COMPLETE

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Page 1: Background Information

Q1

First Name

Sheena

Q2

Last Name

Hembrador

Q3

Credentials

MD

Q4

Institution

Virginia Mason Medical Center

Q5

Street Address

1100 9th Ave

Q6

City

Seattle

Q7

State

WA

Q8

Zip Code

98101

Q9

Country

USA

Q10

Email address

Sheena.Hembrador@virginiamason.org

Page 2: Institutional and Application Details

Q11

Please mark the application designation that is applicable to you.

Previously applied without success (but with fee waiver for reapplication)

Q12

Describe the institution where you provide obstetric anesthesia services

Academic/university affiliated

Q13

What is the country of the applying institution

USA

Q14

If USA application, what is the institution's zip code?

98101

Q15

Mark all that apply to your institution

Train/teach residents,

Train/teach other learners (student nurse anesthetists, anesthesiology assistants, medical students, etc.)

Q16

How many deliveries are there at your institution per year?

Approximately 312 babies have been delivered over the last year. As of 8/31/22, 541 babies have been born at our birth center since it opened on Aug 10, 2020.

Q17

What is the current cesarean delivery rate percentage at your institution? Do not enter percentage sign in your answer. Please answer in decimal format.

30.0

Page 3: General Anesthesia Rates

Q18

What is your institution's overall general anesthesia rate (percentage) for cesarean delivery?* Do not include percentage sign in answer. Please answer in decimal format.

5.0

Q19

What is your general anesthesia rate (percentage) for planned/scheduled/elective cesarean delivery? Do not include percentage sign in answer. Please answer in decimal format.

0.0

Q20

What is your general anesthesia rate (percentage) for unplanned/intrapartum/urgent cesarean delivery? Do not include percentage sign in answer. Please answer in decimal format.

5.0

Q21

Do you conduct a quality assurance review of all cases requiring general anesthesia (irrespective of your institution's general anesthesia rate)? Please provide (attach with application) evidence of your quality assurance review process.

Yes

Page 4: Institutional Details

Q22

What percentage of laboring patients at your institution receive neuraxial analgesia? Do not include percentage sign in answer. Please answer in decimal format.

70.0

Q23

What is your labor epidural block replacement rate (percentage)? The labor epidural replacement rate should ideally be 3-6%. Do not include the percentage sign in your answer. Please answer in decimal format.

4.3

Q24

What is your institution's "wet-tap" rate (percentage) in the obstetric setting? Do not include the percentage sign in your answer. Please answer in decimal format.

0.7

Q25

What is your institution's "epidural blood patch (EBP)" rate (percentage) in the obstetric setting? Do not include the percentage sign in your answer. Please answer in decimal format.

0.0

Q26

How many labor and delivery rooms are in your obstetric unit?

4

Q27

How many operating rooms are in/dedicated to your obstetric unit?

2

Q28

What American College of Obstetricians and Gynecologists (ACOG) level of maternal care (Level 1, 2, 3, or 4) is your institution? (https://www.acog.org/clinical/clinical-guidance/obstetric-care-consensus/articles/2019/08/levels-of-maternal-care)

Level 2

Page 5: Personnel and Staffing:

Q29

How many faculty in total cover the obstetric anesthesia service (day, night, weekends, and holidays)?

Currently, one of the two obstetric anesthesiology fellowship trained faculty cover the service during the weekdays. A total of 34 anesthesiologists cover the service on nights or weekends.

Q30

How many of the total faculty that cover the obstetric anesthesia service have completed an ACGME-accredited obstetric anesthesia fellowship, and/or have equivalent expertise and experience in obstetric anesthesia (e.g. specific training in obstetric anesthesia, several years of practice with a focus on obstetric anesthesia, and/or evidence of expertise based on academic contributions)? Please enter the actual number and the percent of total faculty.

2, 6%

Q31

On a daily basis, how many staff are assigned to provide dedicated coverage for the obstetric anesthesia service during the daytime?

*Attending physician:	**1**
Certified Registered Nurse Anesthetists (CRNA) / Certified Anesthesiologist Assistants (CAA)	**1**

Q32

On a daily basis, how many staff are assigned to provide dedicated coverage for the obstetric anesthesia service during the nighttime?

*Attending physician:	**1**
Certified Registered Nurse Anesthetists (CRNA) / Certified Anesthesiologist Assistants (CAA)	**1**

Q33

On a daily basis, how many staff are assigned to provide dedicated coverage for the obstetric anesthesia service during the weekends?

*Attending physician:	**1**
Certified Registered Nurse Anesthetists (CRNA) / Certified Anesthesiologist Assistants (CAA)	**1**

Q34

Estimate the proportion of each shift covered by attending specialists vs. generalists (percentage). Please do not include the percentage sign in your answer. Please answer in decimal format.

Daytime	**95.0**
Nighttime	**8.0**
Weekends	**8.0**

Q35

Are all neuraxial procedures (spinal/epidural/combined spinal epidural (CSE)/dural puncture epidural(DPE)) in labor and operating rooms performed under direct supervision of the attending physician when performed by Fellow, Resident, Student Registered Nurse Anesthetists (SRNA) and/or CRNA?

Yes

Q36

*Outline the expertise and experience of the obstetric anesthesia lead. The obstetric anesthesia lead must be a board-certified physician anesthesiologist who has completed an ACGME-accredited obstetric anesthesia fellowship, and/or has equivalent expertise in obstetric anesthesia. If equivalent expertise, the basis for this must be clearly delineated (e.g. specific training in obstetric anesthesia, several years of practice with a focus on obstetric anesthesia, and/or evidence of expertise based on academic contributions). Please provide the curriculum vitae of the lead obstetric physician anesthesiologist with your application.

Sheena Hembrador is the Section Head for Obstetric (OB) Anesthesia. She is a board-certified physician anesthesiologist. She completed an ACGME-equivalent fellowship program in OB anesthesiology at the University of Washington in 2018. She is published in peer-review journals in the field of OB anesthesia, participated in a FAER fellowship in OB anesthesia, and she has given multiple presentations at SOAP.

Please see attached supporting documents for her curriculum vitae (CV).

Q37

*Provide evidence of ongoing participation in continuing medical education and professional practice improvement. The obstetric anesthesia lead and the majority of core faculty members need to show evidence of ongoing participation in continuing medical education relevant to the practice of obstetric anesthesia (e.g. SOAP membership, attendance at a SOAP conference or equivalent obstetric anesthesia-focused meeting at least every other year, and can provide examples of professional practice improvement or evidence-based updates to clinical practice).

The two core faculty members for obstetric anesthesia are active SOAP and ASA members, and have between them yearly attendance to the annual meetings. The members have had their academic contributions related to maternal health recognized by the Foundation for Anesthesia Education and Research (FAER), SOAP Gertie Marx Competition, and the Washington State Society of Anesthesiologists. Both members participate in quality improvement programs related to neonatal resuscitation and management of hypertensive disease in pregnancy for both our specific institution as well as our larger 11 hospital regional division. Dr. Hembrador is also a member of the management committee of the Obstetrical Care Outcomes Assessment Program (OB COAP, https://www.qualityhealth.org/obcoap/), which aims to improve quality of maternal care.

Q38

If applicable, please also outline efforts made to ensure continuing medical education for all non-core faculty that cover the obstetric service.

Upon opening the birth center, Dr. Hembrador created a 6-part lecture series aimed to be an OB Anesthesia “Boot Camp.” These lectures reviewed current OB Anesthesia practice with all anesthesia staff. The lectures were videotaped, and are posted online on a dedicated Virginia Mason OB Anesthesia SharePoint website for 24/7 access. This lecture series was coupled with two weeks of daily multidisciplinary simulation in OB Anesthesia emergencies just before opening of the birth center. All faculty and CRNAs that work on the unit are also required to undergo competency training on topics like maternal hypertensive diseases every two years.

Q39

Outline obstetric anesthesia-related staff meetings. Regular (e.g. every 1-2 months) staff meetings for obstetric anesthesia providers to provide clinical service updates and ongoing education is recommended.

We have a monthly anesthesiology staff meeting (MDs & CRNAs) with dedicated time for the obstetric anesthesia service to cover clinical service updates, a bimonthly multidisciplinary birth center quality committee meeting, a bimonthly women and children’s service line quality improvement subcommittee meeting with the 11 hospital system regional division, quarterly unit drills, quarterly OB Anesthesia core team meetings with drills, a dedicated onboarding lecture series on basic obstetric anesthesia care, and approximately 5-7 lectures per year dedicated to obstetric anesthesia for all anesthesia residents, CRNAs, and anesthesia faculty.

