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Implementation of an initiative to standardize abdominal binder use in postoperative cesarean section patients: a program evaluation.

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Implementation of an Initiative to Standardize Abdominal Binder Use in Postoperative Cesarean Section Patients: A Program Evaluation

by

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Abstract

A cesarean section is a major abdominal surgery with a unique recovery profile. The patient must recover from surgery while simultaneously coping with a major life event: the birth of a new baby. The utilization of pain management techniques with as few side effects as possible is paramount to ensure optimal maternal and newborn outcomes (Karlström et. al., 2007; Eisenach et. al., 2008). On an inpatient mother/baby unit at a high-risk urban hospital in Louisville, Kentucky approximately 66 babies are born via cesarean section every month (Mattingly, 2021). However, in the fall of 2021, it was discovered that there was no protocol in place to ensure that each of these post-cesarean patients were offered a minimally invasive, nonpharmacologic pain management device: an abdominal binder (Abd-ElGawad et al., 2021 & DiMascio et al., 2021). The purpose of this quality improvement project was to evaluate the efficacy of an educational intervention aimed at standardizing the procedure and increasing the rate at which nursing staff offered post-cesarean patients abdominal binders. Participants included post-cesarean patients that met inclusion criteria and delivered during late 2022 and early 2023. Data was collected through a retrospective chart review and included demographics, delivery information, and abdominal binder offering and use. The majority of the population was composed of Black, Indigenous, and people of color (BIPOC), and most underwent a primary c-section. The largest percentage of each population also had body mass indexes (BMIs) of 40 or higher. Following the educational intervention, abdominal binders were offered at a significantly higher rate both within 48 hours post-cesarean and before discharge. Additionally, abdominal binder use significantly increased. A chi square analysis also revealed no significant association between abdominal binder offering and race/ethnicity or BMI, which is encouraging given the history of racial and weight-related bias in healthcare.

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Implementation of an Initiative to Standardize Abdominal Binder Use in Postoperative Cesarean Section Patients: A Program Evaluation

Definition of the Problem

In the United States, approximately 1 in 3 babies is born via cesarean section, making c-sections one of the most frequently performed surgical procedures in the country (Martin et al., 2021). The most common symptoms following this major abdominal surgery are pain and fatigue (American College of Obstetricians and Gynecologists [ACOG], 2018). Adequate pain control is critical in promoting optimal postpartum outcomes. Two studies published from 2007-2008 found that uncontrolled post-cesarean pain was associated with worse breastfeeding outcomes, suboptimal maternal/infant bonding, higher rates of postpartum depression, greater risk of opioid use, and the development of chronic pain (Karlström et al., 2007; Eisenach et al., 2008).

ACOG recommends a stepwise, multimodal approach to post-cesarean pain management that includes both pharmacologic and nonpharmacologic treatments (ACOG, 2018). ACOG recommends that acetaminophen and nonsteroidal anti-inflammatory medications such as ibuprofen be administered at regular intervals and oral opioids should be reserved for treating breakthrough pain. The side effects of opioids are uniquely inconvenient and dangerous in the postpartum setting; common side effects include drowsiness, dizziness, nausea, vomiting, and constipation (CDC, 2017). Additionally, opioids are known to transfer into breast milk and can cause respiratory distress in breastfed infants (Morphine, 2022). Finally, a 2016 study found that 1 in 300 opioid-naïve mothers became persistent users of opioids following cesarean delivery (Bateman et al., 2016). Prescribers must consider the risks associated with opioid administration versus the risks associated with uncontrolled post-cesarean pain. A multimodal approach to pain

management that utilizes nonpharmacologic interventions and minimizes the need for opioid use is a prudent treatment strategy.

Setting

The inpatient mother/baby unit of a high-risk urban hospital in Louisville, Kentucky. Between 2016 and 2020, the c-section rate was 38% (Mattingly, 2021).

Unit Problem and Stakeholders

In the fall of 2021, it was determined that the promotion of nonpharmacologic pain management practices would be a target for quality improvement. The DNP Project Lead performed a needs assessment and discovered that while abdominal binders, a nonpharmacologic pain management device, were available, there was no system in place to ensure that post-cesarean patients were educated on and offered an abdominal binder. Instead, nurses routinely assessed patients' pain score from 0-10 and gave the medication ordered for that pain level. The basic post-cesarean order set included Norco (hydrocodone 5mg/acetaminophen 325mg) for moderate pain (level 4-6) and Percocet (oxycodone 5mg/acetaminophen 325mg) for severe pain (level 7-10).

The DNP Project Lead conducted interviews with staff nurses, and they were in consensus that nonpharmacological pain management options should be offered to patients on a more consistent basis. Three themes emerged from these interviews: patient satisfaction with abdominal binder use, lack of communication and patient education regarding pain management options, and physical barriers to acquiring abdominal binders related to an unreliable supply chain.

Stakeholders with varying degrees of influence existed for this project. They included the following: nursing staff, delivering obstetricians, assistant nurse managers, unit educator, unit

manager, unit director, chief nursing officer, and most importantly, the patients. The focus of the educational intervention was the mother/baby unit nursing staff which was composed of approximately 64 registered nurses. The unit manager and director played a foundational role in the implementation and management of the project by emphasizing the importance of the issue and providing time during unit meetings for project implementation.

