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A DNP PROJECT

Perspectives of the Obstetric Nurse Practitioner and Registered Nurse on the Barriers and Facilitators of Implementing a Self-Administrating Medication Program on a Mother-Baby Unit at a NYC Hospital

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Abstract

Background. Despite the fact that self-administration of medications (SAM) in postpartum women in a hospital setting has been proven to provide increased pain relief and decreased narcotic use, as well as increased patient and nurse satisfaction, it has not been widely implemented. Objective. For postpartum registered nurses (RNs) and nurse practitioners (NPs) to identify barriers and facilitators to implementing SAM in a metropolitan hospital setting. Methods. In this study, 41 postpartum RNs and 7 postpartum NPs participated in 1 of 3 lunch and learn programs in January 2020 where they were educated on the literature review of SAM. Following the conclusion of the education, participants completed a 30-question Likert scale survey entitled Barriers and Facilitators to Using Research in Practice. Each question was evaluated for the number of to no extent responses and the number of to a great extent response. Results. Postpartum RNs and NPs identified administration will not allow implementation (n= 42), the nurse does not feel he/she has enough authority to change patient care procedures (n=27), and the nurse does not feel capable of evaluating the quality of the research (n=15) as barriers. Facilitators to implementing the SAM program were the nurse sees benefit for themselves (n=30), the nurse sees the value of research for practice (n=20), and nurses' willingness to try new ideas (n= 20). Implication. With administration identified as a roadblock to implementing SAM, a collaborative interdisciplinary team has been created to implement SAM and other evidenced-based measures into practice at this metropolitan hospital.

Keywords: self-administration of medication, barriers, facilitators

Introduction

Nearly 4 million women gave birth in 2016 in the United States (CDC, 2017). With childbirth affecting so many women and families each year, it is imperative to provide high-quality postpartum care. Childbirth is a multi-factorial experience for women, which encompasses changes to their bodies, learning to care for a new child, and a changing family dynamic. While this experience is miraculous, it is often filled with emotional highs and lows related to hormonal changes, the new stressors of parenthood, sleepless days and nights, and physical pain related to the mode of delivery. In addition, with 98.6% of births occurring in a hospital setting, obstetricians, nurse practitioners, physician's assistants, and postpartum registered nurses need to collaborate to provide progressive care to empower new mothers (CDC, 2014).

The average age of first time mothers has been increasing since 2000. In 2016, the average age of women welcoming her first child was 26.6, which is a significant increase from 24.9 years of age in the year 2000 (Martin, Hamilton, Osterman, Driscoll, & Drake, 2018; Leonard, 2016). Today many women are choosing education and careers before motherhood. The majority of women who are entering hospitals to give birth are independent, intelligent, accomplished, and healthy (Anderson & Poole, 1983). Once a patient enters a hospital, the doctors, nurse practitioners, and physician's assistants are in charge of the woman's care. Registered nurses are there to carry out doctor's orders, dispense and watch ingestion of every medication, and tend to the many needs of the patient. A patient may not feel in control while in this unfamiliar and sterile environment but there is credible evidence that empowering women and promoting their independence will lead to better outcomes (Anderson & Poole, 1983; Green, Kuiper, Morosky, Wightman, & Curry, 1999; Macartney & Whyte, 1995; Parnell, 1959).

Self-Administered Medication (SAM) programs in hospitals date back to the 1950s. Marie Parnell, a registered nurse, implemented bedside self-medication on the obstetrical unit she was supervising in Cleveland, Ohio, in 1959. Parnell noted that childbirth is a normal physiologic process that women undergo (1959). She believed that providing medications at bedside was in line with the modern philosophy of obstetric care (Parnell, 1959). Parnell felt registered nurses were spending too much time dispensing medications rather than being a well-informed teacher to build the new mother's confidence in caring for herself and her newborn (1959).

Self-administration of medication programs is only being utilized in some hospitals across the United States. The hospitals that have implemented the SAM program noted many positive outcomes including good pain control, decreased narcotic use, as well as increased patient and nurse satisfaction (Anderson & Poole, 1983; Green, Kuiper, Morosky, Wightman, & Curry, 1999; Macartney & Whyte, 1995; Parnell, 1959). While there is evidence to support the implementation of SAM programs on all postpartum floors, it is necessary to examine the barriers and facilitators to this program being implemented.

Self-management is essential for all patients to regain and maintain their health. By allowing patients to self-administer their medications at this NYC hospital, they will be able to appreciate the many benefits that other patients have experienced since its implementation in 1959. Through identifying barriers and facilitators to implementing the SAM program, hospital staff will be better prepared to overcome obstacles in order to implement and provide evidenced-based care. Providers and registered nurses must advocate the implementation of evidence-based programs that will lead to improved patient outcomes.

Background and Significance

The major New York City (NYC) hospital that is examining barriers and facilitators in the implementation of SAM is responsible for approximately 7,000 deliveries a year. As a prestigious and nationally ranked hospital, the institution and the staff are always researching for evidence-based practice guidelines to drive patient care. The NYC hospital's postpartum unit currently utilizes the traditional way of administrating medication. Registered nurses are responsible to provide patients with both standing and as needed (PRN) pain medications along with prenatal vitamins, stool softeners, Vitamin C, and iron pills. The pain medications include Motrin 600mg every 6 hours, Tylenol 650mg every 6 hours, Oxycodone 5mg or 10mg every 4 hours, and/or Diluadid 1mg or 2mg every 4 hours. In accordance with this traditional way of administrating medication, it is also the registered nurse's responsibility to remain with the patient until the medication has been swallowed to ensure the full dose of medication was ingested.

One way the hospital determines their performance in the many areas of patient care is through the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). HCAHPS is a nationwide 27 question standardized survey sent to patients following their discharge from the hospital (Centers for Medicare & Medicaid Services, 2017). The survey asks questions regarding their perspective of the hospital's care and those responses are shared with the public. The topics that are addressed in the survey include hospital quietness, hospital cleanliness, nurse and doctor communication with the patient, how quickly patients received help from hospital staff, pain control, communication about medications, discharge information, and their overall rating of the hospital (Centers for Medicare & Medicaid Services, 2017).

HCAHPS scores are taken very seriously at this NYC hospital because a top goal is to provide optimal patient care, but also HCAHPS scores are linked to financial incentives. The Centers for Medicare & Medicaid Services withholds 1% of Medicare payments and 30% is directly linked to HCAHP scores (Mehta, 2015). If hospitals fail to reach national benchmark goals, all or part of these payments will be withheld.

The HCAHP results are discussed monthly with staff and there is a continuous collaboration to improve scores and patient outcomes. In October 2018, HCAHP pain scores indicated that 17.2% of cesarean delivered patients and 13.6% of vaginally delivered patients at this institution are not always experiencing adequate pain relief (Pavsic, 2018). The HCAHP scores also reveal that 80% of vaginally delivered patients and 5% of cesarean delivered patients don't feel there was sufficient communication about pain (Pavsic, 2018). Sixty-eight percent of cesarean-delivered patients and 23% of vaginally-delivered patients did not believe communication about pain medications was adequate (Pavsic, 2018).

It is crucial to improve upon this NYC hospital's HCAHPS relating to pain for many reasons. Adequate pain control impacts the individual, the individual's newborn, the individual's family, as well as the institution. The pain that the postpartum woman is feeling can directly impact her emotionally and physically. Uncontrolled pain can impede upon her ability to care for her newborn, learn new information, breastfeed, and rest. Uncontrolled pain is also associated with increased opioid use, postpartum depression, and a development of persistent pain (Chestnut, 2009). This can also impact her family or support system, as they may need to assist in caring for the newborn and also the patient when pain is not adequately controlled.

Lastly, subpar HCAHPS scores also impact the institution. HCAHPS data is available for the public to view. Substandard scores are linked to a decrease in new patient admissions,

negatively impacts a hospital's reputation, and a decrease in Medicare and Medicaid reimbursements (Centers for Medicare & Medicaid Services, 2017). While patient outcomes remain a top priority, hospitals are also a business and rely on reimbursements to continue to properly staff, have adequate supplies, up-to-date equipment, and offer continuous training to grow and provide innovative care.

This institution is currently following The American College of Obstetricians and Gynecologists (ACOG) recommendations to use nonpharmacologic (perineal cold packs, topical anesthetics, heat packs, sitz baths) and pharmacologic (Motrin and Acetaminophen) therapies simultaneously (2018). At this NYC hospital, the nonpharmacologic therapies are provided and kept at the patient's bedside, however, the registered nurse administers the pharmacologic therapies. With research recommending pharmacologic therapies to be kept at the patient's bedside, it is important to identify barriers preventing the SAM program from being implemented. For more than 40 years, nursing literature has identified the gap between research and using that research in clinical settings to improve patient outcomes (Funk, Champagne, Tornquist, and Wiese, 1991). By examining the barriers and facilitators to implementing SAM at this institution, it can lead to a positive change in patient outcomes.

Needs Assessment

Postpartum mothers at this NYC hospital are in need of (1) more adequate pain relief, (2) increased communication about pain, and (3) more thorough information regarding the pain medication prescribed. These needs were identified through HCAHPS data collected from patients who were admitted in October 2018. The institution desires to increase HCAHPS scores relating to these three identified needs by initiating a change in the way pain medication and information is distributed to patients. An increase in HCAHPS is associated with improved

patient outcomes (Lippincott Solutions, 2018). This NYC hospital aims to be a high performer in all aspects of care, especially in the category of pain.

By employing the Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis, there is a further understanding of the need to implement the self-medication administration (SAM) program on this major NYC postpartum unit. Beginning with strengths, this institution is nationally ranked by the U.S. News Best Hospitals Honor Roll and ranked second in New York State (n.d.). Their postpartum unit was the first New York City hospital to obtain a baby-friendly designation in 2011 and continues to have a strong commitment to providing the best care for new mothers and their newborns. In 2019, this hospital was also granted Magnet status for the fourth consecutive time for excellence in nursing services. With nearly 7,000 deliveries a year and 50 postpartum beds available, there is a high volume of patients that could benefit from the SAM program.

While there are many institutional strengths, there are areas of weaknesses that include stigma regarding the SAM program. Because a hospital is a very controlled and regulated environment with many protocols, changes to the way things have traditionally been done may be met with some resistance. A self-medication program does not exist at this institution and may be met with skepticism. In the implementation process of this program, there will be many disciplines involved such as pharmacy, medical doctors, physician's assistants, nurse practitioners, registered nurses, hospital lawyers, nurse informaticists, and management. It is important to identify these weaknesses and barriers prior to beginning the implementation process to ensure its success.

A few studies addressed the concerns of registered nurses and licensed providers. Jankowski, a nurse educator in Columbia, Missouri, implemented the SAM program on her

postpartum unit. Prior to the programs implementation, Ms. Jankowski spoke with staff about the SAM program and they raised concern over potential lawsuits and overdoses (1987). An article by Macartney and Whyte also discussed staff resistance related to anxiety about job security, consent, and whose responsibility it is to package the medication into a SAM kit (1995). Prior to the implementation of the SAM program by registered nurses Kathy Anderson and Carol Poole at a hospital in Seattle, Washington, two physicians rejected the SAM program altogether and other hospital staff expressed concern about how much medication their patients were taking (1983). Following the implementation of the program, the articles noted that their concerns were unfounded and that hospital staff were impressed with how well the transition to the SAM program went (Anderson & Poole, 1983; Macartney & White, 1995; Parnell, 1987). Prior to implementation, the concerns of the all those involved in the process should be considered and addressed in order to facilitate a smooth transition.