Q40

*Outline your coverage model. In-house (24/7) coverage of obstetric patients, by at least one board-certified (or equivalent) physician anesthesiologist who is dedicated to cover the obstetric service without additional responsibilities for non-obstetric patients is emphasized. If a low volume center (<1500 deliveries per year), non-dedicated coverage with minimal additional responsibilities may be acceptable. If a very high volume center (>5000 deliveries per year), solo dedicated coverage may not be adequate unless there is a readily available physician anesthesiologist backup with adequate numbers of trainees/CRNAs to support the clinical load. If applicable, provide the full list of out-of-unit responsibilities, and the frequency at which faculty are called to complete these duties outside the obstetric unit.

There is a board-certified or board-eligible physician anesthesiologist in the hospital 24/7 that is required by institutional policy to be present for all neuraxial procedures, induction of and emergence from general anesthesia on the obstetrical unit. Ours is a very low volume center (≤ 1 delivery per day), thus the OB anesthesia physician may sometimes be assigned additional responsibilities depending on the level of activity on labor and delivery. For example, if there are no patients admitted on labor and delivery, the OB anesthesia attending may be given a room in the main OR with cases that would be conducive to going between the main OR and labor and delivery should someone be admitted. Conversely, if labor and delivery is active, the OB Anesthesia attending would be assigned to provide dedicated care to only labor and delivery. An extensive backup system of up to four on-call additional attending physician anesthesiologists is in place with strict expectations to be back and prepared to work within 30 minutes after a call. Thus, should labor and delivery become busy overnight, we can call a backup attending in from home to maintain consistent and readily accessible physician anesthesia coverage to our obstetric patients.

A subset of 14 CRNAs provide dedicated in-house coverage for labor and delivery. They remain in house and dedicated solely to the OB service while any patients are admitted.

Q41

Outline your supervision policy. In academic centers that train residents or fellows, institutional policy should dictate that the physician anesthesiologist dedicated to the obstetric floor is present (regardless of the level of experience of the trainee) for placement and induction of neuraxial labor analgesia procedures with rare exceptions (e.g. simultaneous emergency), and should be present (regardless of the level of experience of the trainee) at induction and emergence from general anesthesia. For team-based (physician plus CRNA) care models, physician leadership and active medical management involvement is necessary. Evidence of physician contribution to education and training of fellow, resident, CRNA and Student Registered Nurse Anesthetist (SRNA) should be provided.

Before initiation of neuraxial anesthesia, whether for labor analgesia or surgical anesthesia, there is an institutionally required “time out” procedure. This “time out” requires the presence of the supervising physician anesthesiologist. Our division expectations require the attending to be present and actively engaged in a cesarean delivery under neuraxial anesthesia from initiation of anesthesia until the patient and neonate are deemed stable after delivery. This includes being present for delivery of the neonate, closure of the uterus, administration of any uterotonic medications, and available if resuscitation efforts are needed for the mother or neonate. For general anesthesia, attending anesthesiologists are required to be present for all critical portions of the anesthetic, which include induction and emergence in addition to the division expectations for cesarean under neuraxial anesthesia. Anesthesia plans are prescribed by the attending physician anesthesiologist, and attendings sign attestations for every case that they are present for the aforementioned critical portions of the anesthetic.

Continued education for CRNAs, residents, and fellow attending anesthesiologists is done by the obstetric anesthesia division. This takes the form of regularly scheduled obstetric anesthesia lectures, scheduled updates to our protocols, and an online education series available to all hospital staff. Simulations are scheduled at least quarterly to identify areas of improvement and to provide education to multidisciplinary teams.

Q42

*Outline your backup system. Ability to mobilize (within 30-minute timeframe) additional anesthesia personnel in case of obstetric emergencies or high clinical volume beyond the capacity of in-house staff assigned to the obstetric service is required.

We have an extensive backup system to ensure adequate care can be provided to our obstetric patients. In addition to the 24/7 in-house supervising attending physician anesthesiologist and dedicated CRNA, there is an in-house anesthesiology resident available for emergencies. Should the clinical need arise, a second attending anesthesiologist, a cardiac anesthesiologist, and an additional anesthesiology resident are always on call from home, and must remain within 30 minutes of the hospital to assist with clinical volume that exceeds the capabilities of the in-house team.

Q43

Outline if anesthesia techs or equivalent are staffed on the obstetric unit. Describe their availability (24/7 or only daytime) and if anesthesia techs are dedicated to the obstetric service.

Anesthesia techs are assigned to the obstetric unit. They are in-house from 5am-7pm, and on call from home between 7pm-5am. We would like to have a dedicated OB anesthesia tech, however with our low patient volumes, sometimes the OB anesthesia tech also gets assigned duties outside of labor and delivery.

Page 6: Equipment, Protocols and Policies

Q44

Outline your hemorrhage risk stratification algorithm and management protocol. Protocols should consider core elements of the National Partnership Obstetric Hemorrhage Bundle (1), California Maternal Quality Care Collaborative Obstetric Hemorrhage Toolkit (2), or comparable recommendations to manage obstetric hemorrhage.

Our obstetric hemorrhage management plan follows the four action domains outlined in the National Partnership Obstetric Hemorrhage Bundle.

Readiness:
- Our unit has two hemorrhage carts stocked with tools for IV access and lab draws, resuscitation (pressure bag, extra crystalloid), and OB surgical tamponade (Bakri balloon). It also has a refrigerated drawer for a uterotonic kit (oxytocin, methergine, hemabate, misoprostol, and tranexamic acid (TXA)).
- The primary hemorrhage response team consists of the OB, midwife, L&D RNs, and the anesthesiology team (MD & CRNA).
- Gynecology-oncology teams, Interventional Radiology, and Critical Care teams are also always on call as needed
- There is a detailed, institution-wide Massive Transfusion Protocol, with subsections that apply to OB. A distilled version of this protocol exists in an emergency binder on the top drawer of every anesthesia machine.
- The birth center conducts regular multidisciplinary drills in the birth center with high fidelity adult and neonatal mannequins.

Recognition and Prevention:
- Hemorrhage risk is assessed antenatally, and intrapartum. If a woman is determined to be at high risk for hemorrhage by OBs or midwives, she is scheduled for an antenatal preanesthesia assessment so that her clinical state is well understood by our staff, and we can formulate a plan prior to her admission on labor and delivery.
- Real-time quantitative blood loss is calculated for all deliveries
- There is an oxytocin protocol for active management for third stage.

Response:
- We have a staged, OB-specific hemorrhage management protocol
- Multidisciplinary debriefs are performed after every hemorrhage
- Patients are screened by nurses postpartum for any distress related to delivery or need for extra support

Reporting and Systems Learning:
- Huddles to discuss patients are performed twice a day, and we have a “White Board-Good-to-Go” system to address pre-procedural communication.
- Nurses regularly extract data from every patient according to California Maternal Quality Care Collaborative (CMQCC) guidelines, and our unit holds bimonthly multidisciplinary “Perinatal Quality Collaborative” meetings.
- There is an Anesthesiology specific Quality Improvement (QI) reporting system for every procedure or surgery. Reported QI events are regularly evaluated by the Section Head for OB Anesthesiology.

Q45

*Describe your massive transfusion protocol. Availability of a massive transfusion protocol with O-negative blood and other blood products, and an emergency release system for available blood is essential. Blood bank protocol needs to have been tested and be functional on the obstetric unit.

Our massive transfusion protocol (MTP) details how dialing extension “B-L-O-O-D (x2-5663)” on any hospital phone will rapidly activate a sequence of events that will emergently deliver uncrossmatched blood products (4 units of red blood cells (RBCs), 4 units fresh frozen plasma (FFP), 1 unit apheresis platelets, and 2 units of cryoprecipitate), and a team of experts (Code Blue team, Anesthesiology Code team, 2 RNs from either the CCU or ED, surgery resident, Transfusion services physician) to assist in resuscitation efforts. The RBCs and FFP will arrive first, and target delivery time is within 8 minutes of the call. The MTP is generalized for hemorrhage throughout the hospital, however there are OB-specific subsections.

Please see Figure 1 in the Equipment, Protocols and Policies Supplement.