Literature Review

An abdominal binder is a compression belt made of elastic material that is fastened by either Velcro or a hook-and-loop fastener strap (Saeed et al., 2019). The compression increases blood flow to the abdomen, reducing inflammation surrounding the incision while facilitating healing (Hakimi, Mirghafourvand, & Abbasalizadeh, 2017). The literature clearly demonstrates the efficacy of abdominal binder use in managing post-cesarean pain and distress. An exhaustive review of the literature performed in April of 2022 produced a total of 12 studies that explored the possible association between abdominal binder use and post-cesarean pain and distress. Seven randomized control trials (RCTs) investigated the relationship between abdominal binder use and post-cesarean outcomes: Chankhunaphas & Charoenkwan (2019), Ghana et al. (2017), Gillier et al. (2016), Gustafson et al. (2019), Karaca et al. (2019), Saeed et al. (2019), and Tussey et al. (2019). These RCTs were synthesized among two different systematic reviews published by Abd-ElGawad et al. (2021) and DiMascio et al. (2021). While both systematic reviews could not demonstrate positive effects of abdominal binder use on post-cesarean pain as measured by the Visual Analog Scale (VAS), both revealed significantly decreased distress as measured by the Symptom Distress Scale (SDS). The SDS is an assessment tool that evaluates multiple dimensions of discomfort including pain, sleep, fatigue, nausea, bowel function, and concentration (McCorkle &Young, 1978). In addition, none of the seven RCTs reported any

significant trends in adverse events in those who wore abdominal binders (Chankhunaphas & Charoenkwan, (2019); Ghana et al., (2017); Gillier et al., (2016); Gustafson et al., (2019); Karaca et al., (2019); Saeed et al., (2019); Tussey et al., (2019)).

Two quality improvement studies by Burgess et al. (2019) and Kahn et al. (2021) provided valuable information on the role of abdominal binder use in decreasing the need for opioid pain medications. Both groups educated staff on the importance of utilizing the following comfort measures in post-cesarean patients: abdominal binders, chewing gum, early ambulation, and routine administration of acetaminophen, ibuprofen, and simethicone (Burgess et al., 2019 & Kahn et al., 2021). Both studies reported decreased opioid consumption among patients post-intervention; Burgess et al. (2019) reported a 61% reduction in morphine milligram equivalents (MME) consumed while Kahn et al. (2021) reported that post-cesarean high consumption of opioids (55-120 mg) was reduced from 25% to 8%.

Finally, a mixed-methods study published in 2022 by Hoskins, Dempsey, & Brou combined a randomized controlled trial with qualitative data collection on abdominal binder use to compare levels of postoperative oxycodone use and incisional pain between an intervention group (binder) and control group (no binder). While the overall amount of oxycodone taken by those in the binder group was lower than that of the control group, statistical significance was not achieved ($p = 0.10$). However, the pain scores measured among the binder group measured via the Visual Analog Scale (VAS) were significantly lower on post-op day 2 compared to the control group ($p=0.002$). The average lowest level of pain reported among those in the binder group was 2.25+/- 1.91, while that among the control group was 3.22+/- 2.06 (Hoskins, Dempsey, & Brou, 2022). The body of evidence contributes to the emerging knowledge that

abdominal binder use is a safe and effective nonpharmacologic strategy in the management of post-cesarean pain.

Purpose and Specific Aims

The purpose of this DNP project was to establish a process and culture among nurses on a mother/baby unit to promote the use of abdominal binders as a nonpharmacologic therapy for pain control and comfort in post-cesarean patients. Outcomes regarding staff education and documentation regarding abdominal binder offering and use were monitored and reported back to the unit to promote continuous quality improvement.

Conceptual Framework/Model

The Iowa Model

The Iowa Model of Evidence-Based Practice was created and published in 2001 by a team of nurse researchers at the University of Iowa Hospitals and Clinics to provide a framework for quality improvement projects. The components of this project aligned with the institution's values of patient safety, patient satisfaction, and stewardship of resources. The project is embedded into the Iowa Model as depicted in Appendix A.

Adult Education Model

At the time of implementation, the mother/baby nursing staff was composed of approximately 64 nurses with ages ranging from 21-73. The nurses embodied a wide variety of socioeconomic and cultural backgrounds as well as duration and type of nursing experience. In 1991, Gerald Grow proposed an educational model that emphasized the importance of matching teaching style with each learner's stage of self-direction, or ownership, of the subject. Grow proposed four stages of self-direction: dependent, interested, involved, and self-directed.

Dependent learners learn best from an authority figure who provides explicit direction on how the task is to be completed (Grow, 1991). New nurses, those unfamiliar with

nonpharmacologic pain management, and those who were disinterested in promoting the use of evidence-based practice composed this group. The informational session presented at the quarterly meeting as well as updated SBAR handoff sheets met these learners at this stage of self-direction. Interested learners express interest in educational material and respond well to motivational techniques (Grow 1991). These learners were encouraged by the weekly prize drawing and guidance from nurse champions, or Abdominal Binder Ambassadors.

Involved learners see themselves as active participants in their learning (Grow 1991). These learners benefited from the in-person shift starter announcements where they were able to reference the handout and ask questions. Finally, self-directed learners responded best to teaching styles that allowed for a high degree of ownership and autonomy. Eight self-directed learners were designated nurse champions called Abdominal Binder Ambassadors. They served as experienced, passionate practitioners who monitored the project's progress in real time and encouraged other nurses to participate. While there is a gap in research regarding the most efficacious nursing education techniques, the effectiveness of evidence-based practice leaders like Nurse Champions has been established throughout medical literature (Thompson et al., 2007, Davies et al., 2008).