By implementing the SAM program, this competitive hospital can help distinguish itself from other New York City hospitals. To date, this program is not available in any other NYC hospitals of comparable size. This progressive program could attract new patients who prefer fewer interruptions and more independence. In addition to HCAHP scores, many patients chose hospitals based on friends' and families' experiences. If the SAM program is as successful as it has been in participating hospitals, the hospital's postpartum unit could see an increase in new patients based on positive reviews and referrals.

There are some external threats to consider once the SAM program is implemented. While there may be new patients that chose to deliver at this NYC hospital because of the SAM program, there may be new patients whom are wary and not inclined to participate in the program. To avoid this potential problem, the hospital could allow patients to opt out of the

program and have registered nurses administer medications in the traditional way. Another external threat may be the hospital-accrediting agency, The Joint Commission. The Joint Commission has strict guidelines and regulations regarding medication and patient safety that must be followed. If not properly followed, the hospital could face monetary fines. While the SAM program is successfully implemented in other Joint Commission accredited hospitals, the SAM protocol will have to factor in the Joint Commissions regulations.

Problem Statement

Doctoral prepared nurse practitioners hold a pivotal role in patient care. Through identifying problems and applying evidence-based research into clinical practice, nurse practitioners can greatly improve patient outcomes. However, there can be barriers even when evidence-based practice is presented. While there is an identified problem of some patients reporting insufficient pain relief, inadequate communication about pain, and deficient education about pain medication related at this NYC hospital's postpartum unit, no change to pain protocols have been made. Although the literature shows many benefits to self-administration of medication, it has not been tried at this NYC hospital. It is necessary to identify both barriers and facilitators by those implementing the program to ensure the success of the program.

Clinical Question

The use of the PICO acronym helped to frame and solidify the clinical question. The population that is being targeted is a major NYC hospital's nurse practitioners and registered nurses. The intervention is to educate and survey the nurse practitioners and registered nurses on the literature review of the self-medication administration program and how it can be implemented on the unit. The comparison to the SAM program is the traditional way medications are administered, which is solely by the registered nurse. The outcome is to identify

barriers and facilitators to implementing the SAM program at this NYC hospital's postpartum unit. This will be evaluated through the Barriers and Facilitators to Using Research in Practice survey (Funk, 1987). See Appendix K. The clinical question is "What are the barriers and facilitators to implementing the self-administration of medication program at this NYC hospital?"

Aims and Objectives

There are two main objectives to be achieved through educating and surveying both registered nurses and nurse practitioners about implementing the self-administration of medication program. The first objective is to identify barriers in implementing the SAM program. The second objective is to identify facilitators in implementing the SAM program.

Review of Literature

A comprehensive literature review was conducted to evaluate the effectiveness of self-administration of medication for postpartum patients. This literature review was utilized to educate the registered nurses and nurse practitioners in order to identify barriers and facilitators in implementing the SAM program on this NYC postpartum unit. The databases utilized included CINAHL, PubMed, MEDLINE, and Clinical Key. The search terms used were "self-administration" AND "medication" OR "SAM" OR "self medications" OR "medications at bedside" AND "postpartum" OR "patients." Additional searches included "pain relief" AND "postpartum." Articles were critiqued and eliminated based on their relevance and evidence strength. In total, 18 articles were appraised and 10 were included in this synthesis of research.

The literature included consisted of randomized control trials (2), systematic review (1), cross-sectional studies (3), retrospective studies (1), mixed methods study (1), and non-research (2). The major themes synthesized from this literature included (A) SAM had between 82%-

100% patient satisfaction, (B) SAM provided increased pain relief in postpartum patients, and (C) Implementation of SAM lead to decreased use in over-the-counter pain medication and narcotics. The following provides a synthesis of the research evidence discovered during the literature review in support of the implementation of this quality improvement project.

Increased Patient Satisfaction

The most prevalent theme that was revealed during the literature review was that self-administration of medications in the postpartum population was associated with high percentages of patient satisfaction. Anderson & Poole found that of the 230 postpartum patients that participated in the SAM program, 82% reacted positively, 13% responded neutrally, and only 5% responded negatively (1983). While Beger, Messenger, & Roth had a smaller sample size of 33 vaginally delivered postpartum mothers, 100% were satisfied with the SAM program (1999). East, Dubé, & Perreault randomized control trial with a total of 334 vaginally and caesarean delivered women found that of the vaginally delivered women 93.33% of SAM participants vs. 63.63% of standard participants would choose the same method again ($p =< 0.001$) (2007). The same question was asked to the caesarean delivered patients who responded in favor of the SAM program as well with 87.50% of SAM participants vs. 57.50% of standard participants would choose the same method again ($p = 0.005$) (East, Dubé, & Perreault, 2007). Jankowski & Wells had 100% of their 18 patients state they would participate in the SAM program again (1987). Lastly, Richardson, Brooks, Bramley, & Coleman systematic review showed 16 out of 19 studies reported an increase in patient satisfaction (2014). While these studies had varying sample sizes and methodology, it is evident that there is a strong correlation between the implementation of the SAM program and patient satisfaction.

Increased Pain Relief

In addition, the review of literature found themes of increased pain relief in postpartum patients. This was evaluated through both qualitative and quantitative data. Schérer, et al. found that with 314 postpartum women there was an 80% self-reported median overall improvement of pain with the implementation of the SAM program (2016). Herman conducted a randomized control trial of 22 postpartum women and found that the 11 patients that self-administered experienced less pain when medications are at their immediate disposal as compared to the other 11 patients who had to wait for a nurse to distribute them (1974). Herman also noted that patients responded to pain relief more rapidly and for a longer duration when they self-administer analgesics (1974). East, Dubé, & Perreault's data from 334 postpartum women did show that those who participated in SAM felt their pain relief was more appropriate during their stay, however it was not statistically significant ($p = 0.61$) in vaginally delivered mothers and ($p = 0.46$) in caesarean delivered mothers.

Decreased Use in Over-the-Counter Pain Medication and Narcotics

Another theme that was prevalent in the literature, and which was not part of the clinical question, was that the implementation of SAM lead to a decrease in both over-the-counter medication and narcotics. Beger, Messenger, & Roth compared narcotics use in patients prior to the implementation of SAM and in patients 6 months after the implementation of SAM (1999). The data revealed that 80% of patients took one or more narcotic prior to the implementation of SAM and 13% of patients took one or more narcotic 6 months after the implementation of SAM (Berger, Messenger, & Roth, 1999). Berger, Messenger, & Roth also looked at the use of narcotics at 12 months and 15 months following the implementation of the SAM program and found that 32% and 23%, respectively, of postpartum patients had ingested one or more narcotic (Berger, Messenger, & Roth, 1999). The mean percentage of those who used one more narcotic

between 6 and 15 months after the implementation of SAM was 22.67%, which is a dramatic decrease from 80%.

A retrospective study by Green, Kuiper, Morosky, Wightman, & Curry revealed that Group I, who was receiving medications traditionally from a registered nurse, used on average 9.23 narcotic tablets versus Group II, who were participants in the SAM program and used 2.01 narcotic tablets ($p < 0.001$) (1999). This study also concluded that 82.5% of women in Group I used one or more narcotic during their hospitalization versus 40% of women in Group II (Green et al., 1999). East, Dubé, and Perreault evaluated how many patients in SAM versus standard participants did not take any pain medication during their hospitalization (2007). In vaginal deliveries 12% of SAM participants versus 3.13% of standard participants did not take any pain medication ($p=0.02$) (East, Dubé, and Perreault, 2007). However, in caesarean delivered patients the data was not clinically significant ($p=0.29$). Nevertheless, it did show that more SAM participants did not take any pain medications compared to standard participants (East, Dubé, and Perreault, 2007).

Herman's randomized control trial also found that when patients are allowed to self-medicate, they take less analgesic medication, although there was no statistical data presented (1974). While the above studies presented data that showed a decrease in narcotic use following the implementation of SAM, there was one study whose data on narcotic usage showed an increase in Tylenol #3 usage by postpartum patients.

Anderson and Poole evaluated narcotics usage before and after the implementation of SAM and it revealed, on average, four tablets of Tylenol #3 were used by patients in SAM as compared to an average of two tablets of Tylenol #3 prior to the implementation of SAM ($p= 0.01$) (1983). Anderson and Poole believed this was due to the fact that patients did not have to

ask the nurse for medication for pain, they were more likely to take a stronger medication when they needed it (1983).

With multiple studies revealing a decrease in pain medication use with the implementation of self-administering medications, it is important to assess the effects this has on the mother-baby dyad (Berger, Messenger, & Roth, 1999; East, Dubé, and Perreault, 2007; Green et al., 1999; Herman, 1974). Narcotics are known for their common side effects including sedation, dizziness, nausea, vomiting, constipation, physical dependence, tolerance, and respiratory depression (Benyamin et al., 2008). Safety concerns are noteworthy since a new mother may experience one of the numerous side effects of narcotics. Narcotic side effects may inhibit her ability to care for herself and her newborn.

Berger, Messenger, and Roth discussed that their patients were more alert and stable on their feet due to the decrease in narcotic usage (1999). Since education is a large component to postpartum care, it is important to have patients that are more alert so they can retain important information. Less drowsy mothers are also able to better interact and bond with their newborn (Green et al., 1999). Green et al. also noted that less narcotic use could lead to a decrease in constipation postpartum mothers experience and lead to a decrease in stool softeners and laxatives needed (1999). Lastly, it may also decrease anxiety in breastfeeding mothers who worry about the potential exposure to their newborns through breast milk (Green et al., 1999).

Qualitative Themes

In addition to the prevalent themes found during the literature review, there was also some valuable and consistent themes discovered. Qualitative data collection is important in the evaluation of the SAM program because it allows the participants to express their experience in words. Participants can provide more complex and detailed insight that can lead to a change or a

continuation of the program. Anderson and Poole compiled patient comments and found these common themes: patients would rather take the analgesics themselves rather than waiting for staff; they appreciated the educational component to the SAM program; they didn't feel pressure from staff to take medications they felt unnecessary; and, they appreciated being treated as responsible adults (1983). Following the implementation of SAM at a postpartum unit in Canada, Macartney & Whyte discovered common themes in patient comments as well. Patients liked being treated as an adult, not having to bother the nurse, having the medication as soon as they needed it, and they felt it was a seamless transition when they went home (Macartney & Whyte, 1995). This qualitative data reinforces that the population of postpartum women are both capable and desire to participate in their care.

While one of the aims of the SAM program is to increase education and communication about pain medications, only the systematic review included in our literature review evaluated education about the medication following the implementation of SAM. The systematic review conducted by Richardson, Brooks, Bramley, & Coleman did state that only 8 out of 19 studies reported significant improvement in knowledge attributed to the SAM program (2014). There was limited data provided about how patients were educated in each study. Given mixed results, it is unclear if the implementation of the SAM program will positively improve HCHAP scores regarding patient education.

Limitations

Through the literature review on self-administration of medication to postpartum mothers, there were some limitations noted. The first apparent limitation detected was that the majority of the research was published 10 years ago or more. Out of the 10 chosen articles, 8 were published greater than 10 years ago. It is beneficial to have historical research but it is also

important to make practice changes based on the most current data. Furthermore, three of the studies had a small sample size of less than 34 postpartum mothers (Berger, Messenger, & Roth, 1999; Herman, 1974; Jankowski & Wells, 1987). A small sample size can decrease statistical power, the likelihood that a study will detect an effect when there is an effect to be detected. A decrease in statistical power can also lead to an increase in Type II errors. Type II errors occur when the results confirm the hypothesis of the study, however, an alternative hypothesis is true (Deziel, 2018).