Q46

*Describe your rapid-infuser devices. Rapid-infuser device to assist with massive resuscitation (e.g. Belmont® Rapid Infuser, Level 1® Fast Flow Fluid Warmer) should be stored on the obstetric unit.

We have one Belmont® Rapid Infuser, Level 1® Fast Flow Fluid Warmer in the substerile core that is equidistant from our two birth center ORs. Each OR also has its own in-line, Ranger® IV fluid warming device.

Please see Figure 2 in the Equipment, Protocols and Policies Supplement.

Q47

Outline how obstetric blood loss is recorded (quantitative versus estimated blood loss) and how the incidence of postpartum hemorrhage is tracked.

Quantitative blood loss (QBL) is recorded by the nurses for every delivery on the unit. QBL is just one of the many variables that are recorded by the nurses doing chart abstraction for the California Maternal Quality Care Collaborative (CMQCC) database. Our incidence of postpartum hemorrhage is reviewed at our bimonthly multidisciplinary birth center quality committee meeting. Cases with QBL >1500 mL are individually reviewed, with a multidisciplinary debrief performed soon after the case is complete.

Q48

*Outline plans for difficult peripheral and/or central intravascular access, e.g. ultrasound and intraosseous kits available.

For difficult IV access, a linear ultrasound probe can be quickly brought up from the main OR. There is a dedicated ultrasound on the birth center, but it currently only has a curvilinear probe. The budget request for a dedicated linear probe has been approved. We anticipate that we will have a dedicated linear ultrasound probe in the coming months. Central Line kits, both triple lumen catheters and larger-bore Cordis catheters, are also readily available in the birth center substerile core. Intraosseous kits are available on call from the ED.

Q49

Describe your point-of-care equipment to assess hematocrit and/or coagulation. Outline if thromboelastography (TEG®), thromboelastometry (ROTEM®), sonorheometry (QuantraTM) or other viscoelastic monitoring technology are available to guide management.

We use the Abbott i-Stat 1® to measure point-of-care (POC) hematocrit, blood gases, and glucose. Additionally, a Haemonetics® thromboelastography system was purchased by our laboratory earlier this year to provide access to real time thromboelastography (TEG®) and thromboelastometry (ROTEM®). Training on this new system was provided in April of 2022 to all anesthesia providers. The training session recording was posted on the OB Anesthesia SharePoint website.

Q50

Outline availability of intraoperative cell salvage for patients who refuse banked blood, and/or during high-risk cesarean deliveries. How are patients who refuse blood transfusion identified prior to presenting for delivery, counselled regarding blood product options, and prepared or optimized for delivery?

We have intraoperative cell salvage with the capability of maintaining a continuous circuit with the patient's circulation to accommodate those who refuse banked blood for personal/religious reasons. Our anesthesia techs set up and manage our intraoperative cell salvage systems, and they can set it up preoperatively if a patient is deemed at high risk for hemorrhage. Acceptance of a blood transfusion is part of a standard obstetric consent for treatment, which is usually performed later in the third trimester, prior to presenting in labor. Patients that refuse blood transfusion are scheduled for early preanesthesia assessment so that we can have a detailed discussion with signed consent for all of the various blood products that the patient will and will not accept. Also, patients who are anemic prior to delivery can receive iron transfusions for optimization.

Please see Figures 2 and 3 in the Equipment, Protocols and Policies Supplement.

Q51

Describe your hemorrhage quality assurance review process. Quality assurance review of all "severe" hemorrhage cases (defined at an institutional level, e.g. >4 unit blood transfusion) and all unplanned intrapartum hysterectomies should be in place so that opportunities for improvement can be identified and initiated.

Vaginal and surgical deliveries are flagged with a Patient Safety Alert (PSA) if the hemorrhage is severe enough to require additional treatment and/or if they require any blood transfused. After a case is flagged, it is sent for review by the nurse manager, midwives/OB, and OB anesthesiology. A multidisciplinary perinatal quality committee reviews these cases together on a monthly basis.

Please see Figure 4 in the Equipment, Protocols and Policies Supplement for an example of our PSA entry form.

Q52

*Briefly describe and provide your institution's obstetric hemorrhage toolkit (including protocols, checklists and/or algorithms).

Our unit has two hemorrhage carts stocked with tools for IV access and lab draws, resuscitation (pressure bag, extra crystalloid), and OB surgical tamponade (Bakri balloon). It also has a refrigerated drawer for a uterotonic drug kit (oxytocin, methergine, hemabate, misoprostol, TXA).
The OB specific hemorrhage protocol (See Appendix I) first outlines a method for screening every patient antepartum for hemorrhage risk factors. Once the risk of hemorrhage is determined, specific prophylactic measures depending on level of risk are detailed. The protocol then outlines management of active hemorrhage in a manner that is staged based on severity of the hemorrhage.

Q53

*Outline your policies/procedures for suspected abnormal placentation (e.g. placenta accreta/percreta) cases. Describe the location (obstetric or main operating suite), staffing (e.g. obstetric anesthesia specialists), planning process (e.g. multidisciplinary meeting) and other considerations (e.g. blood management) for these cases.

Our birth center is classified as an ACOG Level 2 site, thus patients that are suspected to have more severe forms of abnormal placentation (for example increta or percreta) are referred out to a higher level of care. To date we have had less than five patients with concern for mild abnormal placentation (for example, confirmed placenta previa). These patients were identified well in advance of planned surgical delivery, and a multidisciplinary plan was formulated with OB and anesthesiology. These cases were all staffed by obstetric anesthesia specialists in the obstetric operating suites.

Q54

Outline your difficult airway cart and supplies (laryngoscopes, endotracheal tubes, rescue airway devices (e.g. supraglottic airway device such as a laryngeal mask airway), video-laryngoscope and surgical airway equipment) that are stored on the obstetric unit.

Every obstetric operating room has its own difficult airway cart. On top of this cart is a Karl Storz® screen for either a C-mac® video laryngoscope or flexible video bronchoscope. The cart carries both a D-blade for adults and Miller 0 and 1 blades for neonates, and a standard adult flexible bronchoscope. The bottom drawer of the difficult airway cart has an emergency percutaneous tracheostomy kit (RÜSCH QuickTrach®).

Our standard OB anesthesia carts carry 6.0 and 6.5 cuffed endotracheal tubes, wire stylets, bougies, oral- and nasopharyngeal airways, size 3, 4, and 5 Teleflex® Unique LMAs, and a bag-mask “ambu-bag” ventilator.

There are four neonatal crash carts throughout the labor and delivery ward. The top drawer of these carts has airway tools specific for the neonate. It contains size 2.5, 3.0, 3.5, and 4.0 uncuffed endotracheal tubes, corresponding wire stylets, Miller 0 and 1 blades with handles for direct laryngoscopy, size 1 LMAs, bulb suction devices, a meconium suction trap aspirator, and neonatal flexible suction tubes.

Q55

*Describe if you have an obstetric-specific difficult airway protocol on the difficult airway cart and in obstetric operating rooms.

All obstetric patients are treated as having “difficult airways,” with a low threshold to use the tools in the difficult airway cart. Thus, the obstetric ORs are the only ones in the whole hospital with dedicated difficult airway carts. Given the relative edema of a maternal airway, smaller endotracheal tubes are preferentially stocked in the obstetric ORs, whereas 7.0 and 7.5 endotracheal tubes are the adult standard elsewhere. The standard American Society of Anesthesiologists (ASA) difficult airway algorithm is practiced.

Q56

Describe the availability of suction devices. Suction and a means to deliver positive pressure ventilation (e.g. bag-valve mask device) is required to be immediately available in readily accessible locations where neuraxial analgesia/anesthesia and/or general anesthesia are administered.

All ORs and labor and delivery rooms have wall suction capabilities for both mother and neonate, and appropriately sized Yankaur suction tips and tubing. Bag-mask “ambu-bag” ventilators hang on the bed in every labor and delivery room, and in the bottom drawer of every OR anesthesia cart. All ORs and labor and delivery rooms have wall oxygen supply outlets.

Q57

Describe your in-house backup plan to provide personnel with surgical airway access skills if needed 24/7.

The Emergency Department is staffed with an MD 24/7 who can provide backup surgical airway skills.

Q58

*Outline your lipid emulsion availability, appropriate supplies, and protocols that allow a timely response to local anesthetic systemic toxicity.

We use a standard block cart for all neuraxial and peripheral nerve blocks. In the top drawer of that block cart is a lipid emulsion bolus and infusion kit, with a quick reference laminated protocol on how to treat local anesthetic systemic toxicity.

