Recommendations for Breast Feeding Mothers after Anesthesia: a Quality Improvement Project

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Abstract

Quality improvement projects aim to address a clinical issue and subsequently improve patient care. Projects may improve or promote safe care, interpersonal care aspects, and life quality.[1] The clinical issue addressed by this project was the lack of consistent, evidenced based, instructions for the resumption of breastfeeding following an anesthetic provided to mothers by anesthesia providers. This inconsistency was frustrating to patients and other health care providers within the hospital setting. The goal of this project was to bring consistency to the evidenced based recommendations for resumption of breastfeeding after outpatient anesthesia made by anesthesia providers and RNs in the Outpatient Surgery Department. A Plan-Do-Study-Act (PDSA) Model was utilized to organize and study the overall effects of this quality improvement project.[2]

Keywords: breastfeeding, anesthesia, surgery, commonly administered anesthetic drugs, discharge instructions, nursing infants, and effects of anesthesia on lactation.

Problem

At Bryan Medical Center in Lincoln, Nebraska, many breastfeeding mothers were given inconsistent recommendations for the resumption of breastfeeding following a general anesthetic. The three most commonly made recommendations were to (1) collect breast milk via a pump for 24 hours after the anesthetic and discard the milk, (2) collect and discard the breast milk at least once following the anesthetic, and (3) resume breastfeeding as soon as the mother was alert enough to safely feed the baby. These recommendations are conflicting, and the first and second recommendation do not reflect the most current evidence. Often more than one anesthesia provider would interact with the mother resulting in conflicting recommendations being made. This conflicting information was frustrating and potentially increased anxiety in the mother.

Many mothers struggle with breastfeeding their baby. It is estimated about two-thirds of mothers cannot maintain breastfeeding for the length of time originally planned.[3] The Centers for Disease Control surveyed new mothers and although 85% planned to breastfeed for at least three months, fewer than a third reached this goal.[3] Mothers who are obese or smoke cigarettes, or who had set goals for breastfeeding longer than three months, are at an even higher risk of failing to meet their breastfeeding goals. Another major contributor to the failure of breastfeeding is the perceived encouragement by hospitals to feed formula by the distribution of formula or pacifiers to mothers at discharge.[3] Anesthesia providers should consider all the obstacles a mother must overcome to successfully breastfeed. Encouraging discarding breastmilk is not evidence based and will only increase the risk of early breastfeeding cessation.

Currently there is no standardized patient education plan for breastfeeding mothers regarding resumption of breastfeeding following an anesthetic at Bryan Medical Center. The first goal of this project was to inform anesthesia providers of the current evidenced based recommendations regarding resumption of breastfeeding. The second goal was to have all anesthesia providers communicate the same consistent evidenced based recommendation.

Current Research

Many researchers have evaluated the accumulation of medications in breast milk and the effects these medications may have on the nursing infant. Several of these researchers suggest it is safe to resume breastfeeding as soon as the mother is alert enough to breastfeed independently. Medications commonly administered in the perianesthesia period will be reviewed.

General anesthetics include inhalation agents such as desflurane, isoflurane, or sevoflurane. These medications are rapidly eliminated by alveolar ventilation after the agent is discontinued at the conclusion of the anesthetic. They have been found to have no clinically significant accumulation in breastmilk. Therefore, inhalation agents can be safely administered to lactating women.[4,5]

Neuromuscular blocking drugs are commonly administered to produce a good intubating environment and profound muscle relaxation for surgical procedures where movement is not desired. Neuromuscular blocking agents are quaternary ammonium compounds, and they have poor lipid solubility. They do not pass into breast milk and are safe for use in lactating women as well.[4,5,6] After administration of neuromuscular blockers, it is sometimes necessary to administer a cholinesterase inhibitor or

anticholinesterase drug to reverse the neuromuscular blockade. Neostigmine was found to be safe for use as this medication is a quaternary ammonium drug as well, prohibiting passage into breast milk. [5] Atropine and glycopyrrolate are administered to counteract the increase in acetylcholine that occurs with the administration of anticholinesterases. Atropine was found in trace amounts in breast milk, but researchers have deemed its' use to be safe. [4,5] Glycopyrrolate has also been deemed appropriate to use.[5] Sugammadex is the newest reversal medication for aminosteroid nondepolarizer muscle blocking drugs. There is no human data related to accumulation in breast milk, but researchers have considered it safe for administration in lactating women.[5]