Methods

Prior to implementation of this project, the DNP Project Lead collaborated with unit leaders and hospital central supply to address the supply chain issues discovered in the needs assessment. This work ensured the availability of abdominal binders.

Sample

The DNP Project Lead viewed a total of 270 charts and selected those that met inclusion criteria. The inclusion criteria included patients who were at least 24 weeks gestation who delivered a viable infant and were admitted to the mother/baby unit within 24 hours post-

cesarean. Exclusion criteria included patients who left against medical advice, those who underwent a hysterectomy, those who experienced a fetal or neonatal demise, and those with chronic conditions such that abdominal binder use would have been contraindicated (ascites secondary to liver failure). Of the 270 charts, 110 pre-intervention and 122 post-intervention charts met these criteria.

Procedure

Staff Education

During the unit's quarterly meeting, DNP Project Lead presented a ten-minute Microsoft PowerPoint presentation which educated mother/baby nurses on the benefits of abdominal binder use in post-cesarean patients. Attendance was mandatory per unit leadership. 96% (50/52) of the nursing staff attended the meeting.

The education session reviewed the evidence supporting abdominal binder use as a non-pharmacologic method of reducing pain and distress in post-cesarean patients. It provided instruction on abdominal binder fitting, timing of application, and patient education as well as the documentation process and expectations.

Evidence regarding optimal timing of abdominal binder application is lacking. To allow nurses to discern a clinically appropriate time for abdominal binder introduction, the guidelines stated that each post-cesarean patient was to be offered an abdominal binder by 48 hours post-cesarean. Nurses were instructed that optimal opportunities for binder application included the first post-cesarean ambulation or after the first post-cesarean shower. A patient handout detailing the use of abdominal binders was made available for nurses to include with post-cesarean patients' postpartum welcome packet (see Appendix B).

Mother/baby nurses utilize patient SBAR sheets to communicate pertinent information from shift to shift. A section regarding abdominal binder status was added to this sheet to facilitate staff communication (see Appendix C). A reminder of the abdominal binder initiative was presented at the unit's Shift Starter meeting at the beginning of intervention week 1. Shift Starter meetings, offered at the beginning of every 12-hour shift with attendance required, included information from the nurse manager about unit logistics, practice changes, and safety event reviews. A one-page staff reference sheet was-included in the Shift Starter packet for staff reference (see Appendix D).

Attractive signage was applied to the abdominal binder bins located in the stock room to draw staff attention. A laminated copy of the staff reference sheet was posted in this same location. During the initial 10-week post-intervention period, nurses had the opportunity to voluntarily write their name on a posted log each time they fitted a patient with an abdominal binder. Names were entered into weekly drawings for nominal prizes such as candy and office supplies.

Nurse champions were selected by the DNP Project Lead to serve as Abdominal Binder Ambassadors. They were instructed to remind coworkers of the benefits of abdominal binder use and assist with fittings. Three dayshift nurses and five nightshift nurses were selected to serve in this role.

Chart Review

Data was collected through a retrospective chart review via Epic, the hospital's electronic medical record software. Following Institutional Review Board (IRB) approval, the DNP Project Lead worked with the facility's research office and gained access to lists of both pre- and post-intervention cesarean deliveries. Next, the DNP Project Lead used student access to Epic to

gather data via retrospective chart review. Data collection included the following: medical record number (MRN), race/ethnicity, BMI, number of c-sections including the current delivery, uterine incision type, abdominal binder offering, and abdominal binder use.

As a result of implicit bias in healthcare workers, pain is routinely undertreated among BIPOC (Black, Indigenous, and people of color) patients (Hottman et al., 2016). Collecting race/ethnicity data could allow the DNP Project Lead to determine if there was any unintended bias in abdominal binder offering or use that can be reported back to the unit. During the needs assessment, the DNP Project Lead discovered that high BMI may have been a barrier to abdominal binder offering; nurses were unaware that if the largest binder did not fit, the patient could still experience the benefits of abdominal binder use when a second is added to serve as an extender. Recording data on BMI could allow the DNP Project Lead to assess whether education on this subject included in the PowerPoint was adequate in educating staff on this practice. Additionally, collecting data on total number of c-sections and uterine incision type allowed the DNP Project Lead to explore possible associations with these variables and abdominal binder use.

Measures

- Demographics
    - EP0 medical record number (nominal level of measurement)
    - Race/ethnicity: African American (1), White (2), Latino (3), Asian (4), Other (5), Other/Unknown (6) (nominal level of measurement)
    - BMI: <18.5 (1), 18.5-24.9 (2), 25-29.9 (3), 30-34.9 (4), 35-39.9 (5), >40 (6) (ordinal level of measurement)
- Delivery Information

- Total number of c-sections including this delivery: primary (1), second (2), third + (3)
- Uterine incision type: Pfannenstiel (1), Classical midline (2), other (3) (nominal level of measurement)
- Abdominal binder offering: initial documentation present within 48 hours postoperative (1), initial documentation present AFTER 48 hours post-op (2), absent documentation throughout entire patient stay (3) (nominal level of measurement)
- Abdominal binder use: used (1); refused/no documentation (2) (nominal level of measurement)

Data Analysis

Data was collected using an Excel spreadsheet (Appendices E and F).