Please see Figure 5 in the Equipment, Protocols and Policies Supplement for a picture of our lipid emulsion bolus and infusion kit.

Q59

Outline your malignant hyperthermia protocol. Dantrolene formulations and sterile water vials, along with other supplies must be available to allow a timely response to malignant hyperthermia.

A laminated malignant hyperthermia protocol is in an emergency binder in the top drawer of every anesthesia machine. After activating the malignant hyperthermia protocol, a pharmacist will deliver a kit with Ryanodex and sterile water, and aid in reconstitution and administration as needed. A malignant hyperthermia drill was last performed in the birth center in Aug 2022, and at that time it took 5 minutes for the pharmacist to deliver the malignant hyperthermia kit to the unit.

Please see Figure 6 in the Equipment, Protocols and Policies Supplement for a picture of our laminated malignant hyperthermia protocol.

Q60

Outline cognitive aids and training resources. Provide evidence for cognitive aids and clinician awareness of resources to manage emergencies, and training to facilitate team member awareness of the location and means to retrieve resources to better manage emergencies.

Please see Figure 7 in the Equipment, Protocols and Policies Supplement for pictures of our Emergency Binder. Interdisciplinary simulations of emergencies are performed regularly in the birth center with the help of staff from our Jones Learning Center.

Q61

*Outline availability and usage by obstetric anesthesia providers of ultrasound devices for peripheral and central intravenous access, neuraxial blocks, regional blocks (e.g. transversus abdominis/quadratus lumborum/erector spinae), and point-of-care evaluations (gastric, airway, lung, and cardiac).

There is a dedicated Sonosite® curvilinear ultrasound in our birth center for assessment of the fetus and for spine ultrasound. If another kind of ultrasound probe is required, for example a linear probe for vascular access or regional blocks, or a phased array probe for cardiopulmonary exam, we can call our anesthesia tech to bring those ultrasound probes up from the main OR. The budget for an additional dedicated linear probe was approved. We anticipate it will finally arrive in the coming months.

Q62

*Describe systems in place to ensure inter-professional communication and situational awareness on your obstetric unit such as: board sign-out at each shift change of anesthesiology staff; pre-procedural timeouts; post-procedural briefings, as indicated; daily multidisciplinary rounds or huddles to discuss management plans for patients on labor and delivery, antepartum and postpartum.

Every morning at 7am anesthesiology participates in a board sign-out with RNs on the labor and delivery unit corresponding to nursing change of shift.

Preoperatively we utilize a “White Board – Good-to-Go” system to facilitate interprofessional communication. The system utilizes a white dry erase board and a red/green “Stop/Good-to-Go” laminated sign. Nurses, surgeons, and anesthesiologists must all sign their portions of the dry erase board before the laminated sign can be flipped from red to green, designating that the patient is ready to go to the operating room. The top portion of the dry erase board is blank for free text to communicate special items that need to be done prior to going to the operating room.

Please see Figure 8 in the Equipment, Protocols and Policies Supplement for pictures of the “White Board – Good-to-Go” system. This system was originally developed for the main OR using the “Virginia Mason Production System (VMPS).” Please visit https://www.virginiamason.org/vmps for more info. In summary, in 2002, Virginia Mason embarked on an ambitious, system-wide program to change the way it delivers health care and in the process, improve patient safety and quality. It did so by combining basic tenets of the Toyota Production System (TPS), and elements from the philosophies of kaizen and lean, to create the Virginia Mason Production System (VMPS). Brainstorming and testing sessions with multiple stakeholders found that the “White Board – Good-to-Go” system was the best at facilitating interdepartmental communication, without slowing down patient care.

Q63

Outline how timeouts are performed prior to all anesthetic interventions.

Timeouts are performed prior to all anesthetic interventions. Please see Figure 9 in the Equipment, Protocols and Policies Supplement for pictures of our procedural time out workflow and quick reference. In summary, all supplies are gathered and equipment prepared prior to a preprocedural time out where the attending physician anesthesiologist must be present and participating. The timeout occurs after sterile prep and draping, but prior to any skin injection. During the timeout we confirm key facts such as: patient identity, allergies, anticoagulation status, regional procedure to be performed and appropriate laterality, monitors, that resuscitation medications available, and proper preparation of the tools.

Q64

Outline evaluations by the anesthesiology service of: 1) all patients undergoing scheduled cesarean delivery and other obstetric-related surgeries, and 2) the vast majority of patients presenting to labor and delivery. Patients presenting to labor and delivery should be triaged, and/or evaluated by the anesthesiology service soon after admission.

Every woman admitted to the birth center is evaluated by OB anesthesiology shortly after admission. Afterwards, an OB specific preanesthesia note with past medical and obstetric history, physical exam, and pertinent labs/studies, is entered into the electronic medical record. Patients are counseled about all options they have for labor analgesia and surgical anesthesia, and their questions are answered. Verbal consent to procedures is outlined in that preanesthesia note. Washington state only requires that verbal consent for anesthesia procedures is documented in the electronic medical record (EMR).

Q65

Outline the system in place to screen and identify all high-risk patients. Discuss early anesthesia evaluation of high-risk antenatal patients prior to admission for scheduled surgery or labor and delivery (e.g. high-risk anesthesia clinic).

If a patient is identified by midwives/OBs to be medically challenging, or if the patient requests early discussion with anesthesiology, arrangements are made for a CRNA or MD to see the patient in OB clinic prior to their admission. These arrangements are usually coordinated with one of their regular OB prenatal visits.

Q66

*Describe the availability of surgical backup. Surgical backup (e.g. trauma and/or gyn-onc surgeons) must be available, ideally 24/7 and in-house.

Several surgical services (for example general surgery, thoracic surgery, vascular surgery, urology, and gynecology) are on call 24/7. General surgery is in house 24/7. If a surgical service is not in house, they are expected to present ready to work within 30 minutes after a call. They can be contacted either by pager through a webpage accessible on all hospital computers, or directly through the hospital operator.

Please see Figure 10 in the Equipment, Protocols and Policies Supplement for a picture of our system wide on-call paging interface.

Q67

Outline your protocol or pathway to activate interventional radiology.

Interventional Radiology can be activated through the same Provider Contact System that we would use to call for surgical backup. Please see Figure 10.

Q68

Describe the intensive care units available to receive obstetric patients (e.g. expertise, proximity to the obstetric unit and capacity).

Intensivists are available in house 24/7, and are prepared to provide critical care for a variety of medical, surgical, neuro, cardiac, and obstetric pathologies. We also have the capability to manage ECMO. The 20+ bed critical care unit is located in the same tower as the birth center. There are four patient transport elevators to move between the two units, and a proxy card can be used to emergently call an elevator for transport between floors.

Q69

Outline the qualifications of nursing staff who provide post-anesthesia care in the obstetric unit and describe their competencies to recover surgical patients from both neuraxial and general anesthesia.

All birth center nurses are experienced in labor and delivery and have been trained in Post Anesthesia Care Unit (PACU) recovery following obstetric surgeries under regional anesthesia. Nursing care is consistent with the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) guidelines. Should a patient require general anesthesia, our policy is that the labor and delivery nurses will be supported by an additional PACU nurse from the main ORs.

Q70

*Describe your obstetric emergency response team and policy. Outline obstetric conditions and/or vital sign parameters that warrant activation, the means of notifying all members of the response team, and the approach for including anesthesiologists in the response to obstetrical emergencies such as hemorrhage, severe hypertension and non-reassuring fetal heart rate.

As long as there is a patient admitted on the unit, the birth center is staffed by an in-house, OB dedicated CRNA, and an in-house anesthesia attending. We use a Vocera® communication system, and log into a communication group called “OB STAT.” If emergent assistance is needed for any reason, for example Category 2 or higher fetal heart rate tracing, severe maternal hypertension, or “Stage 1” hemorrhage (Quantitative Blood Loss of >500 mL for a vaginal delivery or >1000 mL for a cesarean delivery), anyone can call “OB STAT” over the Vocera phone to mobilize anesthesia assistance. Our OB, midwife, and RN providers generally contact anesthesiology with patient concerns prior to emergency situations if possible.
Nurses follow a “Maternal Early Warning Trigger (MEWT) Algorithm” to guide them in quickly identifying vital signs that warrant provider notification and escalation of care. The MEWT Algorithm is based off the tool published by Shields in the American Journal of Obstetrics and Gynecology in 2016. Please see the flowchart in Figure 11 in the Equipment, Protocols and Policies Supplement.