Opioids are another commonly administered medication given to provide analgesia to patients during the perioperative time frame. The recommendations for opioid administration are more complex compared to inhalation agents and neuromuscular blocking agents. Several opioids are thought to be safe by researchers while others should be avoided. Fentanyl is one of the most common opioids utilized during an anesthetic due to the fast onset and short duration of action. A single dose of fentanyl has been found to be safe and mothers are also commonly prescribed fentanyl patches for chronic pain while lactating.[4,5,6] Fentanyl administered by both an intravenous route or via an epidural is deemed safe. Limiting epidural fentanyl doses following delivery to 150mcg or less is recommended as exceeding 150mcg is associated with earlier cessation of breastfeeding.[5,7] Remifentanil is considered safe, and the effects of sufentanil in breast milk are unknown.[4]

Morphine is a longer acting opioid with an active metabolite, morphine-6-glucuronide, requiring renal excretion.[4] Morphine should be used with extreme caution, or avoided, due to the unpredictable and variable amount the nursing infant may receive.[4] If used due to limited options, the dose administered should be minimized and repeated doses should be avoided. No incidents of infant toxicity have been reported with morphine, but caution is warranted.[6,8]

Other opioids which should be used with caution are hydromorphone, meperidine, and codeine.[4] Codeine is rarely administered during an anesthetic, but the discussion of it's unique properties is important. Codeine is best avoided in breastfeeding mothers regardless of the infant's age due to the potential for excessive exposure to morphine, the active metabolite of codeine. The FDA placed a black box warning in 2013 regarding the use of codeine in pediatric patients following tonsillectomy and adenoidectomy.[4,9] Some individuals have a genetic variation and are ultra rapid metabolizers of codeine resulting in increased serum levels of morphine. [8,9] The ethnic groups with the largest percentage of ultra rapid metabolizers are Asian, Middle Eastern, and Ethiopian. Approximately 30% of individuals in these ethnic groups possess the genetic variation.[9]

Induction agents are essential for the anesthetist, and most of them have been deemed safe for use during lactation. Propofol is the most common induction agent utilized. Bluish-green colored milk has been reported in one case study after the use of propofol, and the average amount of propofol 24 hours after induction was found to be 26mcg in 250 ml of breast milk when the mother's dose was 180mg intravenous. [4,10] This low amount found in breast milk after 24 hours is insignificant, and if given as a single dose for an outpatient anesthetic, it is safe to use with a healthy term infant. [10]

Etomidate is another option anesthetists may use if hemodynamics are of concern on induction. There is very little data concerning this medication, but its use has been

deemed safe by researchers in lactating women.[4] Ketamine also has limited data for effects with breastfeeding, but it was suggested that motivation to breast-feed in rats after administration was lessened.[4] It is best to avoid ketamine in lactating women due to lack of research.

Antianxiety medications are commonly administered in the preoperative areas. Diazepam is a long acting benzodiazepine with an active metabolite that can last 30-100 hours. [4,5] It is best to avoid Diazepam in lactating mothers. Lorazepam and midazolam can both be utilized in breastfeeding mothers.[4,5] The researchers even found with a large dose of oral versed up to 15mg the amount of drug found in breast milk was negligible after 4 hours. [4] The average amount of versed in breast milk is 0.004% of the maternal dose given. [10] It is best to use the short-acting antianxiety drugs if needed.

Ketorolac is a nonsteroidal anti-inflammatory drug commonly given after gynecological surgery and is safe to use in lactating women.[4,5] Local anesthetics are used in a variety of fashions including various peripheral nerve blocks and intravenously at times. Local anesthetics, especially lidocaine, bupivacaine, and ropivacaine, are considered safe in lactating women.[4,5,6]

Antiemetics are administered during a general anesthetic to decrease the incidence of nausea in the postoperative setting. Metoclopramide has been studied in human subjects and has been deemed safe by researchers for breastfeeding patients. Ondansetron, prochlorperazine, and dexamethasone have no human data available regarding their use in breastfeeding patients, but no reports of adverse effects in breastfed infants have been noted; their use has been deemed safe by researchers.[5]