Staff Education

The rate at which mother/baby nurses were educated at the required staff meeting was calculated and reported as a percentage (number of nurses educated divided by the total number of nurses).

Demographics

An initial overview of demographic and delivery statistics data was collected. This data included race/ethnicity, BMI, number of c-sections, and uterine incision type. The data was analyzed using descriptive statistics including frequency and percentage.

Abdominal Binder Offering and Use

Offering

The rate at which staff offered abdominal binders was calculated. The term "offered" was defined as the presence of documentation within the abdominal binder section of the chart. The following documentation needed to be present to assume that the patient was offered an abdominal binder: "abdominal binder" was clicked under the Miscellaneous Devices section of the Daily Cares and Safety Flowsheet AND any of the available action options were selected: applied, removed, remains in place, refused, or other (comment). The DNP Project Lead recorded if abdominal binders were offered within 48 hours post-op; after the 48 hours threshold but before discharge; or not offered at all. Pre-intervention rates were compared to post-intervention rates using chi-square analysis.

Use

The rate of abdominal binder use during the hospital stay was calculated. "Use" was presumed when "abdominal binder" was clicked under the Miscellaneous Devices section of the Daily Cares and Safety Flowsheet AND one of the following action options were selected: applied, removed, remains in place, or other (comment). If "refused" was selected, it will be assumed that the patient did not use an abdominal binder at that time. However, if "refused" was initially selected but one of the items indicating binder use was selected at another time during the hospital stay, it was assumed that the binder was used. Pre-intervention rates were compared to post-intervention rates using Chi-Square analysis.

Associations with Demographics

Chi-square analysis was used to assess for associations between post-intervention abdominal binder offering and race/ethnicity as well as offering and BMI to assess for evidence of unintended bias. The variable of race/ethnicity was divided into two nominal groups: white and BIPOC. If the chi-square analysis detected an association, this may have suggested that

race/ethnicity or weight played a role in whether or not a patient was offered an abdominal binder. This could raise suspicion for unintended bias among nurses.

Ethical Considerations/Permissions

Because data was obtained through a retrospective chart review, a waiver of consent was obtained. Data was compiled in an Excel spreadsheet on a password-protected computer featuring an encrypted hard drive located in office 4031 in the University of Louisville School of Nursing. Data was confidential, and participants' medical record number was stored in this location. Following the completion of data collection, the list of medical record numbers was extracted from the original spreadsheet leaving only the corresponding anonymous case numbers. The remaining data spreadsheet that was used for analysis was completely deidentified with only case numbers listed. This data was entered into the Statistical Package for Social Sciences (SPSS) system for analysis. HIPAA standards were maintained throughout the data collection process.

Results

Of the 270 charts reviewed, 254 met inclusion criteria (110 pre-intervention and 144 post-intervention). Duplicated MRNs due to multiple gestation births and high acuity births requiring intensive care were the most common reasons for exclusion.

Demographic overview

The samples were very similar in characteristics. Both pre- and post-intervention groups were composed of a majority BIPOC population at 58.2% and 59% respectively. Over 95% of both the pre- and post-intervention deliveries occurred via Pfannenstiel incisions, with only a small percentage occurring via Classical or other incision types. The samples were also similar in number of c-sections; a majority of both groups were primary cesarean sections. As the count of

cesarean sections increased, the percentage of cases decreased within both samples. The majority of patients in both samples delivered at a BMI of 40 or greater. The subsequent percentages of patients in each BMI category decreased along the same pattern; the next most common category of BMI was 30-34.9, followed by 25-29.9, 35-39.9, 18.5-24.9, and finally <18.5. See Table 1.

Table 1
Characteristics of Sample

Characteristics	Pre-Intervention (n = 110)		Post-Intervention (n = 144)	
	n	%	n	%
Race/ethnicity				
White	46	41.8	59	41
BIPOC	64	58.2	85	59
BMI*				
<18.5	0	0.0	1	0.7
18.5-24.9	12	10.9	8	5.6
25-29.9	22	20.0	29	20.1
30-34.9	28	25.5	39	27.1
35-39.9	16	14.5	25	17.4
>40	32	29.1	42	29.2
Number of c-sections				
Primary	55	50	75	52.1
Second	38	34.5	35	24.3
Third +	17	15.5	34	23.6
Uterine incision type				
Pfannenstiel	107	97.3	137	95.1
Classical	2	1.8	6	4.2
Other	1	0.9	1	0.7

*There is no obstetric-specific scale that measures body mass - these reflect the patients' BMIs just prior to delivery.

Offering

The rate of pre-intervention 48-hour post-cesarean offering was 32%, and the rate of post-intervention 48-hour post-cesarean offering was 45%. The rate of offering throughout patient stay increased from 37% pre-intervention to 53% post-intervention. A chi-square test for

independence indicated a significant association between group (pre- or post- intervention) and abdominal binder offering; post-intervention patient status was associated with higher rates of abdominal binder offering both within the first 48 hours post-op ((X^2 1, n = 254) = .031, p = 0.05) and before discharge ((X^2 1, n = 254) = .014, p = 0.05).