There were also limitations in the inclusion criteria. Two of the studies did not include cesarean delivered mothers (Green et al., 1999; Herman, 1974). In 2016, 31.9% of all US births occurred through cesarean delivery (CDC, 207). With cesarean deliveries accounting for approximately 1/3 of deliveries, it is important to include these patients perception of SAM in the data. Two studies also did not include mothers whom are considered "advanced maternal age," which are women who give birth at age 35 or later (Herman 1974, Jankowski & Wells, 1987). With the advancement in assisted reproductive technology, there are now more women able to give birth at age 35 and beyond. It is important to have data that represents all postpartum mothers including women older than 35.

The individual authors discussed the limitations of their work. Anderson & Poole's study did not include data on the patient demographics including age and number of previous births (1983). It is unclear if the study was representative of all postpartum women or if they had a more specific postpartum population. In East, Dubé, & Perreault's randomized control trial, pain scores were not consistently recorded by the nurses and the patients (2007). This omission could have skewed the results of how effective their pain relief was with and without the implementation of the SAM program. In addition, 11 patients were lost in the follow up (East,

Dubé, & Perreault, 2007). Green et al. discussed that his study had potential for bias due to two factors (1999). The factors included the unblinded study framework and that healthcare providers may have been reluctant to provide patients with narcotics for pain relief (Green et al., 1999). In Herman's implementation of SAM, the hospital only included one pain medication (Darvon). While the SAM kits to be implemented in this quality improvement project will contain two different pain medications, Motrin and Tylenol, it is hard to decipher if their reported pain relief is due to the specific medication Darvon or due to having the medications at the bedside.

With nearly 4 million women giving birth every year, it is important to provide evidence-based pain relief so these women can more comfortably transition into their most important role yet, motherhood (CDC, 2017). Through the literature review, it is evident that implementation of SAM will increase patient satisfaction, increase pain relief, decrease over-the-counter medication and narcotic use. The research also showed that patients enjoyed their independence as well as being treated like an adult. The women also liked not having to bother the nurse to receive medication. Without the mundane task of passing over-the-counter medications, nurses have more time to provide education and reassurance to their patients. In conclusion, all of the reviewed literature supported and encouraged the implementation of SAM on all postpartum units (Anderson & Poole, 1983; Messenger & Roth, 1999; East, Dubé, & Perreault, 2007; Green et al., 1999; Herman, 1974; Jankowski & Wells, 1987; Macartney & Whyte, 1995; Parnell, 1959; Richardson, Brooks, Bramley, & Coleman, 2014; Schérer et al., 2016).

Theoretical Framework

The conceptual framework that was chosen to assist in support of exploring barriers and facilitators for implementing self-administration of medication to postpartum mothers, is

Improving Medical Practice by Solberg (2007). This framework was developed to further understand why or why not care process changes occur or do not occur (Solberg, 2007). This conceptual framework assists providers and administrative leaders in showing how evidence-based knowledge can be implemented in relation to other essential factors.

The framework consists of three main components that are necessary in order to produce the desired improvements in quality of care and patient outcomes (Solberg, 2007). The components are: (1) priority, (2) change process capability, and (3) care process content (Solberg, 2007). If the institution, including personnel of all levels, does not view the proposed evidenced-change practice as a priority, then it is unlikely to happen. In order for a practice change to take place, the institution must have a strong desire and the resources necessary to implement the change.

Once the institution finds the evidence-based practice change a priority, the next element that must be present is change process capability. There are nine important factors to change process capability which include strong effective leadership, commonly understood framework/ infrastructure for managing the change process, people at all levels with change management skills, adequate resources/ time devoted to the change process, a capable clinical information system, good communication/ measurement skills, a high degree of trust/teamwork, individual accountability and, lastly, a high degree of involvement/engagement by personnel at all levels (Solberg, 2007). If the committee participating in the practice change possesses these nine factors regarding change process capability, the practice change can advance in the framework and is closer to implementation.

The last component to improving medical practice is care process content. This factor will lead to a systems-level change in the institution. Care process content includes four

elements: delivery system redesign, self-management support, decision support, and clinical information system (Solberg, 2007). If all factors are present in the conceptual framework, it sets the institution up to develop, implement, and sustain improved care quality. It is important to note that once a facilitator is absent, it is then considered a barrier.

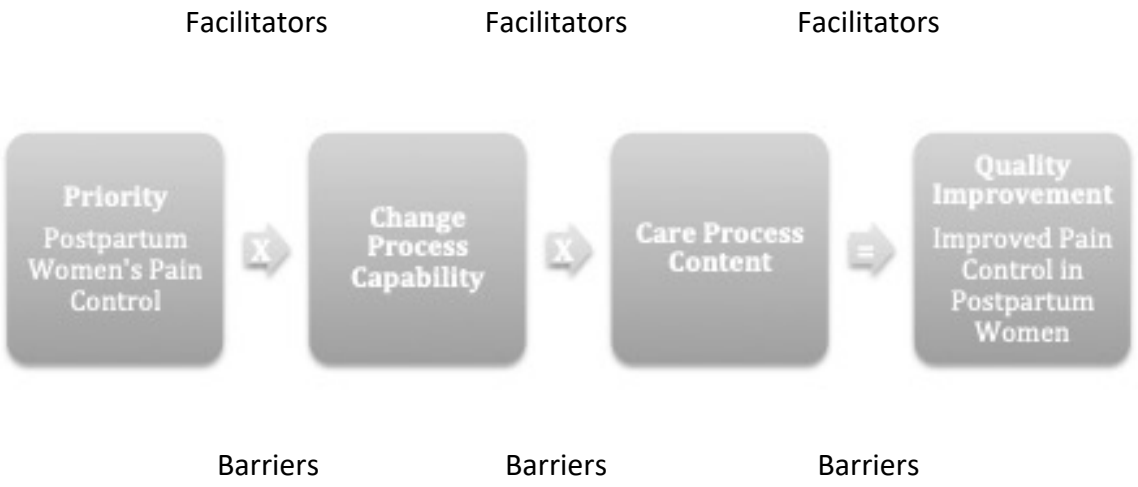

Figure 1: Conceptual framework for practice improvement: self-administration of medications

Methodology

The study utilized a post-test study design. Postpartum nurse practitioners and registered nurses were provided education about the SAM program during three lunch and learn programs and then an electronic posttest was administered to analyze the barriers and facilitators of the implementation of SAM.

Setting

The setting for this study was a 48-bedded postpartum unit in a large medical center in a metropolitan setting in New York City, New York. The staff on the postpartum unit was composed of approximately 98 registered nurses, 54 obstetricians, 8 nurse practitioners, and 4

physicians' assistants. This medical center does approximately 7,000 deliveries a year. (see Appendix M).

Study Population

The type of sampling used was a convenience sample. The study population was targeted at the registered nurses and nurse practitioners that were assigned to work on this NYC hospital's postpartum unit. Inclusion criteria included registered nurses or nurse practitioners working at this NYC hospital postpartum unit, available in person or by telephone on January 9, 2020, January 11, 2020, and January 15, 2020. Exclusion criteria included ancillary staff, physician's assistant, and medical doctors. Desired sample size was 94 registered nurses and 8 nurse practitioners to ensure a 2% margin of error and a 95% confidence level.

Subject Recruitment

The registered nurses and the nurse practitioners on the postpartum unit were informed about the three lunch and learn dates through their employee email. The recruitment email was sent out January 2, 2020 and January 6, 2020 (see Appendix B). Every postpartum registered nurse and nurse practitioner was encouraged to sign up for one of the three lunch and learn programs offered. If a staff member was unavailable to be present in person, a conference call number was provided for each lunch and learn. In addition to two emails, starting January 2, 2020, registered nurses and nurse practitioners were informed about the lunch and learn dates at the morning huddle that takes place on the postpartum unit with the charge nurse daily at 9:15am. Because the charge nurses rotate, there was a script provided to them to read at the morning huddle (see Appendix C). A flier was posted in the unit break room on both the west and east side of the unit and both staff bathrooms (see Appendix D). The co-investigator's contact information including email address was located on the email that was sent out on

January 2, 2020 and January 6, 2020 and the two fliers that were posted in the unit break room and staff bathrooms.

The three lunch and learn programs were held in the postpartum floor conference room on Thursday, January 9, 2020, Saturday January 11, 2020, and Wednesday January 15, 2020. Participants were informed that their participation was voluntary and they could withdraw from the study at anytime. The co-investigator provided beverages and light refreshments. There was no further compensation provided to participants.

Consent Procedures

Consent for the participation in this program was voluntary and obtained verbally. The registered nurse and nurse practitioner participants were provided with the option to leave the study if they chose not to participate. Participants were also informed that they were able to disqualify themselves at anytime during the study.

Risks and Harms

There is no anticipated discomfort for participants in this study, so risk to participants is minimal.

Subject Costs and Compensations

There is no cost to participate in this study. Participants did not receive monetary compensation for their participation in the study; however, beverages and light refreshments were provided at each lunch and learn session by the co-investigator.

Study Interventions

This study included two phases. The two phases were the Education Phase and Evaluation Phase.

Phase 1: Education. In the education phase, registered nurses and nurse practitioners working on the Mother-Baby Unit at this NYC hospital were encouraged to attend one of the three lunch and learn programs. The programs were held in the postpartum floor conference room at 1pm Thursday, January 9, 2020, Saturday January 11, 2020, and Wednesday January 15, 2020. First, the co-investigator reviewed the implications and itinerary of the study. Verbal consent was then obtained from the participants. During the lunch and learn, the co-investigator presented the evidence-based research on self-administration of medication (Appendix A). The co-investigator also provided an explanation how this would impact registered nurse's workflow (Appendix F). The co-investigator also provided participants with recruitment materials that would be given to patients participating in the SAM program (Appendix F, G, and H). After presenting the evidenced-based data on self-administration of medication, those in attendance in-person or by conference call were provided with a link and a quick response code, QR code, to the 30-question questionnaire. Participants had the option to either scan the QR code to retrieve the questionnaire or use the link provided to them through email. The questionnaire by Sandra Funk is entitled Barriers and Facilitators to Using Research in Practice (1991) was uploaded into Qualtrics, the NYC hospital's online survey tool (see Appendix K). Both the provided link and QR code allow for completely anonymous responses. There will be no place for participants to place their name to assist in keeping their confidentiality. The only identifying factor that was asked is on question 1, which asks participants to identify if they are a registered nurse or a nurse practitioner. Following the completion of the survey, those in attendance were told they may leave and those participating by conference phone may disconnect.

Phase 2: Evaluation. The co-investigator evaluated the answers to each of the 30 questions on the Barriers and Facilitators to Using Research in Practice survey. Question 1 will

be evaluated to see the number of nurse practitioner and registered nurse participants. Questions 2-30 will be tallied in Qualtrics to see the breakdown of each question and the responses to the 5-point Likert scale.