Q71

*Outline your simulation drills and training.

Our birth center has run multidisciplinary (OB, midwives, RNs, anesthesia, emergency department (ED), pharmacy, respiratory therapy, neonatology) simulations for the following drill scenarios:

- ACLS and perimortem c-section
- Neonatal resuscitation
- Crash C-section with general anesthesia
- Peripartum hemorrhage
- Eminent delivery in the ED
- Crash C-section with general anesthesia and Malignant Hyperthermia
- Severe maternal hypetension/eclampsia
- COVID+ patient

Q72

Outline the percentage of anesthesiology faculty (who cover obstetric anesthesia call), obstetricians, nurses, and other personnel who have participated in obstetric simulation (or inter-professional team training) in the last five years. _____%

A regional nurse educator runs separate drills for nurses at least quarterly. OB Anesthesia drills are run at least quarterly if not more frequently. All providers in the birth center are invited to the OB Anesthesia drills. So far in the two years that our birth center has been open, all 14 OB CRNAs and 12 out of the 32 faculty that take call have participated in-person in multidisciplinary simulation. During the pandemic, we broadcasted a couple simulation sessions to the entire anesthesia department via Zoom. ED providers, anesthesia technicians, respiratory therapists, neonatal nurse practitioners, midwives/OBs, and the Hospital Code Blue team (pharmacists, ICU MD and RNs) have all participated in multidisciplinary simulation scenarios at some point since the opening of the birth center in Aug 2020.

Q73

Describe simulation training scenarios practices and compliance with The Joint Commission (JACHO) requirements for obstetric hemorrhage and preeclampsia simulations. (https://www.jointcommission.org/standards/r3-report/r3-report-issue-24-pc-standards-for-maternal-safety/#.YofbDHbML-g)Physicians providing obstetric anesthesia should participate in at least one simulation drill every five years. An active multidisciplinary program with obstetric and anesthetic emergency simulation drills (e.g. emergent cesarean delivery, maternal cardiac arrest, difficult/failed intubation, obstetric hemorrhage, and eclampsia) is preferable. Simulation drills for anesthesiology providers only may be acceptable, if no formal multidisciplinary program exists, or to supplement pre-existing drills.

As stated above, peripartum hemorrhage, and severe maternal hypertension/eclampsia are simulation sessions in regular rotation for our quarterly multidisciplinary team drills.

Q74

Describe your ability to provide anesthesia care for postpartum tubal ligation procedures within 24 hours of delivery, and urgent cerclage placement within 12 hours of surgical request. Outline policies/procedures to ensure postpartum tubal ligation are prioritized and performed in a timely manner as per ACOG recommendations. https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2021/06/access-to-postpartum-sterilization

We have protocols for postpartum tubal ligation and urgent cerclage placements. As urgent procedures, these procedures are triaged like any urgent procedure. Ideally they are performed by the OB anesthesia team in the birth center, but if the OB anesthesia team is busy with laboring patients and/or other urgent OB surgeries, these procedures can be accommodated in the main OR with other anesthesia call providers.

Q75

*Outline options for an additional operating room (with nursing/tech/obstetric and anesthesiology personnel) that is available at all times for emergency obstetric procedures (if all obstetric unit operating rooms are occupied).

If any of the two birth center ORs are closed for any reason or if they are both occupied, the main OR charge nurse and anesthesiologist are notified so that a backup OR and staff can be identified. A standard c-section supply cart is then brought to that room in the main OR so that it is ready for easy setup in an emergency.

Q76

Describe your ability to provide invasive monitoring and other advanced management techniques for high-risk patients on the obstetric unit, including arterial lines, central lines, cardiac output monitoring, and transthoracic/transesophageal echocardiography.

Our birth center has the capability to provide the same invasive monitoring that is available in the main ORs: arterial lines, central lines, Swan-Ganz catheterization, and transthoracic/transesophageal echocardiography. We have a Cardiac Anesthesia team that is on call 24/7 to assist with any high-risk OB patients. Since our birth center is an ACOG level 2 center, although we have the capability to care for these high-risk patients, many of them are transferred to other hospitals for higher level of care.

Q77

Outline your management of patients who need vasoactive drug infusions, intensive care or cardiac care, and/or additional monitoring requirements (e.g. monitored bed, telemetry).

If a woman urgently needs a higher level of care for vasoactive drug infusions or more intense cardiac monitoring, she could be transferred to our Critical Care Unit (CCU) or our telemetry unit. While there, she would be comanaged by a labor and delivery RN and an RN from that unit. In addition, the OBs and MDs on those units would collaborate on the patient's care.

Q78

Outline your approach to educating expectant people, patients and families.

Expectant mothers and patients are regularly counseled by their OBs and midwives regarding the birth process. If they have any questions about labor analgesia or anesthesia, OBs/midwives can refer them to an early preanesthesia clinic appointment for a personalized discussion, or refer the patient to the SOAP sponsored video on labor analgesia: (https://www.youtube.com/watch?v=XPiXHuLjVEY&feature=emb_logo)

After delivery, patients are sent home with a folder filled with patient education resources.

Q79

Outline your approach to educating nurses, obstetricians and other healthcare providers.

The year prior to the opening of the birth center on Aug 10, 2020, the Section Head for OB anesthesia organized a 6-part lecture series about the basics of OB Anesthesiology. These lectures were recorded and posted with reference materials on an internal SharePoint website dedicated to OB Anesthesia. Many different kinds of providers have attended and accessed the materials on this website, for example MDs, RNs, pharmacists, respiratory therapists, and technicians. All professionals who take care of patients in the birth center were welcome to attend the lectures and to access the materials online.

Q80

Outline your approach, if applicable, to educating obstetric anesthesia training for residents, fellows, CAAs, and/or SRNAs.

Since our birth center is still growing and has relatively low patient volumes, our residents have continued their OB Anesthesia education at the nearby level 3 birth center. We hope to include them in the care team once patient volumes increase. We do not train OB anesthesia fellows, CAAs, or SRNAs.

Q81

*Outline the initiatives that you have done at your institution to better meet the needs of patients from the most prevalent racial and ethnic minority group(s) that your facility serves (e.g. implicit bias training of healthcare providers; provision of health educational resources for non-English speakers). Describe efforts to promote diversity, equity and inclusion of your workforce (e.g. support pipeline programs for groups underrepresented in medicine; diversity, equity and inclusion hiring/promotion practices; microaggression and bystander response training; mentorship/sponsorship of individuals from groups underrepresented in medicine and female trainees and faculty).

In August 2020 Virginia Mason was designated an LGBTQ Health Care Equality Leader for the fourth year by the Human Rights Campaign (HRC) Foundation. Our hospital requires that all employees are trained regularly with “Respect for People” workshops. Please see Figure 12 in the Equipment, Protocols and Policies Supplement for an image with all of the milestones we have completed to better meet the needs of patients from all backgrounds.

Page 7: Cesarean Delivery Management

Q82

*Outline, describe, and provide your enhanced recovery protocol as defined by the SOAP Enhanced Recovery After Cesarean (ERAC) Consensus Statement (3). A standardized enhanced recovery protocol or clinical care pathway that is utilized by the institution and all obstetric anesthesia providers is an essential element.

Please see Figure 1 in the Cesarean Delivery Management Supplement for a copy of our ERAC protocol. Our Standard Work for elective cesarean sections was designed with the SOAP ERAC Consensus Statement in mind, and thus it follows many of the suggested elements. For example:

- Patients receive education throughout antepartum, intraoperative, and postoperative stay. The neonatal nurse helps to facilitate early lactation in the OR, and throughout postoperative stay. All patients receive a discharge teaching booklet
- All women are screened for anemia early in pregnancy and receive iron therapy as needed.
- Spinal anesthesia induced hypotension is actively managed by coloading of warmed crystalloid during the procedure, and initiation of a phenylephrine infusion immediately after the spinal dose is administered
- Normothermia is maintained with warmed IV fluids and an underbody forced air warmer.
- A low dose oxytocin infusion is initiated after delivery of the baby at 0.25 IU*min-1.
- Appropriate antibiotics are administered prior to skin incision.
- Intraoperative and postoperative nausea are prevented by early treatment of hypotension, routine avoidance of uterine externalization, and at least two prophylactic antiemetics.
- Multimodal analgesia is practiced
- 45 seconds of delayed cord clamping is addressed at the preoperative time out and practiced whenever appropriate
- Early oral intake (for example ice chips in PACU) and early mobilization are encouraged
- Urinary catheters are assessed for removal early on postoperative day 0 (POD0)
- Venous Thromboembolism (VTE) prophylaxis according to ACOG guidelines is ordered with every admission
- A CBC is checked on POD1 to screen for anemia, and patients are treated as needed
- There is a standardized discharge planning process, and patients are discharged as soon as medically feasible. The “law of two days” is observed whenever possible.