Use

The pre-intervention use rate was 26%, and the post-intervention use rate was 43%. A Chi-Square test for independence indicated a significant association between group (pre-or post-intervention) and abdominal binder use; higher rates of abdominal binder use were associated with post-intervention patient status (X^2 (1, n = 254) = .006, p = 0.05).

Demographic Characteristics

A chi-square test for independence indicated no significant association between race/ethnicity and abdominal binder offering during hospital stay among the post-intervention group (X^2 (1, n = 144) = .770, p = 0.05). Additionally, a chi-square test for independence indicated no significant association between BMI and abdominal binder offering during hospital stay among the post-intervention group (X^2 (5, n = 144) = .594, p = 0.05).

Staff Perception of Intervention

Staff reported satisfaction with the educational intervention. They particularly enjoyed the weekly drawing and endorsed this as a major motivator for offering their patients abdominal binders. They also reported that their patients seemed extremely satisfied with their abdominal binders. Some nurses reported that their patients were familiar and excited about the concept of abdominal binding, citing the major social media platform Tiktok as their primary source of education.

The nurse manager also noted that patients' satisfaction with their abdominal binders during her leadership rounds. Common themes that emerged from patients who used the binders were enhancements in comfort, sense of security, and ease in ambulation.

Discussion

Prior to the implementation of the educational intervention, 68% of post-cesarean patients were not offered an abdominal binder during the first 48 hours post-op, and 63% were not offered one before discharge. This prevented about 6 of every 10 women from benefitting from abdominal binder use. Following the educational intervention, abdominal binder offering within 48 hours significantly increased from 32% to 45% and offering before discharge significantly increased from 37% to 53%. Most notably, abdominal binder use significantly increased from 26% to 43% following the educational intervention. While this is encouraging, efforts must be made to continue promoting abdominal binder use as a standard of care to further increase abdominal binder use rates in the future.

Post-intervention status was associated with significantly higher rates of abdominal binder offering, but still, only 53% of patients were offered the binders before discharge. This did not align with staff perception that every post-cesarean patient had a binder at the bedside. The reason for this discrepancy is likely a lack of documentation. Some nurses cited the documentation process as new and difficult to remember. Others assumed that it was already documented if the binder was already present in the patient's room. Additional education could potentially mitigate these issues.

Of the 76 post-intervention patients who were offered an abdominal binder before discharge, 62 (82%) used them. The patient handout along with the staff's education likely encouraged these women to try the binder. However, shared decision-making and patient

autonomy were emphasized during the educational intervention. The perception of comfort varies from person to person, and a myriad of reasons could have prevented a patient from wanting to use the abdominal binder including uncontrolled pain, claustrophobic-like discomfort with the idea of abdominal compression, or simply feeling overheated. Staff were encouraged to prioritize patient preference above abdominal binder application.

Data analysis revealed no significant association between BMI and abdominal binder offering nor race/ethnicity and abdominal binder offering. These findings suggest that neither a patient's race nor BMI was associated with whether or not they were offered an abdominal binder. This is a positive finding given the potential for unintended racial and weight-related bias in healthcare.

Limitations and areas for future work

Future quality improvement projects could benefit from weekly data collection to assess the sustainability of the project. This was not available in this QI project because of technological limitations of the information technology department, but it would have allowed the DNP Project lead to more closely monitor rates of offering over time and intervene with additional educational interventions if needed.

A myriad of other outcomes could be explored regarding abdominal binder use. Patient questionnaires could assist in obtaining a more detailed understanding of patient perception of abdominal binder use. This could also help reveal additional information that could inform the unit of patient preferences. It would also be interesting to explore the potential relationship between abdominal binder use and opioid pain medication use in an experimental study design that could control for factors such as chronic conditions, history of opioid exposure, and extent of surgery.

Finally, an alternative documentation framework could be explored to improve ease of documentation for the nurses. The abdominal binder status section could be planted within the incision assessment of the Shift Assessment Flowsheet to provide for ease of documentation instead of remaining in a separate, less used area of the chart.

Conclusion

This quality improvement project resulted in significantly increased rates of abdominal binder offering and use in post-cesarean patients. Both staff and patients endorsed satisfaction with the intervention. Future educational interventions aimed at increasing rates of offering and use as well as documentation compliance would be prudent to promote access to this minimally invasive method of analgesia. This intervention is relatively inexpensive, sustainable, and could be reproduced in other settings.