Project Timeline

The project timeline for this study was 61 weeks. The proposal development occurred in three phases. Proposal part 1 was submitted by February 17, 2019, proposal part 2 was submitted by March 15, 2019, and lastly proposal part 3 was submitted by April 21, 2019. The project was presented on April 29, 2019 to Rutgers's faculty. The study was submitted to the IRB on July 31, 2019. IRB approval was granted on December 5th, 2019. Following IRB approval, the first email regarding the lunch and learn dates and information was sent out on January 2, 2020. Also on January 2, 2020, the charge nurse was provided with a script (see Appendix C) to deliver in the morning huddle daily, until all lunch and learn sessions were completed. A reminder email was sent out January 6, 2020 (see Appendix B). The three dates for the lunch and learn were Thursday, January 9, 2020, Saturday January 11, 2020, and Wednesday January 15, 2020. All data was collected via Qualtrics, the NYC hospital's online survey tool following each lunch and learn session. The data was analyzed following the completion of the third lunch and learn session on January 23, 2020. Final writing was completed on February 23, 2020. The presentation of the final project will be on March 30, 2020. Graduation from Rutgers's University is anticipated May 2020. Refer to Appendix I for project timeline.

Resources Needed and Economic Consideration

The costs associated with this project was the sole responsibility of the co-investigator. Costs include recruitment materials, educational handouts, and beverages/ light refreshments. Refer to Appendix J for budget breakdown.

Evaluation Plan

The co-investigator solely evaluated each of the 30 questions on the Barriers and Facilitators to Using Research in Practice survey answered by participants. The top 3 identified barriers and top 3 identified facilitators will be presented to the nurse manager of this NYC postpartum unit to evaluate how to address the barriers and how to use the facilitators to implement self-administration of medication program on the postpartum unit.

Data Analysis

The co-investigator evaluated the answers for each question on the survey, Barriers and Facilitators to Using Research in Practice. Questions 2-30 on the Barriers Scale were evaluated by identifying which questions had the greatest number of "to a great extent" responses. When participants selected "to a great extent" they were identifying the preceding question/statement as a barrier to implementing SAM. In contrast, the questions with the greatest number of "to no extent" responses were deemed facilitators to implementing the SAM program.

Data Maintenance and Security

To protect participants' identity when answering the survey entitled Barriers and Facilitators to Using Research in Practice, the participants were provided with an anonymous link to the survey and an anonymous QR code. In addition, participants were not asked for their name. The only identifying factor that was asked is if they are a registered nurse or a nurse practitioner. To access responses to the survey, this co-investigator will have sole access via the hospitals employee website. The hospitals website is secured with Citrix, a receiver that allows

secure access to hospital programs through an individualized employee login and password. Upon completion of the project, closure of the IRB, and final writing, all data will be destroyed in accordance with Rutgers University guidelines. There will be no physical data. All electronic data will be deleted upon the completion of this study.

Results

This section explores the results and participant demographics from the 30- question questionnaire entitled "Barriers and Facilitators to Using Research in Practice" by Sandra Funk (1991). All responses were collected on January 9th, 2020, January 11, 2020, and January 15th, 2020. All questions were mandatory to answer to complete the survey. Questions 1-30 each have 48 responses.

Participants

Question 1 on the 30- question questionnaire asked the participants to identify themselves as a registered nurse or nurse practitioner. These were the only two choices due to the set inclusion criteria: registered nurses or nurse practitioners working at this NYC hospital postpartum unit, available in person or by telephone on January 9th, 2020, January 11, 2020, and January 15th, 2020. Out of the 48 participants, 41 identified as postpartum registered nurses and 7 identified as postpartum nurse practitioners.

Analysis of Questions

Questions 2-30 correspond to a 5-point Likert scale. The Likert scale is as follows (1) to no extent (2) to a little extent (3) to a moderate extent (4) to a great extent (5) no opinion. Once all surveys were complete, the results of the questions were tallied in Qualtrics, the electronic system on which the survey was administered. The co-investigator identified the 3 questions that had the greatest number of (4) to a great extent responses. Those 3 questions were deemed the

most obstructive barriers to implementing the self-administration of medication (SAM) program. The co-investigator also identified the 3 questions that had the greatest number of (1) to no extent responses. Those 3 questions were deemed to be facilitators to implementing the SAM program. See Appendix N for a bar chart comparison of (1) to no extent responses versus (4) to a great extent responses for questions 2-30. An analysis of question 2-30 and response breakdown is located in Appendix O.

Top three barriers. 42 participants identified question 20; administration will not allow implementation, as a barrier. 27 participants identified question 14; the nurse does not feel she/he has enough authority to change patient care procedures, as a barrier. Lastly, 15 participants identified; question 29 stating the nurse does not feel capable of evaluating the quality of the research, as a third barrier.

Top three facilitators. 30 participants identified question 17; the nurse sees benefit for themselves, as a barrier to no extent. 20 participants identified question 21; the nurse does not see the value of research for practice, as a barrier to no extent. Lastly, 20 participants identified question 27; nurses' unwillingness to try new ideas, as a barrier to no extent.

Summary

An analysis of 48 postpartum nurse practitioners and postpartum registered nurses responses to the 30-question questionnaire was completed. The analysis of the questions helped the co-investigator understand what the postpartum NPs and RNs thought would inhibit and aid in the implementation of the SAM program on the postpartum unit. RNs and NPs identified lack of administration support, nurses feeling that they lack authority, and nurses not feeling capable of evaluating the quality of the research as barriers to implementing the SAM program. Nurses

seeing a benefit for themselves, nurses seeing the value of research in practice, and nurses willingness to try new ideas as facilitating factors.

Discussion

Postpartum pain will affect the nearly 4 million women giving birth in the United States and nearly 7,000 women at this metropolitan hospital annually (CDC, 2017). Since uncontrolled postpartum pain can impede upon the mother's ability to care for herself and her newborn, increase her incidence of postpartum depression, lead to increased opioid use, along with other adverse effects, effective postpartum pain control is crucial (Chestnut, 2019). The literature review revealed many positive benefits of having women self-administer their over-the-counter pain medications during their short postpartum hospitalization. Implementing SAM leads to improved pain relief, decreased wait times to receive medications, increased patient and nurse satisfaction, less patient interruptions, decreased narcotic use, and patients feel more prepared to care for themselves at home (Anderson & Poole, 1983; Green, Kuiper, Morosky, Wightman, & Curry, 1999; Macartney & Whyte, 1995; Parnell, 1959).

Since this model of distributing medication has many benefits, it was important to understand why SAM wasn't the gold standard in hospitals for postpartum women. The 48 surveyed postpartum RNs and postpartum NPs believed hospital administration, lacking authority as a nurse, and lack of confidence in evaluating quality of research as the three greatest barriers to implementing SAM on this NYC postpartum unit. In contrast, seeing benefit for nurses, nurses valuing the research for practice, and staff willingness to try new ideas were identified as facilitators by the 48 participants. The participants' identification of barriers and facilitators to implementing the SAM program at this institution achieved the study's objectives.

Limitations

The initial timeline of the study was pushed back a total of 3 months due to 11 IRB revisions and hospital site scheduling conflicts. The length of the IRB process was underestimated and led to a delay in the initiation of the study. The delays in obtaining IRB approval resulted in confusion and dissatisfaction with the study site. Once IRB approval was obtained, the conference room where the study was to take place was already reserved for the anticipated dates.

Recruiting RNs and NPs posed to be difficult due to the lunch and learns occurring during working hours. The desired sample size of 94 registered nurses and 8 nurse practitioners was not met, this study is unable to ensure a 2% margin of error and a 95% confidence level. The flow of a busy metropolitan hospital can seldom leave an RN or NP with 30 uninterrupted minutes. In addition, night RNs and NPs that had worked the night prior to the lunch and learn lacked enthusiasm to participate as they planned to sleep during the time the lunch and learn took place. Furthermore, a total of 9 RNs and 1 NP were scheduled to be on vacation during the study dates, which decreased the total number of participants for our study.

Strengths

While having participants for 30 uninterrupted minutes initially posed to be difficult, the postpartum management greatly helped. With their assistance, 12 more RNs were recruited to the study. The mother-baby nurse manager, postpartum nurse educator, and charge nurse provided RNs protected time to attend the study. They did so by stepping out of their roles to cover RN patient assignments. The nurse manager also extended our reservation of the conference room from 1pm to 4pm on January 9th, 2020, January 11, 2020, and January 15th, 2020 to allow for maximum attendance.

Recruitment materials were another strength of the study. Recruitment posters were strategically placed in high demand areas such as the staff break room and the staff bathroom. By placing the poster in these high trafficked areas, it increased exposure to the study. It also helped to generate a discussion about the topic and the study. Four of the participants had worked in hospitals where this program was implemented and 6 participants had delivered at a hospital where this program was implemented. This also increased interest in the study and fueled participation.

Utilizing the institution's electronic surveying system proved to be efficient, user friendly, and secure. Participants used the hospital issued iPhones to scan a QRL code that linked directly to the survey. Those who participated via telephone were provided a link to the survey via their hospital email. Participants commented on how streamline the survey was. The system also simplified data collection, which assisted in the analysis of the data. No user or technical difficulties were reported.

Future Research

With no other published studies that evaluate barriers and facilitators in implementing a SAM program on a postpartum unit, it limits the ability to compare and contrast results. Due to large metropolitan hospitals unique administration structure, this study's results may not apply to hospitals of smaller size and/or in more rural areas. It is recommended that this study be replicated at a smaller more rural hospital to compare barriers to implementing the SAM program. This study's design and survey tool can be easily replicated at other institutions to evaluate the barriers and facilitators to implementing the SAM program.

By evaluating other institution's barriers, it will help identify the barriers and how SAM programs can be implemented in hospitals of all sizes in the United States. This data could lead

to an ease of implementation at other hospitals, along with increased likelihood of success and longevity of the SAM program.

Process Evaluation

Following the conclusion of the study, a process evaluation was conducted. This allowed the study team to assess the study process and improve the study's value. While the study was delayed three months due to unforeseen roadblocks, the program was mostly implemented as planned. The SAM program was a topic of interest for many postpartum RNs and NPs and high interest in the program increased participation. Due to the high demand at this busy metropolitan hospital, finding nurses who could donate 30 minutes of time to this study proved challenging. The postpartum administration identified this as a barrier and stepped in to provide coverage. Their help enabled more participants to take part in the study. Delivering the educational component to the participants was streamlined with the assistance of a script. This allowed the co-investigator to stay on track, ensure all educational points were delivered to participants, and provide the same experience for all three-study groups.

By using the institution-provided iPhones, every participant had access to the survey once the QRL code was scanned. There were 0 reported technical issues related to accessing and using the survey. Participants verbalized satisfaction with the ease of use with the electronic survey. The hospital's electronic survey system simplified the data analysis. Overall, the study process and implementation were successful. While pre-arranging RN coverage for the study would have simplified the recruitment, the obstacle was quickly addressed. After concluding the process evaluation, this is a recommend process for others looking to recreate this study.

Implications for Nursing Practice

The results of this survey have implications to nursing practice at the local, state, and national level.

Clinical Practice

In the clinical setting where this study took place, the results caused the administrators to reevaluate the process in which evidenced-based literature was put into practice. In an effort to provide the highest quality patient care, an interdisciplinary collaborative team will be created. The team will consist of an obstetrician, physician assistant/ nurse practitioner, registered nurse, pharmacist and an administrator. The focus of this interdisciplinary team will be to implement all evidence-based measures into practice, including self-administration of medications (SAM).