In general protein binding, molecular weight, lipid solubility, and ionization are important to consider when determining the effects of medications on breastfeeding.[5,8] The transfer of medications to breast milk is increased when medications have smaller molecular weights, weak bases, small protein binding, or lipid solubility.[8] The pH of breast milk is lower than serum pH levels, so ion trapping is possible with weak bases.[8] Chronic oral narcotics are the leading cause of infant morbidity or mortality, and there have been no documented reports of deaths caused by medications given for anesthesia.[8]

The current recommendation is to continue breastfeeding without interruption when the mother is awake enough to breastfeed independently.[4,5,11] High doses of opioids which cause maternal sedation should be avoided in breastfeeding mothers.[8] If the mother shows signs of sedation and cannot safely breastfeed independently then do not allow breastfeeding. These recommendations can be changed on a case to case basis for safety concerns in either mother or baby. The breastfed infant should be monitored for adverse effects in the immediate postoperative period.[4] It is critical for the anesthesia provider to understand which medications pose an increased risk for adverse effects for the breastfed infant. Avoid medications with active metabolites and those that have limited research regarding safety in breastfeeding mothers like morphine, hydromorphone, meperidine, ketamine, and diazepam.

Project

PLAN

For organization and efficiency, the Plan-Do-Study-Act framework was utilized to complete the project. It is an organizational tool used to improve the implementation of a proposed solution to an identified problem. The plan portion of this project describes

the tasks needed to implement the solution.[2] The planning activities in the initial stage of the project was the bulk of the work for this project. It included multiple meetings and conversations with stakeholders. Among the stakeholders involved in the planning stage were faculty members of Bryan College of Health Sciences School of Nurse Anesthesia, and members of Bryan College of Health Sciences Institutional Review Board. Stakeholders from Bryan Medical Center included the Nurse Manager of the Outpatient Surgery unit, a Registered Nurse from the Clinical Informatics department, a Lactation Consultant, and an anesthesiologist from Associated Anesthesiologists P.C.

Meetings and communication with the stakeholders were critical in developing a plan to establish consistent communication of evidenced based recommendations for breastfeeding mothers. The Clinical Informatics department played an important role in the development of a Care Note that is now available at Bryan Medical Center. Lactation Education Resources was established in 1997 and is associated with Georgetown University Medical Center. A patient education pamphlet (Appendix A) has been published by Lactation Education Resources and is available online.[12] The information in the pamphlet is accurate and consistent with the recommendations found independently in a review of the literature. The development of a patient education Care Note was discussed with the Clinical Informatics RN on February 16th, 2016. The Clinical Informatics department contacted the Lactation Education Resources organization and obtained permission to create a modified version which reflects only the recommendations following anesthesia (Appendix B). This is the Care Note that is provided to patients if the anesthesia provider completes an order for breastfeeding after anesthesia patient education.

Part of the Plan portion of the PDSA is to predict what will happen when the solution is implemented. To measure the predicted improvement, two similar participant questionnaires were developed to measure the consistency in the instructions given to breastfeeding mothers who undergo an outpatient surgical procedure. The questionnaires were administered prior to the implementation of the educational program and a second time after the implementation. The first questionnaire established the baseline conditions and the identical second questionnaire measured the improvement from the baseline. The members of the Anesthesia Department including Certified Registered Nurse Anesthetists (CRNAs) and anesthesiologists, and RN staff of the Outpatient Surgery Department were the two participant groups in the study. A questionnaire for each of the participant groups was developed and the first and second questionnaires were identical for each group (Appendix C & D). Institutional Review Board (IRB) approval was obtained prior to the administration of the questionnaires to participants (Appendix E).

A participant email list was obtained from the administration of both departments. A URL link to the questionnaire was sent via an email to all Outpatient Surgery RNs at Bryan Medical Center and the anesthesiologists and CRNAs on staff at Bryan Medical Center. The URL link provided access to complete the pre-test questionnaire via SurveyMonkey® online. The pre-test questionnaires were available for two weeks with 24 of 35 RNs and 37 of 52 anesthesia providers participating. Of the participants who completed the questionnaires, approximately 80% of RNs and 67% of anesthesia providers indicated that instructions given the breastfeeding mothers were not consistent (see Table 1).