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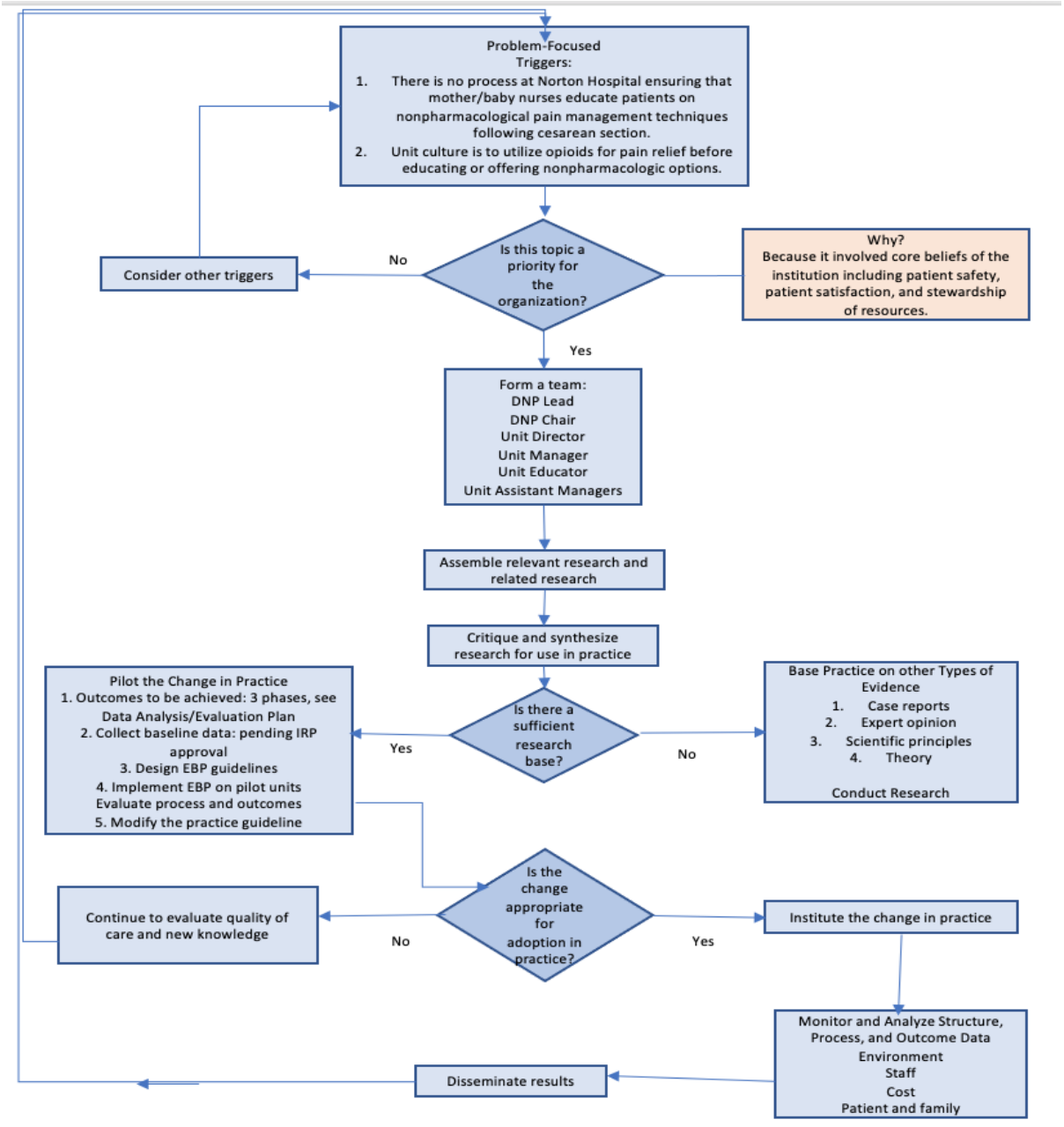
Appendix A

Application of The Iowa Model for Evidence-Based Practice at Norton Hospital



(Titler et al., 2001)

Appendix B

Patient Handout

Here to

Support You

Congratulations on the birth of your baby! We are here to help you manage postoperative pain following your cesarean section.

Ask your nurse about an abdominal binder!

An abdominal binder, sometimes called a belly band, is an elastic garment worn around your waist. Recent studies have shown that wearing an abdominal binder helps to…

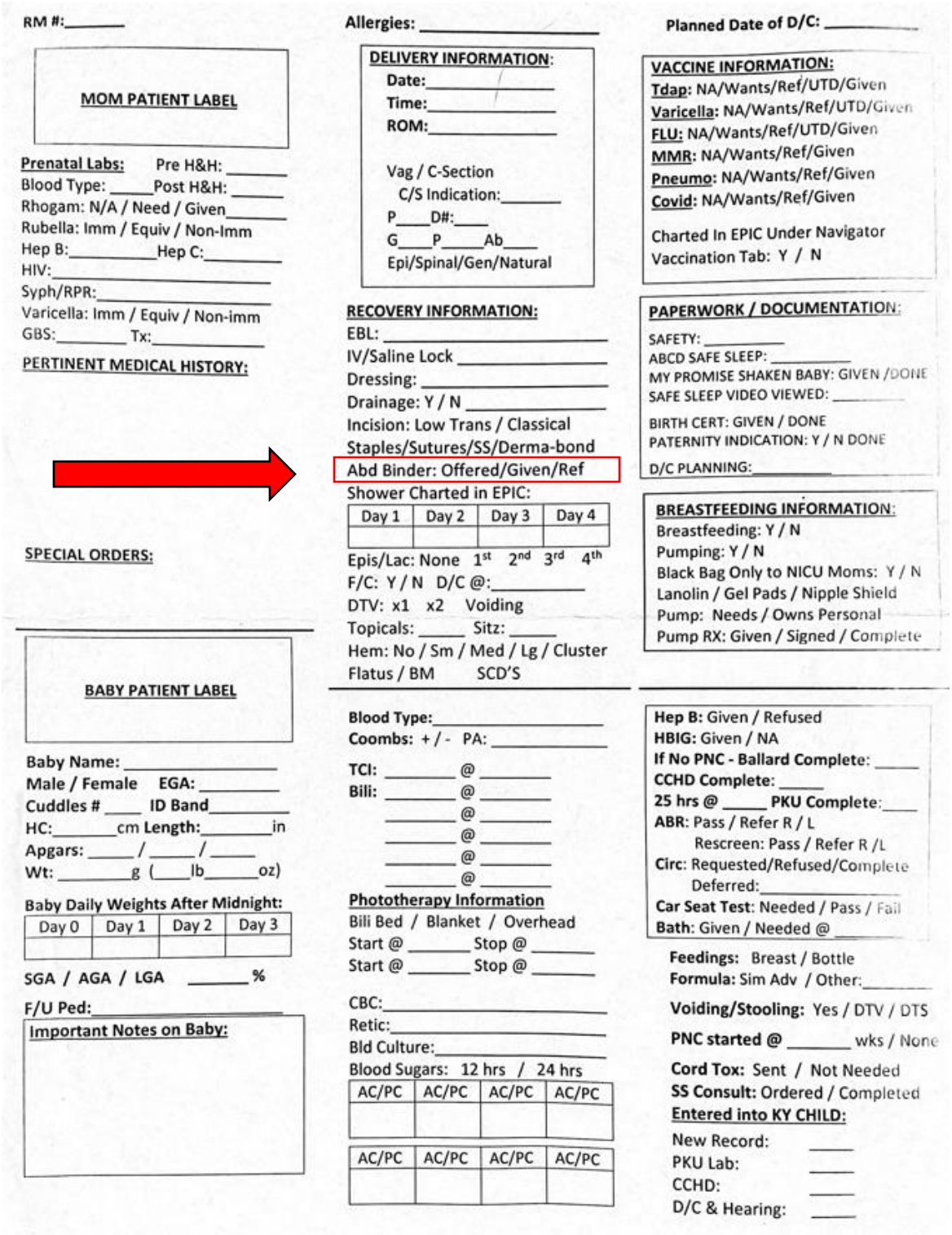
Decrease	Increase
• **Pain** • Fatigue • Nausea	• Comfort when moving • Bowel function • Concentration