Once the SAM program is put into place on the postpartum unit, it will be the first program of its kind at this hospital. Currently, this hospital allows patients to consume only medication, which a licensed provider has dispensed to them. The program has the ability to improve pain relief, decrease wait times to receive medications, increase patient and nurse satisfaction, decrease patient interruptions, decrease narcotic use, and help patients feel more prepared to care for themselves at home (Anderson & Poole, 1983; Green, Kuiper, Morosky, Wightman, & Curry, 1999; Macartney & Whyte, 1995; Parnell, 1959). These benefits can dramatically impact the patient's experience and healing process as well as impact the institution. Improved pain relief means the patient can increase their ambulation. Early ambulation promotes blood flow, decreases wound healing time, gastrointestinal function, and urinary tract function (University of Wisconsin, n.d.). Decreased wait times to receive medications allows the patient to consume the medication exactly when it is due. Less patient interruptions lead to more time to rest and bond with their newborn. Decreased narcotic use

reduces the number of patients that may experience the potential side effects. Patient satisfaction leads to improved Hospital Consumer Assessment of Healthcare Providers and Systems (HCHAP) scores and increase patient retention. Nurse satisfaction leads to improved workplace morale and increased nurse retention. Patients who feel more prepared to care for themselves at home will have more confidence to care for their baby.

Healthcare Policy

A national healthcare policy or guideline regarding how postpartum women should be administered medications in the hospital would standardize pain management protocols. This study could show the members of women's health organizations that evidenced-based practices aren't always being implementing in hospitals. These organizations have the ability to make position statements and set guidelines that influence the care that is provided to postpartum patients.

The American College of Obstetricians and Gynecologists (ACOG) is a professional membership organization composed of 58,000 members that strive to improve women's health (ACOG, n.d.). ACOG publishes committee opinions, clinical guidance, and practice bulletins on a variety of women's health topics. ACOG's current recommendations on postpartum pain include using nonpharmacologic (perineal cold packs, topical anesthetics, heat packs, sitz baths) and pharmacologic (Motrin and Acetaminophen) therapies simultaneously (2018). Unfortunately, the guidelines do not elaborate on how the pharmacological treatments should be administered to the patient.

Another organization that is dedicated to promoting the wellbeing of women and newborns is the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN). The hospital this study was conducted at follows many of AWHONN's

guidelines, such as postpartum obstetrical hemorrhage management, postpartum Pitocin management, breastfeeding and staffing ratios. Postpartum units look to AWHONN for guidelines and recommendations. AWHONN does not currently have a position out regarding postpartum pain management, however they make it clear that limiting opioid use is critical (AWHONN, 2019).

Quality & Safety

The results of this study showed that there are many identifiable barriers to implementing evidence-based measures, in particular, the SAM program. Although licensed healthcare providers look to the evidence-based research for recommendations on how to care for their patients, if its not being put into practice, the knowledge is wasted. Healthcare providers want to practice and provide the best care to their patients. Patients who receive evidence-based care have 28% better outcomes than those who do not (Melnyk, et al., 2016). This makes a strong argument for hospitals to implement evidence-based measures in a timely manner.

The many benefits the SAM program can lead to improvements in quality and safety. One very important safety benefit of the SAM program was the decrease in narcotic usage. Narcotics can lead to constipation, nausea, vomiting, abdominal pain, dizziness, headache, itching, and addiction (Benyamin, et al., 2008). By decreasing the number of narcotics being taken, it decreases the number of postpartum women that will have the common side effects associated with narcotics.

The SAM program would also standardize patient education related to medication indication, usage, dosing, and side effects. Currently, medication-related information is RN dependent. By providing cards in the SAM kit, the information about the medications would be standardized. Each patient will receive the same information and their understanding of the

medications will be tested using the teach-back method. The standardized medication and evaluation of knowledge will make administration of these medications safer.

Education

This study's third most recognized barrier to implementing the SAM program indicates that RNs and NPs do not feel capable of evaluating the quality of the research. If an RN or NP does not feel confident in his/her ability to read research, it is unlikely they will read it. RNs and NPs are recognized as leaders in healthcare and having these providers feel comfortable reading and evaluating evidence can only improve the safety of patients.

It is therefore recommended that institutions and universities promote the value of research. Since this institution identified difficulty evaluating research as a barrier to implementing the SAM program, a class on understanding how to evaluate research may promote reading research. If a class is not feasible, providing a step-by-step guide on how to evaluate research may also assist in helping RNs and NPs feel more confident. This confidence will lead to more RNs and NPs evaluating research and putting that research into practice.

Economic

Much time and productivity is spent on eliminating the identified barriers to implementing the SAM program when, as suggested in the study, the implementation of an interdisciplinary collaborative team to streamline the process of translating evidence into practice would reduce economic waste. A streamlined process will assist in providing patients with evidence-based care sooner, which will lead to better patient outcomes and decrease economic burden.

Evidence-based practice often leads to a cost savings for the organization because it is improving patient outcomes (Cullen & Hanrahan, 2018). Healthier patients do not need as many

healthcare resources. Hospitals and other organizations aren't the only ones to benefit from implementing evidence-based practice. Anderson & Poole performed a cost analysis and, following the implementation of the SAM program, there was an average decrease in cost of both inpatient and discharge medications of 40% per patient (1983). Eliminating healthcare-associated economic burden for patients is a priority, especially because of rising healthcare costs.

Sustainability

The completion of this study is not viewed as the finish, but rather the beginning. The results from this study will aid those implementing the self-administration of medication program. In addition, components of this study can be utilized when considering implementing other evidence-based practice measures.

Implementing SAM

The goal of this DNP study was for postpartum RNs and NPs to identify the barriers and facilitators of implementing SAM in their hospital. This goal was accomplished. However, this is the first step towards the greater goal of implementing the SAM program into place. The interdisciplinary collaborative team at this NYC hospital will evaluate the top 3 barriers and top 3 facilitators. It is important to have a representative from all disciplines involved in order to have a balanced discussion that can lead to compromise and resolution. Identifying obstacles and eliminating them beforehand will support the sustainability and ease of translation from evidence-based practice to execution on the unit.

Utilize the Survey

In this study, the "Barriers and Facilitators to Using Research in Practice" survey was used in relation to implementing a SAM program, however, the survey can be adapted to other

evidence-based measures. Using the analysis of the Barriers and Facilitators to Using Research in Practice survey allows for a collaborative effort to reduce and/or eliminate barriers and identify facilitators in implementing the SAM program. The hospital's interdisciplinary collaborative team will take a majority vote on June 12th, 2020 to see if, prior to the initiation of a new evidence-based practice measure, the RNs and those most involved in the measure participate in the survey. A majority vote in favor would change how evidence is translated into practice at this institution. It will give the RNs and NPs who are partaking in evidence translation at the bedside more input.

Future Scholarship

The dissemination of the findings will be discussed with the hospital's nurse manager, Joy Pavsic, on Tuesday, May 26th, 2020. The results will also be discussed at the High Reliability Organizations (HRO) meeting on Thursday, May 28th, 2020. This meeting is attended by postpartum nurses, the postpartum nurse manager, a representative from patient experience, the safety manager, the medical director of obstetrics, an obstetric attending, the mother-baby physician assistant, along with other members of the obstetric interdisciplinary team. By including these members of the obstetric team in the dissemination of the findings, it allows for continued collaboration in overcoming the identified barriers the SAM program.

The results will also be reported to Rutgers University community. The DNP final paper with be archived in the Rutgers University School of Nursing Library. The results will also be disseminated through a DNP project presentation on Monday, March 30th, 2020. In addition, this study's poster abstract will be submitted to the New Jersey State Nurses Association (NJSNA) and pending submission to the 2020 NJSNA/Institute for Nursing (IFN) Convention.

Once the hospital's interdisciplinary collaborative team approves the SAM program and it is implemented on the postpartum unit, the co-investigator will develop a publication to assist other institutions interested in implementing this program on their postpartum unit. A standardized process to instate this program and a protocol to follow will benefit other institutions as they move forward in making SAM the gold standard in caring for postpartum women.

Summary

The purpose of this study was for postpartum RNs and NPs to identify the barriers and facilitators to implementing a SAM program on a postpartum unit at a NYC hospital. The analysis of the "Barriers and Facilitators to Using Research in Practice" survey questions showed a disconnection between the evidence and what hospitals are doing. More importantly, it showed us why evidenced-based practice wasn't being translated into practice. The analysis of the results identified lack of administrative support, lack of authority to change patient care procedures, and the nurse not feeling capable of evaluating the quality of the research as barriers. In contrast, the nurses realized benefit for themselves, support of other staff members, and nurses' willingness to try new ideas as facilitators. These results prompted the creation of a hospital interdisciplinary team focused primarily on evaluating research and working towards getting evidence-based practice guidelines into hospital protocols.

While the literature endorses a self-administration of medication program for postpartum women, more advocacy must be done to make it the gold standard among US hospitals. With national support from an organization such as ACOG, hospitals would be challenged to reevaluate their postpartum pain management protocol and provide the best care for their patients.

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Appendices

Appendix A

Table of Evidence

EBP Question: The following appraisal of literature contributed to the project's clinical question: Will the implementation of the self-medication administration program at an NYC Hospital to postpartum mothers lead to increased pain control, increased communication about pain, and increased communication about pain medication?

Article #1	Anderson, K., & Poole, C. (1983). Correction: Self-Administered Medication on a Postpartum Unit. *The American Journal of Nursing,83*(10), 1384. doi:10.2307/3463374				
Author/ Date	**Study Type**	**Sample/ Sample Size/ Setting**	**Findings that help answer the EBP question**	**Limitation**	**Evidence Level/ Quality**
Anderson & Poole (1983)	Cross Sectional Study	Setting: Postpartum Unit at [redacted] in Seattle, Washington Physicians: 37 total were included however 27 accepted the program without change, 8	82% positive feedback, 13% neutral feedback, and 5% negative feedback More Tylenol #3 (4 tablets) was consumed by participants in the SAM program versus (2 tablets) prior to the implementation of the SAM program. This was statistically significant (p= 0.01). Patients liked taking analgesics as needed rather than waiting for staff, appreciated being educated on the drugs and usage, didn't feel	Patient statistics were not included such as race, age, number of previous births.	Level II/ Good Quality Sufficient sample size (230 patients) and consistent results (recommended postpartum units implement SAM)

		accepted it after making additions, and 2 rejected the program all together. Postpartum Patients: 230	pressure to take medications they felt unnecessary, appreciated being treated as responsible adults rather than helpless invalids. Also noted: Decreased cost of inpatient and discharge medications by 40% on average for each patient.		
Article #2	Beger, D., Messenger, F., & Roth, S. (1999). Self-Administered Medication Packet for Patients Experiencing a Vaginal Birth. *Journal of Nursing Care Quality,13*(4), 47-59. doi:10.1097/00001786-199904000-00006				
Author/ Date	**Study Type**	**Sample/ Sample Size/ Setting**	**Findings that help answer the EBP question**	**Limitation**	**Evidence Level/ Quality**
Beger, Messenger, & Roth (1999)	Cross Sectional Study	Sample Size: 33 vaginally delivered postpartum patients Setting: Postpartum unit at [redacted] in St. Louis, Missouri	97% of patients indicated that the nurse had provided them educationally with information about the packet and the medications. 100% of patients stated they had the correct amount of medication during their hospitalization. 100% of patients were satisfied with the self-administrated medication program. 88% of patients had medication left to take home. 13% of patients took one or more narcotics 6 months after the implementation of SAM as compared to 80% of patients prior	Small sample size Only vaginal patients partook in SAM	Level II/ Good Quality Small sample size (33 postpartum women) but sufficient for study design, consistent results, consistent recommendation (recommended postpartum units implement SAM)