Q83

*Outline your routine utilization of a pencil-point needle, 25-gauge (or smaller) for the provision of spinal and CSE anesthesia for cesarean delivery.

Our standard spinal tray has a 25-gauge Sprotte® needle, and our standard CSE tray has a 26-gauge Gertie Marx® needle.

Q84

*Describe your approach and outline policies and/or protocols to prevent and/or treat insufficient anesthesia or intraoperative pain during cesarean delivery. Outline how neuraxial block are tested prior to incision and strategies/protocols used to ensure blocks are adequate for surgery. Outline strategies/protocols to treat intraoperative pain, and describe the follow-up for patients that experience intraoperative pain.

Our cornerstones to preventing intraoperative pain during cesarean delivery are to 1) use an evidence based standard process to initiate neuraxial anesthesia, and 2) assuring with multiple tests that neuraxial anesthesia is adequate prior to incision.

Optimization of anesthesia technique:
- If a spinal is used, we always use 12mg of 0.75% hyperbaric bupivacaine + 10 mcg fentanyl + 100 mcg of Duramorph. This dose strategy was shown in the literature to approach the ED95 for bupivacaine (Cravalho, 2005) while minimizing side effects.
- We routinely aspirate our spinal needles to assure flow of CSF prior to administration of medication
- If a labor epidural is used for cesarean delivery we complete many evidence based measures to assure efficacy:
  - We perform CSEs for our standard labor epidural
  - We round on patients every 2-4 hours to assure that the epidural is working
  - We replace epidurals that aren't working before they are urgently needed for cesarean
  - We use a standard epidural preparation of 2% lidocaine, 1:200,000 epinephrine, and 1-2mL of bicarbonate to activate the epidural. We give this in 5mL aliquots while quantitatively making sure that we are achieving a rising dermatomal distribution of anesthesia to pinprick. If 10 mL of this epidural medication is given without adequate dermatomal distribution of anesthesia, the catheter is removed and a reduced dose spinal is performed.

Multiple tests before incision:
- We test for a dermatomal level of anesthesia to pinprick to T4 prior to abdominal antiseptic preparation. If possible, we postpone cleaning the abdomen until that level is achieved, and we will manipulate neuraxial anesthesia as needed to achieve it.
- OBs and OB anesthesiologists participate in an Allis test prior to incision to assure adequate dermatomal anesthesia

If after all this the patient still has intraoperative pain, we remind the surgeons to do their best to keep the uterus internalized (this is standard protocol), and we have a discussion with the patient to diagnose the cause of the pain, and to discuss treatment options, risks and benefits. If anxiety is contributing, we do our best to reassure the patient verbally. Low dose anxiolysis (1mg midazolam, 10mg propofol) can be given if verbal reassurance is not enough. We warn the patients about risks of these medications prior to administration. Other adjuncts such as IV low dose fentanyl or ketamine, or intraperitoneal 3% chloroprocaine lavage are available.

Q85

*Outline your post-cesarean delivery analgesic protocol. Analgesic protocols should include low dose long-acting neuraxial opioid (such as 100-150 mcg intrathecal morphine or equivalent long-acting opioid, or 2-3 mg epidural morphine or equivalent long-acting opioid), and supplemental multimodal analgesics (ideally scheduled non-steroidal anti-inflammatory drugs and acetaminophen).

Multimodal analgesia is practiced:
- 975mg of PO acetaminophen is received either preoperatively or early postoperatively and is scheduled for every 6 hours throughout the patient's stay. 1g of IV acetaminophen is used if needed.
- 100 mcg of intrathecal morphine or (3 mg of epidural morphine if labor epidural is in situ) is administered intraoperatively
- 15mg of IV ketorolac is administered at the end of surgery and is scheduled every 8 hours for the first 24 hours. After that, 600mg of PO ibuprofen is scheduled for the rest of the postoperative stay
- Every woman is counseled and consented at admission for bilateral TAP blocks if an emergent c-section is required.

Q86

Describe your ability to provide local anesthetic wound infusions or regional nerve/fascial plane blocks when appropriate. Are regional blocks performed by obstetric anesthesia providers or the acute pain/regional anesthesia service?

TAP blocks are performed by obstetric anesthesia providers whenever a long acting neuraxial opioid cannot be administered.

Q87

*Outline institutional efforts to minimize opioid usage, such as limiting rescue opioid doses (e.g. <30 mg oxycodone/24 hours), non-opioid rescue analgesic options (e.g. transversus abdominis plane blocks, gabapentin), and efforts to limit the number of opioid tablets (e.g. 10-20 tablets) prescribed on discharge.

Multimodal analgesia options are exhausted before a patient is offered an opioid for pain control. Our standard postoperative pain electronic order set is designed to limit opioid usage. Please see screenshot of standard opioid orderset in Figure 2 of the Cesarean Delivery Management Supplement for reference. The chainlink icon next to the order prevents other opioids from being ordered once a primary opioid is chosen. Very specific guardrails are outlined prior to being allowed to administer a “Rescue dose,” and early notification of the MD is encouraged.

No more than 20 tablets of opioids are prescribed upon discharge.

Q88

Describe your standardized protocol or plan of action to manage patients with opioid use disorders, and/or chronic pain.

Obstetric anesthesia providers work closely with OB and midwife providers to consult on patients with opiate use disorders (OUD) and chronic pain. We often see these patients for early preanesthesia visits in clinic to discuss a pain management plan, and we round on them postoperatively to provide continued guidance. Our anesthesia department has an Acute Pain Service on call 24/7 with attending physicians who are trained in OUD, chronic pain, and trained to prescribe Suboxone under the DATA 2000 waiver program.

Q89

*Outline strategies to prevent maternal and fetal intraoperative hypothermia, e.g. active warming, warm intravenous fluids, appropriate ambient delivery/operating room temperature. Active warming and a standardized minimum operating room temperature of at least ≥73oF (22.8oC), and/or operating room temperature based on gestational age for cesarean delivery is recommended.

IV fluids are kept in a warmer prior to use and discarded after 14 days in the warmer. Standard OR bed set ups include an under-body forced air warmer (Mistral-Air®). In-line Ranger® IV fluid warmers are standard in all ORs. Women and babies are provided warmed blankets at baseline and on request.

Q90

Describe your approach to the measurement of maternal temperature during general and neuraxial anesthesia.

Axillary skin temperature probes are used after neuraxial anesthesia, and intranasal temperature probes are used during general anesthesia.

Q91

*Describe your antibiotic prophylaxis protocols, specifically how the following are ensured: timely administration (prior to skin incision) of appropriate antibiotic(s); implementation of a weight-based dosing approach; implementation of an appropriate re-dosing strategy; identification of alternatives if allergies known/detected; and consideration of additional antibiotics for high-risk patients.

ACOG antibiotic prophylaxis protocol is followed: Cefazolin (first generation cephalosporin) is the standard pre-incision antibiotic ordered for our c-sections. Timely administration is addressed at our pre-incision time-out. If alternative antibiotics are needed due to allergy (for example clindamycin and an aminoglycoside) or clinical needs (azithromycin for non-elective cesarean), this is also addressed at the pre-incision time-out. Weight based antibiotic dosing is addressed in our Elective Cesarean Standard Work document (please see Figure 1 in the Cesarean Delivery Management Supplement). There is a program running in the background for all anesthesia electronic surgical records called Smart Anesthesia Manager (SAM). SAM reminds us with a pop-up message prior to when antibiotics are due to be redosed. With the initiation of SAM in the main ORs before our birth center opened, our compliance with prompt antibiotic redosing has significantly improved.

Q92

Outline which antibiotics are stored in the operating room for emergency cesarean deliveries, and describe how additional antibiotics are acquired urgently from pharmacy.

1g vials of powdered Cefazolin are stored in the top drawer of our anesthesia carts for use in emergency cesarean deliveries. They are also stored in the controlled Rx station in the substerile core between the ORs. If additional antibiotics are needed, we can call the inpatient or OR pharmacy 24/7 to have them pneumatically tubed urgently up to our location.