After the administration of the initial questionnaire was completed, an educational program for each department was developed. A request to speak at a monthly Anesthesia Department meeting was granted. The educational program consisted of a ten-minute oral presentation supplemented by informational slides. There were approximately 15 anesthesia providers in attendance including anesthesiologists and CRNAs. The presentation provided current recommendations for breastfeeding mothers and a brief overview of commonly administered medications for outpatient surgical procedures. The educational program was also emailed to all anesthesia providers. Included were recommendations for resumption of breastfeeding following anesthesia, an overview of commonly utilized medications and their safety in breastfeeding (Appendix F), and an article summarizing the potential transfer of commonly used anesthetics into breastmilk.[9]

The educational program was emailed to all Outpatient Surgery RNs as it was not feasible to schedule a presentation. Included were recommendations for resumption of breastfeeding following an anesthetic and a recommendation that ideally the anesthesia provider is the best individual to provide instructions for the resumption of breastfeeding (Appendix G).

Do

A change in the behavior of the RN and anesthesia provider participants was necessary to achieve the goal of the project. The desired outcome was to have all anesthesia providers instruct a breastfeeding mother to resume breastfeeding as soon as she was alert enough to do so. The RN participant desired outcome was the RN would provide the same patient instruction, or encourage the patient to discuss resumption of breastfeeding with their anesthesia provider. Comparison of participant questionnaire responses prior to, and following the educational program occurred during this phase of the project. The second questionnaire was administered by the same process as the initial questionnaire. The second questionnaire was available approximately one month following the educational program and was available for two weeks. Twenty of 35 Outpatient Surgery RNs and 33 of 52 anesthesia providers completed the second questionnaire (Table 1).

In comparing the anesthesia provider responses, more consistency was seen to Question 1: *If a patient asks you when it is appropriate to resume breastfeeding after anesthesia which of the following responses would you most likely suggest?* Comparing the second questionnaire responses to the first, the most common response in the second questionnaire (n=27, 81,82%) was to resume breastfeeding as soon as alert enough to safely breastfeed. The most common response in the first anesthesia provider questionnaire (n=21, 56.76%) to “pump and dump” at least once. No anesthesia providers suggested the need to discard breastmilk for 24 hours in the second questionnaire, while 4 (10.8%) did in the first (Table 1).

The RN responses were not as consistent, but 80% in the second questionnaire chose either “Your anesthesia provider will make that decision” (n=8, 40%), or to breastfeed as soon as alert enough to do so safely (n=8, 40%). One RN participant (5%) suggested to "pump and dump" at least once, and 3 (15%) participants suggested to discard breastmilk for twenty-four hours. In the first questionnaire, the majority of RNs (n=17, 70.83%) responded “Your anesthesia provider will make that decision”, and 4 (16.67%) selected to discard breastmilk for 24 hours (Table 1).

The second question on both questionnaires asked the participants "Do you feel there is consistency in the instructions given to breastfeeding mothers…? " The RNs perceived an improved consistency with 50% responding 'Yes' in the second questionnaire compared to approximately 17% in the first. The anesthesia providers did not perceive an improved consistency with approximately 30% 'Yes' responses in both questionnaires (Table 1).

Study

The results discussed in the previous section supported the predictions made in the Planning stage. More consistency was noted, especially within the participant group of anesthesia providers. No anesthesia providers chose the "discard breastmilk for 24 hours" response following the educational program and greater than 80% chose the recommended response of early resumption of breastfeeding. Eighty percent of the RN participants chose one of the two desired responses, to either consult the anesthesia provider or to resume breastfeeding early. Prior to the educational program, 75% of RNs and 32% of anesthesia providers gave the desired response.

Question 2 responses for both participant groups indicates that a perception of inconsistency remains. The RN perceptions improved to 50% of RNs perceiving consistency in instructions, but no improvement was seen in the anesthesia provider perceptions.