			to SAM.		
Article #3	East, N., Dubé, J., & Perreault, É. (2007). Postpartum Pain Relief: A Randomized Comparison of Self-Administered Medication and Standard Administration. *Journal of Obstetrics and Gynaecology Canada,29*(12), 975-981. doi:10.1016/s1701-2163(16)32683-4				
Author/ Date	**Study Type**	**Sample/ Sample Size/ Setting**	**Findings that help answer the EBP question**	**Limitation**	**Evidence Level/ Quality**
East, Dubé, & Perreault (2007)	Randomized Control Trial	Setting: Postpartum unit at [redacted] in Montreal, Canada 345 postpartum women 197 vaginally delivered women 133 caesarean delivered women 11 women lost in follow-up Exclusion criteria: age younger than 18 years, previous or current drug abuse, allergy to	<u>Vaginally Delivered</u> 92.50% of SAM participants vs. 85.07% of standard participants liked the way they received their medication (p=0.29). 93.75% of SAM participants vs. 76.25% of standard participants received their medication when needed (p =0.48) 90.12% of SAM participants vs. 86.76% of standard participants felt their pain relief was appropriate during their stay (p =0.61). 6.25% of SAM participants vs. 42.42% of standard participants preferred having an RN distribute the medications (p = <0.001). 93.33% of SAM participants vs. 63.63% of standard participants would choose the same method again (p =<0.001). 94.74% of SAM participants vs. 75.00% of standard participants felt in	11 patients lost in follow-up Pain scores were not consistently recorded by the nurses and the patients No record of how many patients declined the randomized control trial.	Level I/ High Quality Sufficient sample size (334 postpartum women), adequate control (RCT), consistent recommendations and definitive conclusions (recommended postpartum units implement SAM)

		one of the medications, inability to read and understand French, and inability to provide informed consent.	control of their pain relief (p =0.003). 12% of SAM participants vs. 3.13% of standard participants did not take any pain medication (p= 0.02). <u>Caesarean Delivered</u> 91.84% of SAM participants vs. 78.57% of standard participants liked the way they received their medication (p=0.19). 87.76% of SAM participants vs. 83.33% of standard participants received their medication when needed (p =0.61) 93.75% of SAM participants vs. 88.10% of standard participants felt their pain relief was appropriate during their stay (p =0.46). 18.37% of SAM participants vs. 39.02% of standard participants preferred having an RN distribute the medications (p = 0.003). 87.50% of SAM participants vs. 57.50% of standard participants would choose the same method again (p =0.005). 95.83% of SAM participants vs. 65.00% of standard participants felt in control of their pain relief (p =0.001). 20.00% of SAM participants vs. 13.34% of standard participants did not take		

			any pain medication (p= 0.29).		
Article #4	Greene, J. F., Kuiper, O., Morosky, M., Wightman, S., & Curry, S. L. (1999). A Postpartum Self-Medication Program: Effect on Narcotic Use. *Journal of Womens Health & Gender-Based Medicine,8*(8), 1073-1076. doi:10.1089/jwh.1.1999.8.1073				
Author/ Date	**Study Type**	**Sample/ Sample Size/ Setting**	**Findings that help answer the EBP question**	**Limitation**	**Evidence Level/ Quality**
Green, Kuiper, Morosky, Wightman, & Curry (1999)	Retrospective Study	Setting: Postpartum Unit at [redacted] in Hartford, Connecticut Sample size: 263 women in January 1997 (prior to SAM program) & 254 women in January 1998 (After implementation of SAM program). Inclusion: English-speaking, full-term vaginal	The mean number of narcotic tablets used by patients in group I was 9.23 vs 2.01 in group II (p <0.001). 82.5% of women in group I used one or more narcotics during their hospitalization vs. 40% in group II.	Unblinded study, which is subject to bias. Healthcare providers may have introduced bias by reluctance to use narcotic medication for pain control.	Level II/ High Quality Sufficient sample size (517 postpartum women total), definitive conclusions (women who participated in SAM consumed less narcotics), consistent recommendations (recommended postpartum units implement SAM to decrease narcotic use)

		delivery in January 1997 & January 1998 Exclusion: Premature delivery, caesarean delivered, postpartum tubal ligation, or complicated postpartum course requiring a length of stay greater than 2 days.			
Article #5	Herman, K. (1974). Principles and Practice Self-Medication Administration. *Journal of Obstetric, Gynecologic, & Neonatal Nursing,*27-30.				
Author/ Date	**Study Type**	**Sample/ Sample Size/ Setting**	**Findings that help answer the EBP question**	**Limitation**	**Evidence Level/ Quality**
Herman (1974)	Randomized Control Trial	Setting: Postpartum Unit at [redacted] in Minneapolis, Minnesota	When postpartum primiparas independently self-administer medications they do it responsibly. When patients are allowed to self-medicate they take less analgesic medication.	Small sample size. Only one medication, Darvon, was included for postpartum	Level I/ Good Quality Adequate control (RCT), small sample size (22 postpartum women but

		Sample Size: 9 obstetricians on the [redacted] staff permitted the use of SAM for their patients 22 postpartum women total -- 11 self-administered 11 received medication from the nurse Inclusion Criteria: between 18 and 35 years of age, vaginal deliveries, competent to self-administer medication.	Patients experience less pain when medications are at their immediate disposal as compared to waiting for a nurse to distribute to them. Patients respond to pain relief more rapidly and for a longer duration when they self-administer an analgesic. Patients who are given the option to self-administer medications respond to it very positively.	patients to self-administer. Excluded mothers >35 years of age and caesarean delivered patients.	sufficient for study design), consistent results and recommendations (recommended postpartum units implement SAM)
Article #6	Jankowski, H., & Wells, S. M. (1987). Self-Administered Medications For Obstetric Patients. *MCN, The American Journal of Maternal/Child Nursing,12*(3), 199-203. doi:10.1097/00005721-198705000-00011				
Author/ Date	**Study Type**	**Sample/ Sample Size/ Setting**	**Findings that help answer the EBP question**	**Limitation**	**Evidence Level/ Quality**

Jankowski & Wells (1987)	Cross Sectional Study	Setting: [redacted] in Columbia, Missouri 18 patients over 1.5 months Age Range: 17-34 (mean=24) 9 were primigravida 9 multigravida	Discussed how to implement self-administration of medications. 94% stated the medication program was explained to them "clearly in all areas." 100% stated they would participate in the SAM program again 100% stated the nurses helped them understand the indications for the medication 100% stated nurses taught them how to take their medication 100% stated the medication cards told them what they needed to know about their medications 100% agreed that taking their own medications in the hospital made it easier to take their medications at home	Sample size very small No advanced maternal age (AMA) (35 or older) patients were included in the study.	Level II/ Good Quality Small sample size (18 postpartum women but sufficient for study design), adequate control (implementing SAM), consistent recommendations (recommended postpartum units implement SAM)
Article #7	Macartney, S., & Whyte, M. (1995). New Moms and Self Medication. *The Canadian Nurse,91*(9), 47-48.				
Author/ Date	**Study Type**	**Sample/ Sample Size/ Setting**	**Findings that help answer the EBP question**	**Limitation**	**Evidence Level/ Quality**

Macartney & Whyte (1995)	Non-Research	The Grace Hospital in Canada Sample size: > 3,000 since its implementation in 1993.	Discussed how to implement self-administration of medications. Postpartum mothers appreciate being empowered to administer their own medications. Patient comments on SAM: "I like being treated like an adult: "I didn't have to bother the nurse." "I have it when I need it." "This is how it will be when I'm home." 85% reduction in the use of acetaminophen with codeine 30mg.	Not applicable to this body of literature.	Not applicable to this body of literature.
Article #8	Parnell, M. A. (1959). Medicines at the Bedside. *The American Journal of Nursing,59*(10), 1417. doi:10.2307/3418020				
Author/ Date	**Study Type**	**Sample/ Sample Size/ Setting**	**Findings that help answer the EBP question**	**Limitation**	**Evidence Level/ Quality**
Parnell (1959)	Non-Research	Cleveland Clinic, Cleveland, Ohio Sample size: unknown	Discussed how to implement self-administration of medications. Registered nurses have more time to provide mothers with reassurance and instructions.	Not applicable to this body of literature.	Not applicable to this body of literature.

			Postpartum patients have been enthusiastic about the program.		
Article #9	Richardson, S. J., Brooks, H. L., Bramley, G., & Coleman, J. J. (2014). Evaluating the Effectiveness of Self-Administration of Medication (SAM) Schemes in the Hospital Setting: A Systematic Review of the Literature. *PLoS ONE,9*(12). doi:10.1371/journal.pone.0113912				
Author/ Date	**Study Type**	**Sample/ Sample Size/ Setting**	**Findings that help answer the EBP question**	**Limitation**	**Evidence Level/ Quality**
Richardson, Brooks, Bramley, & Coleman (2014)	Systematic Review	Sample Size: 43 papers (6 RCTs, 4 Prospective cohort, 8 Non-RCTs, 5 Cross-sectional, 1 Cohort, 11 Case series, & 8 Before-and-after.) Inclusion Criteria: Evaluations of SAM schemes implemented in a hospital inpatient setting Exclusion Criteria: studies that had patients	19 studies assessed patients' knowledge of their own medication. 8 out of 19 of those studies reported significant improvement in knowledge attributed to participation in SAM. 19 studies assessed patient satisfaction with the SAM program. 16 of the studies reported an increase in patient satisfaction. 5 studies reported an overall satisfaction level of 90% to 100%.	19 out of 42 final studies were identified through hand-searching after electronic searches were complete. Language bias due to using English-language search terms	Level II/ Good Quality Sufficient sample size (43 studies), fairly definitive conclusions (SAM lead to increased patient satisfaction however it is inconclusive about its effects on patients' knowledge about medication), consistent recommendations (recommended postpartum units implement SAM)

		whom were assisted by caregivers, studies that had drugs that were as needed by patients (PRN), studies that described outpatient or community-based interventions, and studies where patients would use their own medications not dispensed by the hospital.			
Article #10	Schérer, H., Bernier, E., Rivard, J., Yu, L., Duchesne-Côté, G., Lebel, D., . . . Ferreira, E. (2016). Self-administered medications in the postpartum wards: A study on satisfaction and perceptions. *Journal of Evaluation in Clinical Practice,23*(3), 540-547. doi:10.1111/jep.12666				
Author/ Date	**Study Type**	**Sample/ Sample Size/ Setting**	**Findings that help answer the EBP question**	**Limitation**	**Evidence Level/ Quality**
Schérer, et al. (2016)	Prospective 1-group mixed methods survey	Setting: Postpartum unit a [redacted] in Montreal,	97% rate of satisfaction of the SAM program 80% self-reported median overall improvement of pain.	Design did not allow for a thorough exploration of characteristics	Level II/ Good Quality Adequate sample size (314

		Canada 314 postpartum women Age range: 19-47 (median = 33) 54.5% multiparous Inclusion criteria: delivered a live newborn, understood French or English, able to provide a written informed consent, without present or past history of substance abuse, were at least 18 years old.	18% of vaginally delivered women and 32% of caesarean delivered women would have preferred a nurse to dispense medication (P = .009)	linked with suboptimal satisfaction on pain relief. Evaluation of satisfaction and perceptions of nurses and other healthcare professionals was beyond the scope of the study.	postpartum women), some control (implementing SAM program), consistent recommendations (recommended postpartum units implement SAM)

Appendix B

Recruitment Email

Dear Registered Nurses and Nurse Practitioners,

You are invited to attend one of three lunch and learns on Thursday, January 9, 2020, Saturday, January 11, 2020, and Wednesday January 15, 2020, in the 13 West conference room. During the lunch and learn, participants will be presented with literature on self-administration of medication, along with how it could be implemented into current workflow. Participants will then be asked to fill out a questionnaire entitled "Barriers and Facilitators to Using Research in Practice" by Sandra Funk. Your answers will help identify barriers and facilitators to implementing the self-administration of medication on this postpartum unit. Your input is valuable and may assist in leading to practice change. Light refreshments and snacks will be provided.