Q93

*Outline your standardized approach to prevent and treat hypotension after spinal anesthesia. Ideally, prophylactic infusion of phenylephrine to maintain blood pressure within 10% of baseline, with boluses of phenylephrine and ephedrine as appropriate to treat hypotension, as well as intravenous fluid pre-load or co-load during spinal or CSE anesthesia should be utilized.

1L of warmed IV Lactated Ringers are hung wide open for co-loading of fluids during neuraxial anesthesia placement. Immediately after the spinal medication is administered, a pre-programmed infusion of phenylephrine at 0.5 mcg/kg/min is started and titrated to maintain blood pressure close to baseline. Prefilled syringes of phenylephrine and ephedrine are also available to bolus if hypotension persists despite the phenylephrine infusion. Atropine and epinephrine vials are available in all standard anesthesia drug trays, and norepinephrine infusions are available in the computerized medicine (Rx) station.

Q94

Describe your approach to risk stratify patients at risk for perioperative nausea and vomiting.

We routinely assess patient risk factors for PONV according to the 2020 Fourth Consensus Guidelines for the Management of PONV. Our Smart Anesthesia Management (SAM) software also provides a dashboard that mines data from the patient’s entire electronic medical record to determine the number of risk factors a patient has for PONV. SAM also provides a guide to match PONV prophylaxis measures with a patient’s risk factors. Please see a screenshot example of our SAM PONV dashboard in Figure 3 of the Cesarean Delivery Management Supplement.

Q95

*Outline your perioperative antiemetic prophylaxis and treatment protocol. A standardized approach ideally involving at least one prophylactic antiemetic agent routinely administered, with an alternative class of antiemetic agent available for additional prophylaxis (in patients at higher risk for PONV) and for treatment of nausea and vomiting.

Nausea and vomiting prophylaxis is addressed in the Standard Work document for Elective cesarean sections, and it follows the 2021 SOAP Consensus Statement and Recommendations for ERAC. The approach starts with aggressive blood pressure management with co-loading of fluids, and early initiation of a phenylephrine infusion after neuraxial anesthesia. It also calls for administration of two different prophylactic antiemetic measures. Dexamethasone and ondansetron are both readily available in our standard anesthesia drug trays. Our OBs generally avoid exteriorization of the uterus when possible.

Q96

Outline which medications are immediately available for treatment of intraoperative shivering and pruritus in the operating room and recovery unit.

Nalbuphine and benadryl are available for perioperative pruritis, and meperidine is available for perioperative shivering.

Q97

Describe your approach to risk stratification to identify patients at increased risk for respiratory depression, and screening for obstructive sleep apnea.

Patients are screened for all comorbidities with the preanesthesia assessment at admission. Additionally, our standard PACU orderset has an “OSA Inpatient/Outpatient Triage Algorithm” built in.

Q98

*Describe your monitoring and treatment for respiratory depression after cesarean delivery. Your protocol should be consistent with the SOAP Consensus Recommendations for the Prevention and Detection of Respiratory Depression Associated with Neuraxial Morphine Administration for Cesarean Delivery Analgesia for the Prevention, Detection and Management of Respiratory Depression Associated with Neuraxial Opioids (4, 5).

Every woman who receives neuraxial morphine is checked for respiratory depression postoperatively. Consistent with ASRA guidelines, respiratory rate, depth of breaths, and a point of care SpO2 are measured every hour for the first 12 hours after neuraxial morphine, and every two hours for the second 12 hours after neuraxial morphine. Naloxone, and respiratory support measures can be instituted if respiratory depression is diagnosed. Although the 2019 SOAP Consensus Recommendations state that low risk patients receiving low dose neuraxial morphine (we use 100 mcg intrathecal or 3mg epidural morphine) can be monitored less frequently, the nurses were more comfortable with the more conservative ASRA guidelines.

Q99

Outline your nursing care and monitoring. Your nursing care should be consistent with the Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN) and ASA recommendations.

Nursing care is consistent with AWHONN guidelines. Per the nursing protocol regular adult vital signs include blood pressure (BP), mean arterial pressure (MAP), heart rate (HR), oxygen saturation (O2), respiratory rate (RR), temperature (temp), and pain. Fundus and vaginal flow assessment are to be included after delivery. Vital signs are measured every 15 minutes X 2 hours, then every hour X 4 hours, every 4 hours X 24 hours.

Q100

Describe how your anesthesiology service is supportive of baby-friendly breastfeeding practices (e.g. ability to safely facilitate skin-to-skin in the operating room or recovery unit, when possible).

It is in our Standard Work to facilitate early skin-to-skin and early breastfeeding in the OR during cesarean sections. Our hospital is breastfeeding friendly, and our anesthesiologists and neonatal nurses encourage maternal-neonatal bonding as soon as the baby is deemed to be stable.

Q101

Outline how an in-house (24/7) clinician (separate from the anesthesiology service) with appropriate training to provide neonatal resuscitation is available.

Our OB CRNAs and physician anesthesiologists who cover OB are required to maintain Neonatal Resuscitation Program (NRP) certification. This is automatically tracked, and once certification is nearing expiration we are automatically reminded by email to renew. Additionally, representatives from the ED, respiratory therapy, labor and delivery nurses, and pharmacy also maintain NRP certification. Starting Oct 1, 2022 we have a contract with Seattle Children's to provide in-house neonatal nurse practitioner support so long as a patient and/or neonate is admitted.

Page 8: Labor Analgesia

Q102

*Outline your routine utilization of a pencil-point needle, 25-gauge (or smaller) for the provision of CSE or DPE labor analgesia.

We utilize a 26-guage Gertie Marx® pencil point needle for combined spinal epidural (CSE) and dural puncture labor analgesia. These come in prepackaged spinal-epidural catheterization kits. For spinal anesthesia we utilize a 25-guage Sprotte® pencil point needle.

Q103

Describe your use of low concentration local anesthetic solutions (ideally ≤0.1% bupivacaine or ≤0.15% ropivacaine).

Our standard local anesthetic solution for labor analgesia is 0.625% bupivacaine with 2mcg/mL fentanyl.

Q104

Outline your use of neuraxial opioids (e.g. fentanyl or sufentanil) and/or other adjuvants (e.g. clonidine) added to epidural local anesthetic solutions.

Our standard local anesthetic solution for labor analgesia contains 2 mcg/mL of fentanyl. Standard labor analgesia is to perform a CSE with 10 mcg of fentanyl in the spinal dose. For breakthrough pain, we bolus an additional 50mcg fentanyl through the catheter with added local anesthetic if there is evidence of a working epidural catheter. Clonidine is used very rarely as an epidural adjunct for refractory pain with a working epidural. Extra attention is paid to hypotension.

Q105

Describe how standardized epidural solutions are provided and used by all providers. Ideally, pharmacy-provided pre-mixed epidural solutions.

Our standard epidural infusate bags are pre-mixed by the inpatient pharmacy and are immediately available on the labor and delivery floor in a refrigerated, secured medication dispensing system. If non-standard solutions are requested, for example opioid free solutions, they are prepared by the inpatient pharmacy, labelled specifically for the patient, and delivered by the pharmacy team via the pneumatic tube system directly to the anesthesiology staff.

Q106

Outline if and which alternative neuraxial techniques are offered in addition to standard labor epidural analgesia (e.g., CSE, DPE, single-shot spinal).

Our standard work for initiation of labor analgesia is a combined spinal-epidural catheter technique using 2.5mg of isobaric bupivacaine and 10mcg of fentanyl in the spinal dose. If there is a medical indication, as assessed by the attending physician anesthesiologist, a standard labor epidural, dural puncture epidural, or sequential spinal/epidural can also be performed.

Q107

Please provide an estimated percentage breakdown of the utilization of these techniques, with the total equaling 100%. Do not include the percentage sign in your answers. Please answer in decimal format.

Standard epidural	**1.0**
CSE	**97.0**
DPE	**1.0**
Other (describe)	**1.0**

Q108

Outline your labor epidural maintenance techniques. Patient-controlled epidural analgesia (PCEA) and ideally background programmed intermittent epidural boluses (PIEB) should be utilized for provision of neuraxial labor analgesia.