Act

The goal of this project was to bring consistency to the evidenced based recommendations for resumption of breastfeeding after outpatient anesthesia made by anesthesia providers and RNs in the Outpatient Surgery Department. Analyzing the results, consistency was gained in some areas but remains lacking in others. It is difficult to determine if the project as a whole was a success. Change is difficult for health care providers. People are more likely to change if persuaded by individuals who are credible, trustworthy, powerful, attractive, expert, and similar to themselves.[13] Individuals who resist messages from expert opinions tend to form stronger and more stubborn opinions.[13] The position of a student trying to influence professionals who have been in the field for a long time may have played a role in resisting change during this project.

A future recommendation to achieve 100% consistency is the implementation of a standard order set for breastfeeding mothers. The standard order would implement the delivery of the Care Note developed in this project to all breastfeeding mothers. The implementation of a standard order set requires approval through the Medical Staff committee structure. Approval by the medical a vote would need to be done via the Anesthesia Board to include triggering standard orders The inclusion of this standard order would negate all individual opinions on the matter. This combined with continued education for providers who are not on board with current recommendations would improve the inconsistencies on the matter. It would also be helpful to make the staff meetings mandatory for all providers. The knowledge gained at the staff meeting would have provided a better outcome if all providers were in attendance.

As professionals in a field where recommendations and changes are always occurring, we have to be advocates for current best practice recommendations. The nursing field has had a long history of influencing change to improve patient care through

structural changes.[14] Nurses have several sources to change policy, for example, power in numbers, referent power, and expert power.[14] Because of Nurse Anesthetist's role in health care, it is common to be the first to encounter inefficiencies in the delivery of health care.[14] For these reasons, it is essential we continue to fight for the best recommendations for patients, knowing as a profession there have been many successful changes made by nurses.

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Appendix A

Information for breastfeeding mothers

Surgery and the Breastfeeding Mother

You may find you need surgery while breastfeeding your baby. It is certainly not necessary to wean. And the effects of anesthesia are very short lived. Plan to resume breastfeeding as soon as possible..

Planning for Surgery

- Pump and freeze a supply of breastmilk in advance.
- Use out-patient surgery that will not require an overnight stay, if feasible .
- Assure that the baby will accept a bottle or practice using a cup for feedings. Avoid bottles for infants less than 4-6 weeks old if there has been any reluctance for the baby to breastfeed. Breastfed babies generally are able to more easily go from breast to bottle by using nipple with a long shank, wide base and slow flow. Teach your care givers to feed your baby with Paced Bottle Feeding.
- Discuss the type of pre-anesthesia medication and anesthesia that will be used with your surgeon. If there is concern about the anesthesia used, check Toxnet http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?LACT for information.
- Arrange to nurse the baby right before the surgery.
- Make rooming-in arrangements for the baby. Often hospitals require another adult be present to care for the baby.
- Arrange for a hospital grade electric breast pump for use in the hospital for occasions when the baby is not present or nursing.

Day of Surgery

- Breastfeed, with help, as soon as awake from the anesthesia
- If the surgery is on the breast, the infant can nurse if his mouth does not cover the incision area. If so, dress the incision (it may ooze breastmilk and need frequent changing) and use a breast pump until sufficient healing has taken place. Continue to nurse on the other breast.
- Use post-operative pain medications as needed. The amount of medication passed to the infant is minimal and will be insignificant to the healthy baby who is gaining well.
- If other medications are needed, assure that they are compatible with breastfeeding. Most are. Check Toxnet.
- Plan for help at home for several weeks to allow ample time for recuperation.

Appendix B

Breastfeeding after Surgery

If you need surgery while breastfeeding your baby it is not necessary to stop breastfeeding. General anesthesia usually does not affect breastfeeding. You can safely nurse once you are awake and alert enough to hold your baby. By this time, the anesthesia medications are so low in your bloodstream that your milk will be safe.

After Your Surgery

- Breastfeed, with help, as soon as it is appropriate and you are awake from the anesthesia.
- If the surgery is on the breast, the infant can nurse if his mouth does not cover the incision area. If so, dress the incision (it may ooze breastmilk and need frequent changing) and use a breast pump until sufficient healing has taken place. Continue to nurse on the other breast.
- Take your prescribed pain medication as needed. The amount of medication passed to your baby is very little and will be minor to the healthy baby who is gaining weight.
- If other medications are needed, confirm that they are okay to continue breastfeeding. Most are. Check Toxnet. com, click on LactMed to enter the medication brand or generic name.
- Plan for help at home for several weeks to allow ample time for healing.

