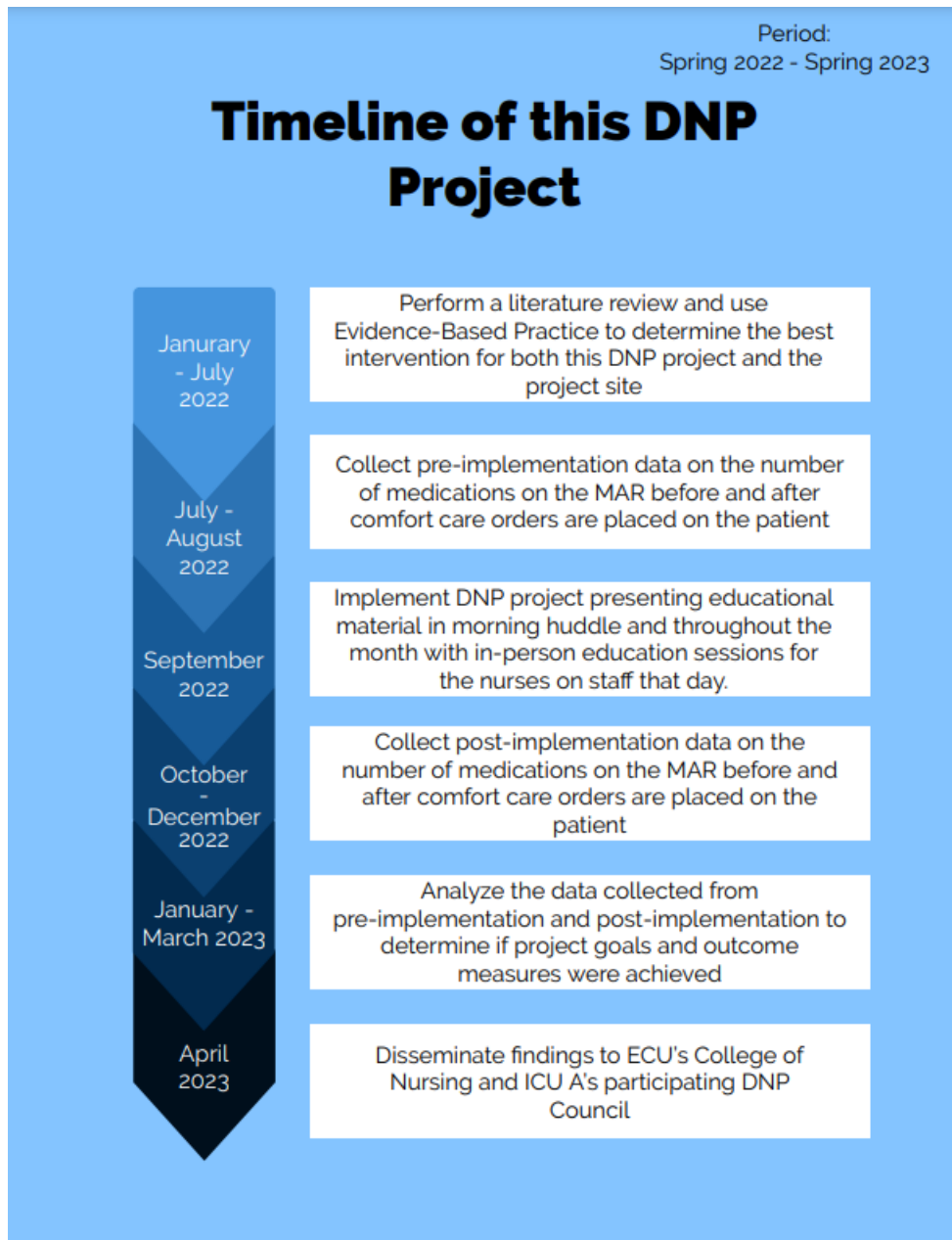
Appendix E

A-N Rounding Tool

| Patient _____ | | | Date _____ | |
|--|---|--|--|----------------------------|
| Daily POC | | | | |
| Bundle Element | Current State | | Identified POC | |
| | <i>*Day RN report A-N below</i> <i>*Night RN report orange boxes below</i> | | <i>*Both shifts utilize this column and bottom section to update patient's POC; including daily goals, order changes, barriers.</i> | |
| A Assess, Prevent, Manage Pain | CPOT Score or Numerical Pain Score: _____ Changes Needed? Yes <input type="checkbox"/> No <input type="checkbox"/> | | Pain Management Plan: | |
| B* Both Awake & Breathing Trials | SAT/SBT Touchpoint _____ SAT/SBT completed/outcome? _____ | | Plan to repeat SAT/SBT? _____ RT Orders? Orders entered <input type="checkbox"/> | |
| C* Choice of Analgesia & Sedation | Current RASS: _____ | | Changes needed to sedation to maintain RASS -1 - +1: Yes <input type="checkbox"/> No <input type="checkbox"/> Sedation plan _____ | |
| D Delirium | CAM ICU Delirium Score(circle one): Positive Negative | | Delirium score ≥ 4: nonpharmacologic measures to manage delirium | |
| E* Early Mobility & Exercises | # of Occurrences in Last 24hrs? _____ Barriers to mobility (Ex: pain, pt refusal, trips?): _____ | | Mobility Goal: <i>Report who performs each occurrence</i> Occurrence #1 (circle one) RN PT/OT <input type="checkbox"/> Occurrence #2 (circle one) RN PT/OT <input type="checkbox"/> **Check Box When Occurrence Complete** | |
| F Family Engagement | Patient's Decision Maker? _____ Any significant family concerns or dynamics? | | Family Care Conference Sceduled? _____ | |
| H Hospital Acquired | CVL: Day# _____ Necessity _____ Foley: Day# _____ Necessity _____ | | Remove Devices? CVL: Yes No N/A Foley: Yes No N/A Other: _____ | |
| N* Nutrition | Current diet order/Enteral nutrition rate | | Barriers to achieving nutrition goals? | |
| VTE Ordered? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> | Planned Trips/Procedures: | Palliative Screen: Does pt meet criteria for Palliative Consult? Yes <input type="checkbox"/> No <input type="checkbox"/> | If pt has comfort care orders in place, has a med rec been done? Yes <input type="checkbox"/> No <input type="checkbox"/> | Barriers to Tx and/or D/C? |
| Communication/Orders: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | | Medication Changes: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |

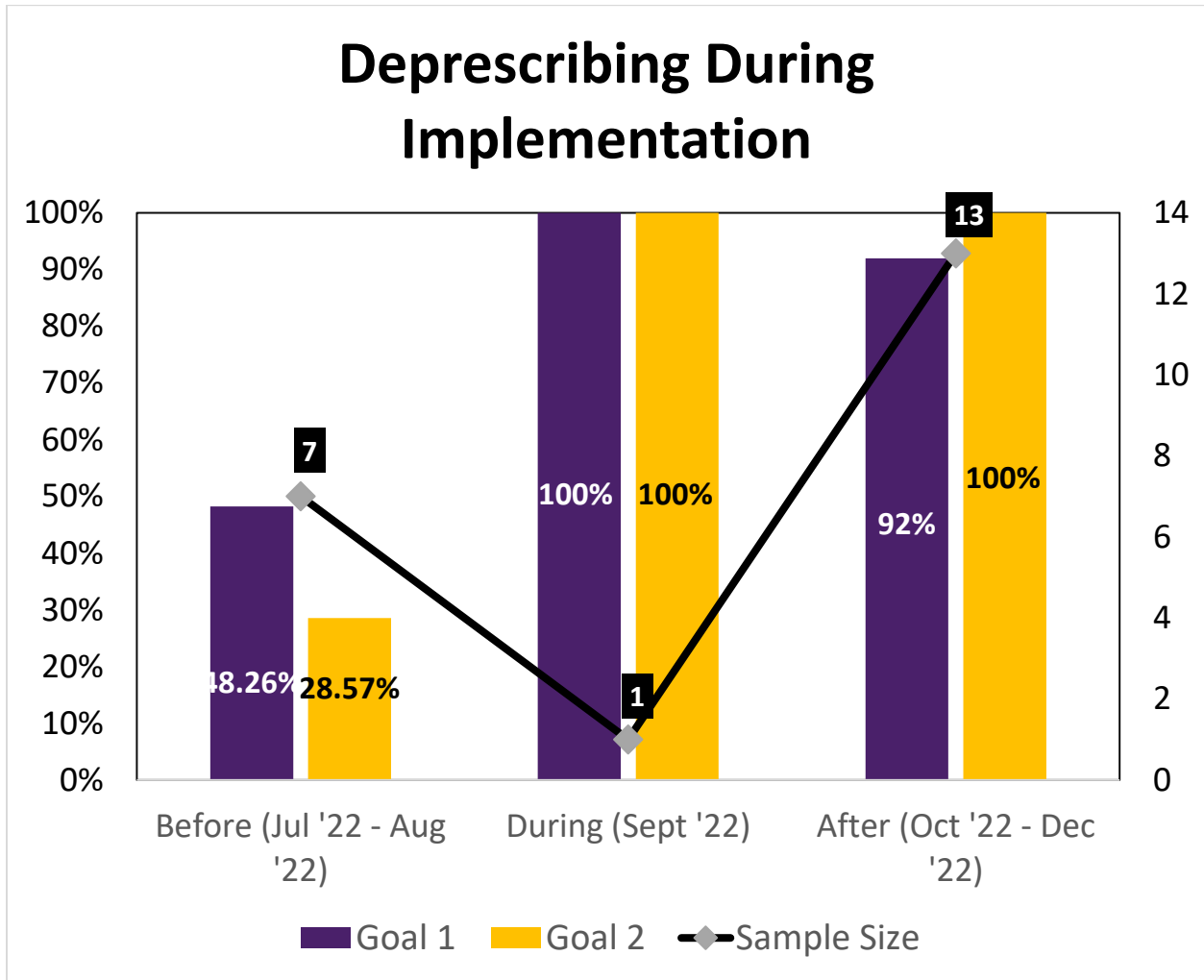
Appendix G

Timeline



Appendix H

Data Collection Analysis Graph



Appendix I

DNP Project Budget

| DNP Project Budget | | | |
|---------------------------------|-------------|------------------------|--------------|
| Supplies | Cost | Number of Items | Total |
| Current employee hourly rate | \$33.13 | 325 | \$10,767.25 |
| Ream of paper | \$5.57 | 1 | \$5.57 |
| Ink cartridge (Black and Color) | \$31.89 | 1 | \$31.89 |
| Printer | \$69.99 | 1 | \$69.99 |
| Invisible stationary tape | \$1.58 | 1 | \$1.58 |
| Adobe connect access | \$119.88 | 1 | \$119.88 |
| | | | |
| Overall Total | | | \$ 10,996.16 |