For questions, comments, and concerns please email me at [redacted]

Thank you,

Michelle Romagnoli

Appendix C

Charge Nurse Script

You are invited to attend one of three lunch and learns on Thursday, January 9, 2020, Saturday, January 11, 2020, and Wednesday January 15, 2020 in the 13 West conference room. When filling out your schedule please plant to work one of these three dates. Michelle Romagnoli will be presenting evidence on literature on self-administration of medication along with how it could be implemented into current workflow. You will then be asked to fill out a questionnaire entitled "Barriers and Facilitators to Using Research in Practice" by Sandra Funk. Your answers will help identify barriers and facilitators to implementing the self-administration of medication on this postpartum unit. Your input is valuable and may assist in leading to practice change. Light refreshments and snacks will be provided.

Appendix D

Recruitment Flyer

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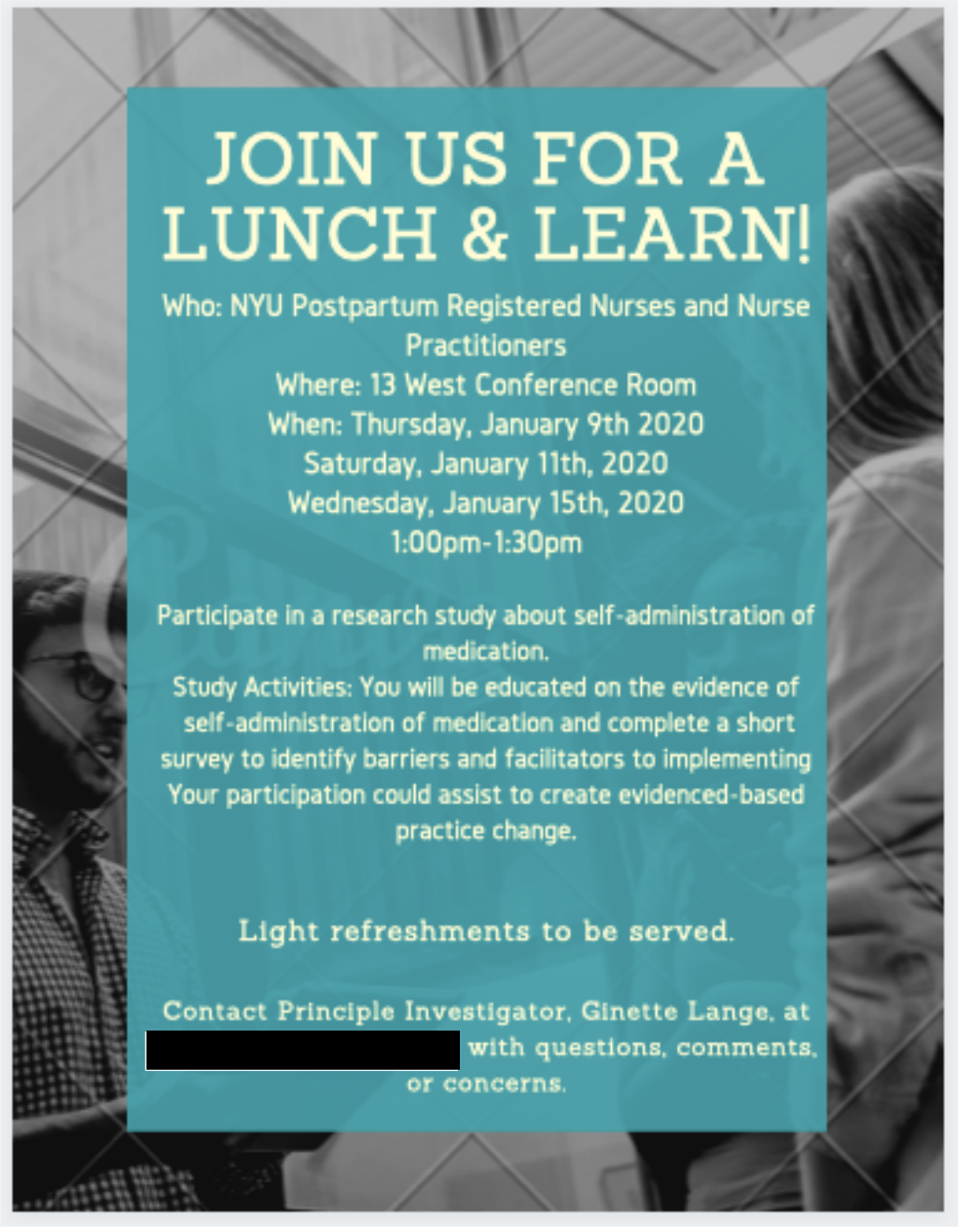

Appendix E

v2019 v1 p2

Self-Administration of Medication Program Script

The initial delivery of information about the self-administration program would be through the hospital orientation class "Ready, Set, Baby" that is offered to expecting parents who are deciding where to deliver, or have decided to deliver, at this New York City hospital. The instructor, whom is a nurse educator, will introduce the concept of self-administration of medication by describing the process and by presenting a sample SAM kit to show the expecting parents. This orientation class is free of charge and is held twice a month.

Upon admission to 13West, patients will be introduced to self-administration of medication. The SAM kit, including the information card and medication log, will be reviewed with the patient and her partner. The information card will describe in plain language the medications in the SAM kit, the reason to take each medication, side effects, dosage, and frequency. This will help to standardize the education about pain medication so each patient consistently receives the same information. To ensure the patient fully understands the information and their responsibility, a consent form will be signed and placed in the patient's chart. Potential participants will be informed that participation in this program is voluntary and their decision on participation will not impact the usual care provided.

For the recruitment, all participants in the SAM program will be women who deliver at this specific NYC hospital making the sample a convenience sample. Since the implementation of SAM is occurring only within the hospital, the patient will have 24-hour access to a registered

nurse to address questions and/or concerns regarding the SAM program. Patients are also provided with the Nurse Manager's email and phone number in case they have feedback they would like to discuss personally or following their discharge. Women who are eligible and participate in the SAM program will receive a SAM kit daily along with the necessary education. The SAM kit will be billed to the patient's insurance. The participants will not receive any other physical or monetary compensation.

Appendix F

v2019 v1 p1

Medication Information Sheet

Medication	Side Effects
Motrin/ Ibuprofen Indication: Pain *Max dose in 24 hours: 4 tablets (2400mg)*	Belly pain, heartburn, upset stomach, throwing up, hard stools (constipation), loose stools (diarrhea), gas, dizziness
Tylenol/ Acetaminophen Indication: Pain *Max dose in 24 hours: 8 tablets (2600mg)*	Upset stomach, throwing up, not able to sleep, headache, hard stools (constipation)
Gas-X/ Simethicone Indication: Gas Pain *Max dose in 24 hours: 4 tablets (320mg)*	Upset stomach, hard stools (constipation), loose stools (diarrhea), headache
Colace/ Docusate Sodium Indication: Constipation *Max dose in 24 hours: 3 tablets (300mg)*	Stomach cramps
Prenatal Vitamin Indication: Pain *Max dose in 24 hours: 1 tablet*	Hard stools (constipation), upset stomach, throwing up, change in color of stool to green, loose stools (diarrhea), belly pain

Appendix G

v2019 v1 p1

Daily Medication Log

Medication Information	**Time Medication was Taken**	**Time Medication was Taken**	**Time Medication was Taken**	**Time Medication was Taken**
Motrin 600mg every 6 hours *Indication: Pain* Max dose in 24 hours: 4 tablets (2400mg)				
Tylenol 650mg every 6 hours *Indication: Pain* Max dose in 24 hours: 8 tablets (2600mg)				
Simethicone 80mg every 6 hours *Indication: Gas Pain* Max dose in 24 hours: 4 tablets (320mg)				
Colace 100mg 3 times a day *Indication: Constipation* Max dose in 24 hours: 3 tablets (300mg)				
Prenatal Vitamin 1 time per day Max dose in 24 hours: 1 tablet				

Appendix H

v2019 v1 p1

Patient SAM Consent Form

I am voluntarily participating in the self-administration of medications.

By consenting to this form I understand…

- How to self-administer my own medications.
- The indication, dose, route, frequency, and side effects of all medications in the SAM kit.
- I must take the medications as prescribed.
- The medications must be kept in the zipped bag at all times.
- The SAM kit must be kept in the locked cabinet when I am not accessing them.
- If my pain control is not adequate with the medications in the SAM kit, I will notify my nurse.
- The medications in the SAM kit are for my use only.
- I have received the medication information sheet and medication log.
- I will utilize the medication log to keep track of when I take my medications.
- I may withdraw from the program at any time by informing my nurse.
- If I am unable to comply with the instructions of the SAM program my participation in the SAM program will be terminated.

X_____

Patient Signature

_____ _____

Date **Time**

X_____

Registered Nurse Signature

_____ _____

Date **Time**

Appendix I

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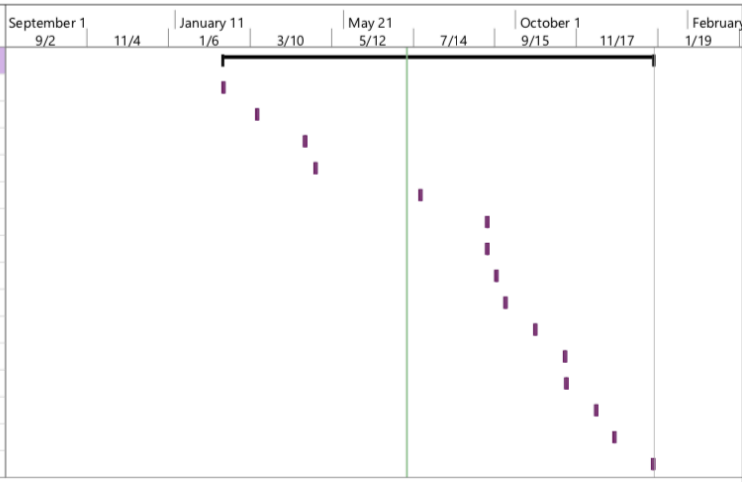
Project Timeline

ID	Task Name	Finish
1	**Schedule for Project Timeline**	**Wed 1/15/20**
2	Proposal Development 1	Sun 2/17/19
3	Proposal Development 2	Fri 3/15/19
4	Proposal Development 3	Sun 4/21/19
5	Project Presentation	Mon 4/29/19
6	IRB Submission	Fri 7/19/19
7	Lunch and Learn Email	Mon 9/9/19
8	Charge Nurse Provide Script at Huddle	Mon 9/9/19
9	Lunch and Learn Reminder Email	Mon 9/16/19
10	Lunch and Learn 1	Mon 9/23/19
11	Lunch and Learn 2	Wed 10/16/19
12	Lunch and Learn 3	Fri 11/8/19
13	Analyze Survey Results	Sat 11/9/19
14	Final Writing	Mon 12/2/19
15	Final Presentation	Mon 12/16/19
16	Rutgers Graduation	Wed 1/15/20