Appendix C

1. If a patient asks you when it is appropriate to resume breastfeeding after anesthesia which of the following responses would you most likely suggest?

- ◯ It is suggested that you "pump & dump" at least once before resuming breastfeeding
- ◯ You should "pump & dump" for 24 hours after anesthesia
- ◯ As soon as you are awake enough to safely breastfeed you can resume your normal breastfeeding schedule
- ◯ Your Anesthesia provider will make that decision

2. Do you feel there is consistency in the instructions given to breastfeeding mothers by healthcare providers at Bryan Medical Center?

- ◯ Yes
- ◯ No

Appendix D

1. If a patient asks you when it is appropriate to resume breastfeeding after anesthesia which of the following responses would you most likely suggest?

- ◯ It is suggested that you "pump & dump" at least once before resuming breastfeeding
- ◯ You should "pump & dump" for 24 hours after anesthesia
- ◯ As soon as you are awake enough to safely breastfeed you can resume your normal breastfeeding schedule

2. Do you feel there is there consistency in the instructions given to breastfeeding mothers by healthcare providers at Bryan Medical Center?

- ◯ Yes
- ◯ No

Appendix E

Bryan COLLEGE OF HEALTH SCIENCES

May 19, 2016

Blake Meyers, RN
Bryan College of Health Sciences
5035 Everett Street
Lincoln, NE 68506

IRB #1605-001

Title of Protocol: EFFICACY OF BREAST FEEDING RECOMMENDATIONS AFTER ANESTHESIA; A QUALITY IMPROVEMENT PROJECT

RE: Study resubmission

Dear Mr. Meyers,

As Chair of Bryan College of Health Science's IRB I have reviewed your resubmission for the above-titled *Request for Review* and determined it to be exempt from IRB Committee review.

This letter constitutes official notification of exempt status from Bryan College of Health Science's IRB. Please inform the IRB of any changes to your plan.

Respectfully submitted on behalf of the IRB.

[redacted], PhD, CRNA

Shannon Pecka, PhD, CRNA
IRB Chair
Bryan College of Health Sciences

Appendix F

Current Evidence Based Recommendations for Breast-feeding Mothers after Anesthesia for Out-patient Procedures

Blake Meyers, SRNA

Inhalation agents- Desflurane, isoflurane, sevoflurane all deemed safe in breast-feeding mothers[1,2,3]

Neuromuscular blocking agents:

It is presumed that these agents do not cross the blood-milk duct membranes due to their relatively large size, low lipid solubility, and polarized nature.[3] Proven to be safe in breast-feeding mothers.[1,2]

Reversals: neostigmine & glycopyrrolate are quaternary ammoniums and are not likely to cross into breast milk[3], atropine deemed safe. [2,3]

Induction agents: There has been a case report of bluish green breast milk 8 hours after surgery when propofol was used.[1] Propofol has a low oral bioavailability combined with an infants rapid metabolism propofol is safe to use.[1,2,3] Etomidate has a rapid clearance rate and is safe as well.[1,3] There has been no human studies with ketamine and its effects on breast-feeding, one study done with rats suggest a decrease in the motivation to breast feed.[1] Conflicting information regarding its use, would probably be best to avoid.

Opioids: Lowest doses possible to provide adequate analgesia are recommended. **Fentanyl** has been tested in human subjects as a single dose of 100mcg given to mother. The amount found in breast milk 24 hours later was found to be 0.033%, a single dose of fentanyl is safe for lactating mothers.[1,2,3] Morphine, hydromorphone, and meperidine are to be used with extreme caution or avoided due to either variable amounts detected in breast milk or adverse effects noted in infants.[1,2] Remifentanil and alfentanil can be used safely as well. [1,2,3] Sufentanil is not commonly used for out-patient procedures, the effects of the medication has not been well studied best to avoid its use. With the use of any narcotics IV or oral narcotics sent with the patient it is import to remind them: if the baby shows signs of increased sleepiness (more than usual), difficulty breastfeeding, breathing difficulties, or limpness, a physician should be contacted immediately.