Wearing an abdominal binder supports your incision and can make it easier to move, heal, and bond with your baby. Ask your nurse for an abdominal binder fitting to learn more!

Abd-ElGawad et al. (2021) & DiMascio et al. (2021)

Appendix C

SBAR Sheet



RM #:_____

MOM PATIENT LABEL

Prenatal Labs: Pre H&H: _____
Blood Type: _____Post H&H: _____
Rhogam: N/A / Need / Given_____
Rubella: Imm / Equiv / Non-Imm
Hep B:_____Hep C:_____
HIV:_____
Syph/RPR:_____
Varicella: Imm / Equiv / Non-imm
GBS:_____ Tx:_____

PERTINENT MEDICAL HISTORY:

SPECIAL ORDERS:

BABY PATIENT LABEL

Baby Name: _____
Male / Female EGA: _____
Cuddles # ____ ID Band_____
HC:_____cm Length:_____in
Apgars: _____/ _____/ _____
Wt: _____g (____lb_____oz)

Baby Daily Weights After Midnight:

Day 0	Day 1	Day 2	Day 3

SGA / AGA / LGA _____ %

F/U Ped:_____

Important Notes on Baby:

Allergies: _____

DELIVERY INFORMATION:
Date:_____
Time:_____
ROM:_____

Vag / C-Section
C/S Indication:_____
P____D#:____
G____P____Ab____
Epi/Spinal/Gen/Natural

RECOVERY INFORMATION:
EBL: _____
IV/Saline Lock _____
Dressing: _____
Drainage: Y / N _____
Incision: Low Trans / Classical
Staples/Sutures/SS/Derma-bond
Abd Binder: Offered/Given/Ref
Shower Charted in EPIC:

Day 1	Day 2	Day 3	Day 4

Epis/Lac: None 1st 2nd 3rd 4th
F/C: Y / N D/C @:_____
DTV: x1 x2 Voiding
Topicals: _____ Sitz: _____
Hem: No / Sm / Med / Lg / Cluster
Flatus / BM SCD'S

Blood Type:_____
Coombs: + / - PA: _____

TCI: _____ @ _____
Bili: _____ @ _____
_____ @ _____
_____ @ _____
_____ @ _____
_____ @ _____

Phototherapy Information
Bili Bed / Blanket / Overhead
Start @ _____ Stop @ _____
Start @ _____ Stop @ _____

CBC:_____
Retic:_____
Bld Culture:_____
Blood Sugars: 12 hrs / 24 hrs

AC/PC	AC/PC	AC/PC	AC/PC

AC/PC	AC/PC	AC/PC	AC/PC

Planned Date of D/C: _____

VACCINE INFORMATION:
Tdap: NA/Wants/Ref/UTD/Given
Varicella: NA/Wants/Ref/UTD/Given
FLU: NA/Wants/Ref/UTD/Given
MMR: NA/Wants/Ref/Given
Pneumo: NA/Wants/Ref/Given
Covid: NA/Wants/Ref/Given

Charted In EPIC Under Navigator
Vaccination Tab: Y / N

PAPERWORK / DOCUMENTATION:
SAFETY: _____
ABCD SAFE SLEEP: _____
MY PROMISE SHAKEN BABY: GIVEN /DONE
SAFE SLEEP VIDEO VIEWED: _____
BIRTH CERT: GIVEN / DONE
PATERNITY INDICATION: Y / N DONE
D/C PLANNING:_____