Appendix J

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Budget

Expense	Cost	Total Cost
Recruitment Materials	4 copies @ $0.05	$0.20
Educational Handouts	42 copies @ $0.05	$2.10
Beverages/ Light Refreshments	3 sessions x $30	$90
TOTAL BUDGET		**$ 92.20**

Appendix K

v2019 v1 p5

Barriers and Facilitators to Using Research in Practice

1. **Which title do you practice under?**
   - A. Nurse Practitioner
   - B. Registered Nurse
2. **For Question 2-30, select the response that best represents your view of the self-administration of medication program. Research reports/articles are not readily available.**
   - A. To no extent
   - B. To a little extent
   - C. To a moderate extent
   - D. To a great extent
   - E. No opinion
3. **Implications for practice are not made clear**
   - A. To no extent
   - B. To a little extent
   - C. To a moderate extent
   - D. To a great extent
   - E. No opinion
4. **Statistical analyses are not understandable**
   - A. To no extent
   - B. To a little extent
   - C. To a moderate extent
   - D. To a great extent
   - E. No opinion
5. **The research is not relevant to the nurse's practice**
   - A. To no extent
   - B. To a little extent
   - C. To a moderate extent
   - D. To a great extent
   - E. No opinion
6. **The nurse is unaware of the research**
   - A. To no extent
   - B. To a little extent
   - C. To a moderate extent
   - D. To a great extent
   - E. No opinion

7. The facilities are inadequate for implementation

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

8. The nurse does not have time to read research

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

9. The research has not been replicated

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

10. The nurse feels the benefits of changing practice will be minimal

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

11. The nurse is uncertain whether to believe the results of the research

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

12. The research has methodological inadequacies

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

13. The relevant literature is not compiled in one place

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

14. The nurse does not feel she/he has enough authority to change patient care procedures

A. To no extent

B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

15. The nurse feels results are not generalized to own setting

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

16. The nurse is isolated from knowledgeable colleagues with whom to discuss the research

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

17. The nurses sees little benefit for self

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

18. Research reports/articles are not published fast enough

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

19. Physicians will not cooperate with implantation

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

20. Administration will not allow implementation

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

21. The nurse does not see the value of research for practice

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent

E. No opinion

22. There is not a documented need to change practice

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

23. The conclusions drawn from the research are not justified

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

24. The literature reports conflicting results

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

25. The research is not reported clearly and readably

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

26. Other staff are not supportive of implantation

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

27. The nurse is unwilling to change/try new ideas

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

28. The amount of research information is overwhelming

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

29. The nurse does not feel capable of evaluating the quality of the research

A. To no extent
B. To a little extent

C. To a moderate extent
D. To a great extent
E. No opinion

30. There is insufficient time on the job to implement new ideas

A. To no extent
B. To a little extent
C. To a moderate extent
D. To a great extent
E. No opinion

Appendix L

AGREEMENT TO USE THE BARRIERS SCALE

I agree to the conditions included in the document "Permission to use the BARRIERS Scale"

Name: Michelle Romagnoli

Title: Obstetric Nurse Practioners and Registered Nurses Perspectives on the Barriers and Facilitators of Implementing Self-Administrating Medication Program on a Mother-Baby Unit at an NYC Hospital

Academic/business affiliation: Rutgers University and [redacted]
E-mail address: [redacted]

Postal Address: [redacted]

Phone Number: [redacted]

Study Title: Obstetric Nurse Practioners and Registered Nurses Perspectives on the Barriers and Facilitators of Implementing Self-Administrating Medication Program on a Mother-Baby Unit at an NYC Hospital

Brief Description of Study:

Postpartum registered nurses and nurse practioners will be educated on the self-administration of medication literature and how it could be adapted into current workflow by this principle investigator. The registered nurses and nurse practitioners will then be surveyed to identify barriers to implementing the self-administration of medication on this unit.

Signature: *Michelle Romagnoli* Date 07/08/19

E-mail to:
[redacted]

Please keep a copy of this form in your files. You automatically have permission to use the scale and do not need a response from the authors.

Appendix M

Site Letter of Cooperation

Date: *[04/17/2019]*

Re: Letter of Cooperation For [redacted]

This letter confirms that that I, as an authorized representative of [redacted], allow the Principal Investigator, *Michelle Romagnoli*, access to conduct study related activities at the listed site(s), as discussed with the Principal Investigator and briefly outlined below, and which may commence when the Principal Investigator provides evidence of IRB approval for the proposed project.

- **Research Site(s):** [redacted]
- **Funding Agency:** [redacted] *Mother-Baby Unit*
- **Study Purpose:** *To identify barriers and facilitators to implementing a self-administration of medication program.*
- **Study Activities:** *This study will have two phases of activities. Phase 1: Education of the postpartum nurse practitioners and registered nurses regarding the literature about self-administration of medication and how it would affect workflow. Phase 2: Surveying the postpartum nurse practitioners and registered nurses about the barriers and facilitators of the self-administration of medication program.*
- **Subject Enrollment:** *The desired sample size is 106 postpartum registered nurses and 6 postpartum nurse practitioners. Inclusion criteria includes registered nurse or nurse practitioner working at this NYC hospital postpartum unit, available in person or by telephone on Monday, September 23, 2019; Wednesday October 16, 2019; or Friday November 8th, 2019. Exclusion criteria include ancillary staff, physician's assistant, and medical doctors.*
- **Site(s) Support**: *The site will provide the space needed, the postpartum conference room, to conduct the education and survey.*
- **Data Management:** *The "Barriers and Facilitators to Using Research in Practice" survey will be secured on Qualtrics. The survey will only identify the respondent by asking if they are a nurse practitioner or registered nurse. The hospitals website is secured with Citrix and an individualized employee login and password. Upon completion of the project, closure of the IRB, and final writing all data will be destroyed in accordance with Rutgers University guidelines. Physical copies of consents and cumulative data will be stored in the DNP office at Rutgers University at 65 Bergen Street Newark, New Jersey.*
- *The questions will be evaluated utilizing SPSS system with a one-tailed t-test with a 0.05 significance level and a 95% confidence level. Data will be shared with Joy Pavsic, nurse manager.*
- **Anticipated End Date:** *Research data will be collected from September 23rd 2019 to November 8th, 2019.*

We understand that this site's participation will only take place during the study's active IRB approval period. All study related activities must cease if IRB approval expires or is suspended. I understand that any activities involving Personal Private Information or Protected Health Information may require compliance with HIPAA Laws and Rutgers Policy.

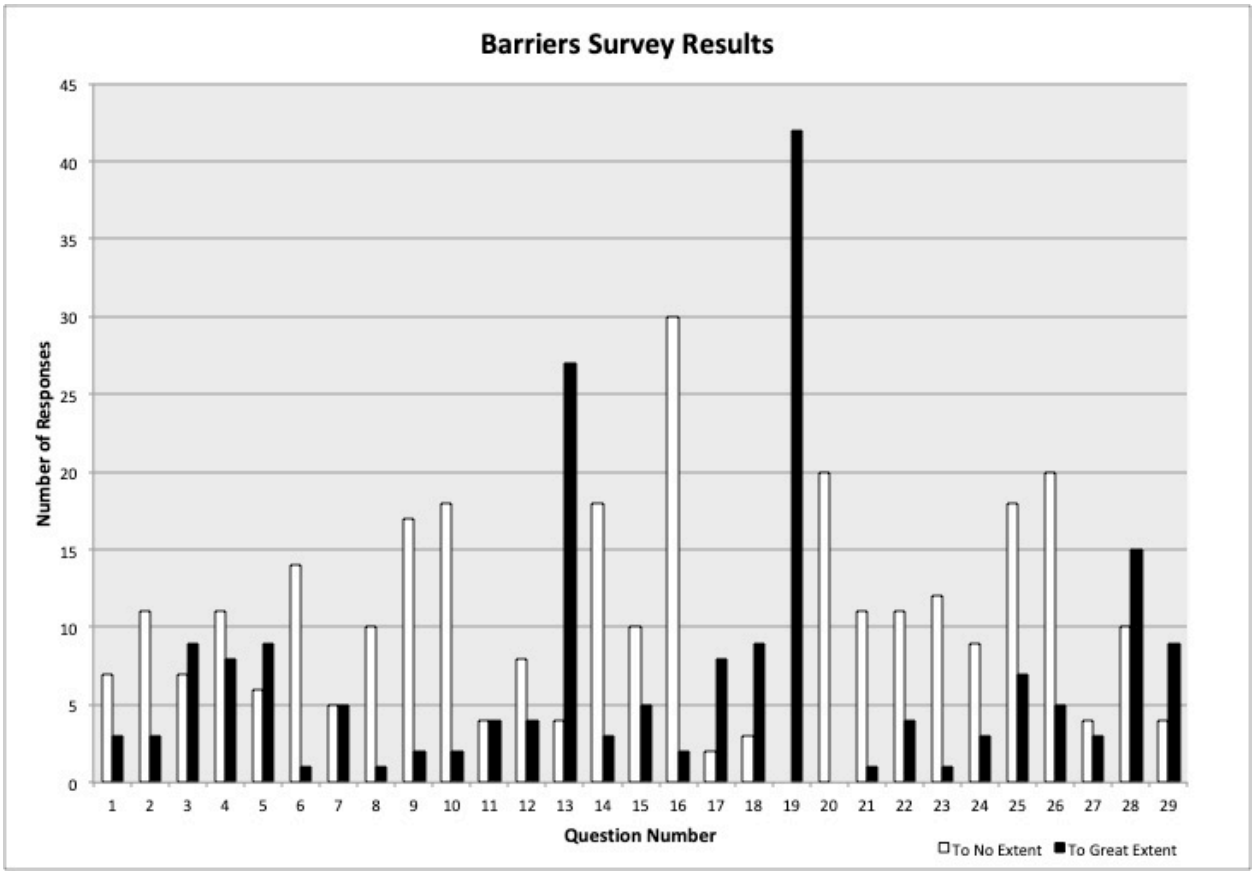
Our organization agrees to the terms and conditions stated above. If we have any concerns related to this project, we will contact the Principal Investigator. For concerns regarding IRB policy or human subject welfare, we may also contact the Rutgers IRB (see orra.rutgers.edu/hspp).

Regards,

[redacted]

Appendix N

Barriers Survey Results Bar Graph



Appendix O

Barriers Survey Results Table

Table 1

Barriers and Facilitators to Using Research in Practice Survey

Results

Question #	To No Extent	To a Little Extent	To a Moderate Extent	To Great Extent	No Opinion	Total # of Respondents
2	7	21	11	3	6	48
3	11	14	17	3	3	48
4	7	16	15	9	1	48
5	11	18	9	8	2	48
6	6	19	9	9	5	48
7	14	20	7	1	6	48
8	5	14	16	5	8	48
9	10	19	10	1	8	48
10	17	16	10	2	3	48
11	18	16	7	2	5	48
12	4	17	9	4	14	48
13	8	21	11	4	4	48
14	4	8	8	27	1	48
15	18	13	8	3	6	48
16	10	11	19	5	3	48
17	30	9	5	2	2	48
18	2	17	14	8	7	48
19	3	10	23	9	3	48
20	0	1	3	42	2	48
21	20	17	6	0	5	48
22	11	17	14	1	5	48
23	11	14	13	4	6	48
24	12	14	13	1	8	48
25	9	18	11	3	7	48
26	18	11	11	7	1	48
27	20	11	8	5	4	48
28	4	14	20	3	7	48
29	10	12	10	15	1	48
30	4	19	15	9	1	48