Benzodiazepines: Diazepam is recommended to be avoided in lactating women due to its long duration of action and high oral bioavailability.[1,2] **Midazolam** the most common benzodiazepine utilized in anesthesia has been studied in human subjects and has been deemed safe to use in breast-feeding infants. [1,2,3,4]

NSAIDs/Analgesics: Acetaminophen, ibuprofen, and ketorolac are commonly used and are safe for breast-feeding. [1,2,3]

Anti-emetics: Metoclopramide, ondansetron, dexamethasone, prochlorperazine have been deemed safe to use.[2]

It is recommended by all of these sources that interruption of breast-feeding is not necessary after general anesthesia. When the mother feels awake and alert enough to safely breast-feed she can resume breast-feeding without pumping and dumping. [1,2,3] The CDC has determined that 85% of women would like to breast feed past 3 months but only a third of them meet their goals do to frustration, and lack of

producing enough of a supply. Interruption in breast-feeding and encouraging using formula even for a short time can increase the odds of cessation of breast-feeding.[5]

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Appendix G

Thanks to all that completed the survey in May. The results are as follows:

Question 1) If a patient asks you when it is appropriate to resume breastfeeding after anesthesia which of the following responses would you most likely suggest?

-*"pump and dump at least once*" **8.33% of participants**

-*"you should pump and dump for 24 hours"* **16.67% of participants**

-*"as soon as you are awake enough to safely breast feed, you can resume your normal breastfeeding schedule"* **4.17% of participants**

-*"your anesthesia provider will make that decision*" **70.83% of participants**

Question 2) Do you feel there is any consistency in the recommendations for breastfeeding mothers after anesthesia?

-"*yes*" **16.67% of responses**

-"*no*" **83.33% of responses**

There was not a lot of consistency among the survey given to the Anesthesia Department. I have provided current recommendations to both the CRNA's and the Anesthesiologists. Current recommendations are mom can resume breastfeeding when awake and alert enough to do so safely. There is a CARE Note that can be given to breastfeeding mothers. THE CRNA or ANESTHESIOLOGIST NEEDS TO TELL THE RN IF IT IS OKAY TO GIVE TO THE PATIENT. My goal is to get everyone on board with the current recommendations, if this can happen an order will be added to the adult Pre-Anesthesia order set. But until this happens just ask the provider what he or she would like for their patient.

There will be one more survey sent out at the end of this month. It is the same as the last one. Please complete it so I can compare the results. Thanks for your participation in this project, I hope it provides some consistency in the future.

Blake Meyers, SRNA

Table 1.

Outpatient Surgery RN responses		
Question #1; ***If a patient asks you when it is appropriate to resume breastfeeding after anesthesia which of the following responses would you most likely suggest?***	Pre-test questionnaire n=24	Post-test questionnaire n=20
It is suggested that you "pump & dump" at least once before resuming breastfeeding	n=2, 8.33%	n=1, 5.00%
You should "pump & dump" for 24 hours after anesthesia	n=4, 16.67%	n=3, 15.00%
As soon as you are awake enough to safely breastfeed you can resume your normal breastfeeding schedule	n=1, 4.17%	n=8, 40.00%
Your Anesthesia provider will make that decision	n=17, 70.83%	n=8, 40.00%
Question #2*; **Do you feel there is consistency in the instructions given to breastfeeding mothers by healthcare providers at Bryan Medical Center?***		
Yes	n=4, 16.67%	n=10, 50.00%
No	n=20, 83.33%	n=10, 50.00%
Anesthesia Providers (Anesthesiologists & CRNA's)		
Question #1; ***If a patient asks you when it is appropriate to resume breastfeeding after anesthesia which of the following responses would you most likely suggest?***	Pre-test questionnaire n=37	Post-test questionnaire n=33
It is suggested that you "pump & dump" at least once before resuming breastfeeding	n=21, 56.76%	n=6, 18.18%
You should "pump & dump" for 24 hours after anesthesia	n=4, 10.81%	n=0
As soon as you are awake enough to safely breastfeed you can resume your normal breastfeeding schedule	n=12, 32.43%	n=27, 81.82%
Question#2; ***Do you feel there is there consistency in the instructions given to breastfeeding mothers by healthcare providers at Bryan Medical Center?***		
Yes	n=12, 32.43%	n=10, 30.3%
No	n=25, 67.57%	n=23, 69.7%