BREASTFEEDING INFORMATION:
Breastfeeding: Y / N
Pumping: Y / N
Black Bag Only to NICU Moms: Y / N
Lanolin / Gel Pads / Nipple Shield
Pump: Needs / Owns Personal
Pump RX: Given / Signed / Complete

Hep B: Given / Refused
HBIG: Given / NA
If No PNC - Ballard Complete: _____
CCHD Complete: _____
25 hrs @ _____ PKU Complete:____
ABR: Pass / Refer R / L
Rescreen: Pass / Refer R /L
Circ: Requested/Refused/Complete
Deferred:_____
Car Seat Test: Needed / Pass / Fail
Bath: Given / Needed @ _____

Feedings: Breast / Bottle
Formula: Sim Adv / Other:_____
Voiding/Stooling: Yes / DTV / DTS
PNC started @ _____ wks / None
Cord Tox: Sent / Not Needed
SS Consult: Ordered / Completed
Entered into KY CHILD:
New Record: _____
PKU Lab: _____
CCHD: _____
D/C & Hearing: _____

Appendix D

Staff Handout

Make sure your c-section patients have been offered an abdominal binder fitting by 48 hours post-op!

Why should each c-section patient be offered an abdominal binder?

- Abdominal binder use has been shown to DECREASE pain, fatigue and nausea while INCREASING sleep quality, bowel function, and concentration.
- The abdominal binder provides constant splinting to the incision, providing support when the patient moves or ambulates.

What do I have to do?

- On admission, give your c-section patient a "Here to Support You" handout (located in paperwork cabinet).
- Offer the patient an abdominal binder at an appropriate time within 48 hours post-op. Examples of appropriate times:

1. **The patient is stable**. Your post-op fundal checks are done, the patient is not nauseous, and she is ready to start interacting with her baby. It can be applied to prevent the onset of severe pain as the medications given during surgery are wearing off.
2. **It's time for her to get up to the bathroom for the first time.** Gentle compression against the incision provides constant splinting to help make ambulation less painful.
3. **Before the pain is severe**. Using the binder can help prevent the pain from becoming severe.
4. **Your patient asks for pain medication**. ALONG WITH the pain medication, ensure they are aware than an abdominal binder might also help with their pain.

- Update the green sheet to indicate that the patient has been educated on abdominal binder use. Review this with the oncoming nurse during bedside handoff.

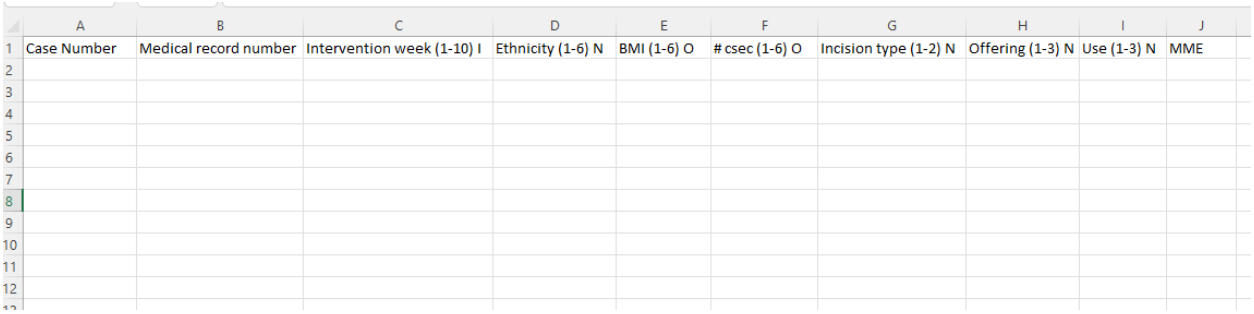
How do I chart this?

1. Flowsheets
2. Daily cares/safety
3. Scroll down until you see "miscellaneous devices"
4. Click "abdominal binder" and press Enter
5. Select an option: applied, removed, remains in place, refused, other (comment) – leave a comment

Problem	Solution
The binder is too tall on my patient – it's pressing up against her breasts.	2 options: 1. Cut a panel off of the abdominal binder. 2. Help her reposition the binder lower on the trunk as if it is an ultra-short mini skirt.
The M/L won't fit around my patient's abdomen.	Use a S/M size binder as an extender.
My patient hates the abdominal binder and won't wear it.	That is ok! Just chart "refused". The important thing is that she was offered one!
There aren't any abdominal binders in the stock room.	1. Call "3rd floor supply tech" on Vocera and request more. 2. Check the other unit or pencil room on L&D if you have time. 3. Call the charge nurse if you need help.
I have another issue that isn't addressed here.	Text Sarah Cohron any time and she will respond as soon as she sees your message! 270-999-5468

Appendix E

Data Collection with Medical Record Number



	A	B	C	D	E	F	G	H	I	J
1	Case Number	Medical record number	Intervention week (1-10) I	Ethnicity (1-6) N	BMI (1-6) O	# csec (1-6) O	Incision type (1-2) N	Offering (1-3) N	Use (1-3) N	MME
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

Appendix F

Data Collection without Medical Record Number

	A	B	C	D	E	F	G	H	I
1	Case Number	Intervention week (1-10) I	Ethnicity (1-6) N	BMI (1-6) O	# csec (1-6) O	Incision type (1	Offering (1-3) N	Use (1-3) N	MME
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									