For maintenance of standard labor analgesia we utilize a programmed intermittent bolus (PIEB) of 10mL every 45 minutes with the first bolus delayed 30 minutes after spinal dose administration. Our standard pumps perform PIEB in conjunction with patient controlled epidural analgesia (PCEA) with a dose of 5 mL every 10 minutes.

Q109

*Describe your routine utilization of flexible (flex-tipped/wire-reinforced) epidural catheters for labor epidural analgesia.

Our epidural catheter is a 19-guage soft, flexible tip, coil reinforced, single orifice, open tip epidural catheter.

Q110

*Outline how you provide regular assessment of neuraxial labor analgesia effectiveness. Ideally, pain scores documented by nursing staff (e.g. every 1-2 hours) supplemented with regular anesthesia provider rounds or evaluations (e.g. every 2-4 hours).

Numerical rating scale (NRS) pain scores are documented by the nursing staff every two hours. Assessment of sedation level and motor strength are documented by them as well every hour for the first twelve hours, then every 2 hours for the next 12 hours, and then every 4 hours thereafter. Any changes are reported to the anesthesiology team for additional assessment. Regular assessments by the anesthesiology team for quality of analgesia and side effects in addition to those by nursing staff are expected at least every 4 hours.

Q111

Describe your protocol for managing epidural breakthrough pain. Describe your system used to track labor epidural replacement rates.

Epidurals are formally evaluated with a patient discussion and quantitative dermatomal numbness evaluation by the obstetric anesthesiology team frequently. Checks are performed immediately after and 1hr after placement, and then at least every 4 hours after that. If there is any concern for inadequacy of labor analgesia, we follow an algorithm to manipulate the catheter to improve analgesia. Please see Figure 2 in the Labor Analgesia Supplement for a picture of our algorithm.

In summary, if a patient complains of breakthrough pain, first an anesthesia provider reports to the bedside to have a discussion with the patient, perform a physical exam, and troubleshoot what is going on. The epidural catheter will be examined at this point, and if it has migrated in, it can be pulled out as appropriate. If deemed reasonable, the epidural catheter can be topped up with more concentrated local anesthetic (usually 0.125% bupivacaine +/- fentanyl). If medication is given, reevaluation and formal physical exam will be repeated about 20-30 minutes later. If analgesia and dermatomal spread improves, routine rounding on that patient will resume. If there is no improvement of pain control and no evidence of improved dermatomal analgesic distribution at a reasonable time point after epidural medication is administered, the epidural will be replaced. If the epidural catheter is replaced, a new epidural procedure note is written that includes final reason for replacement, and a summary of the assessment and discussion with patient.

Before the anesthetic record is closed, a quality review report for that anesthetic identifying any obstetric anesthesia specific concerns including replacement must be completed. Please see Figure 1 in the Quality Assurance Review Process Supplement for a picture of our quality assurance tracking software. This quality assessment software compiles all the reported events in a dashboard for the section head of OB anesthesia to periodically review.

Q112

Describe your ongoing monitoring (e.g. blood pressure, assessment of motor/sensory levels) and protocols to manage potential side effects or complications associated with neuraxial analgesia.

Epidurals are monitored with continuous pulse oximetry and with blood pressure, maternal heart rate, and respiratory rate at 5 minute intervals for the first 30 minutes, then every 15 minutes for the next hour, and then every 30 minutes thereafter. Sedation and motor strength are monitored every hour for the first twelve hours, then every 2 hours for the next 12 hours, and then every 4 hours thereafter. Nursing staff have a standing order to administer ephedrine 5mg as needed every 2 minutes to manage hypotension but must call OB anesthesiology to evaluate. The nursing orders also include orders for an antiemetic (ondansetron) and antipruritic (diphenhydramine) as needed.

Q113

Outline your nursing postpartum monitoring protocol that is consistent with AWHONN recommendations.

Patients are monitored postpartum according to AWHONN recommendations. Vital signs including blood pressure, oxygen saturation, and respiratory rate monitored every 15 minutes until discharge from labor and delivery, which is at least 2 hours after delivery. Temperature and pain are documented once during this period. In the postpartum area, patients have vitals recorded every 4 hours for two checks, and then every 8 hours.

Q114

Describe intravenous patient-controlled opioid analgesia options offered, and outline protocol specifics including opioids available, administration settings and monitoring requirements. Outline the availability of nitrous oxide for labor analgesia, and if available provide protocol specifics.

We offer remifentanil patient-controlled analgesia for patients with contraindications to neuraxial anesthesia. The bolus is weight-based, with no continuous infusion or loading dose, and a lockout for 2 minutes. Initial bolus dose varies from 15mcg to 35mcg. The first 30 minutes after initiation require 1:1 monitoring by an anesthesia provider. Further changes in dosing can only be done by the anesthesiologist and require another 30-minute period of 1:1 anesthesia monitoring. After this period, the patient has constant 1:1 nursing and cannot be left unattended. The patient must have continuous pulse oximetry and end tidal carbon dioxide monitoring with a minimum of 2L supplemental oxygen via nasal cannula. Additionally, all other vitals including sedation level, blood pressure, heart rate, respiratory rate, and pain are assessed every 15 minutes.

We also have individual nitrous oxide systems for labor analgesia available in all labor and delivery rooms. Our “Nitrous oxide for Analgesia in the Perinatal Patient” Protocol is included in Figure 1 of the Labor Analgesia Supplement.

Page 9: Recommendations and Guidelines Implementation

Q115

*At a minimum, provide evidence of implementation of the Practice Guidelines for Obstetric Anesthesia by the ASA Task Force on Obstetric Anesthesia and SOAP (6). Select key recommendations not otherwise addressed in other areas of this application: o Platelet count prior to neuraxial block placement: No requirement for routine testing in healthy patientso Appropriate liquid and diet restrictions: Intrapartum (allow clear liquids in uncomplicated patients); cesarean delivery (clear liquids up to 2 hours prior)o Timing of neuraxial analgesia: Allow neuraxial analgesia in early labor (no specific cervical dilation required)

There is no requirement for platelet count in healthy women before neuraxial anesthesia. Platelet count may be requested in women with certain comorbidities or developing obstetrical concerns such as HELLP or preeclampsia/eclampsia.

Currently, moderate amounts of clear liquids but no solid foods are allowed after epidural placement in healthy intrapartum patients. If clinically indicated, such as in concerns about emergent operative delivery, difficult airway, or aspiration, further restrictions can be requested. Similarly, if a patient requests a very early epidural, temporary liberalization of diet can be evaluated on a case by case basis. Patients can have clear liquids up to two hours prior to cesarean delivery.

Our unit has no limits on timing of neuraxial analgesia and no specific cervical dilation is needed. We provide labor analgesia in early and late labor as requested by the patient.

Q116

Outline evidence of implementation of the SOAP Consensus Statement on the Management of Cardiac Arrest in Pregnancy (7).

Our unit has visual aids copied from the 2014 SOAP Consensus Statement on the Management of Cardiac Arrest in Pregnancy posted near the resuscitation cart and in the operating rooms next to the ventilators. All staff on labor and delivery must review this protocol with copies available in our Anesthesia Emergency Manual. We have also conducted multidisciplinary simulations of a maternal code multiple times to confirm our ability to perform adequate chest compression with a second operator performing bimanual uterine displacement, and perimortem cesarean delivery of the fetus within 5 minutes. For maternal cardiac arrests related to LAST, lipid emulsion is in all neuraxial procedure carts.

Q117

National Partnership Maternal Safety Bundles (8): Confirm that aspects of the following Maternal Safety Bundles have been implemented. For each enter a Yes or a No.

Obstetric Hemorrhage	**Yes**
Severe Hypertension in Pregnancy	**Yes**
Maternal Venous Thromboembolism	**Yes**
Cardiac Conditions in Obstetrical Care	**Yes**
Care for Pregnant and Postpartum People with Substance Use Disorder	**Yes**

Q118

Provide examples of implementation of key aspects of National Partnership Maternal Safety Bundles; outline at least one example of an item that has been implemented to address each domain (Readiness, Recognition and Prevention, Response, and Reporting and System Learning) for the following:

Obstetric Hemorrhage	**Readiness: We have an MTP and two hemorrhage carts; Recognition and Prevention: QBL is calcuated for every delivery; Response: We have a staged OB hemorrhage protocol; Reporting: We have a PSA and QI system**
Severe Hypertension in Pregnancy	**Readiness: staff have regular education; Recognition and Prevention: we have an OB HTN management protocol; Response: timely treatment within 30 min is tracked; Reporting: deviation from protocol is reported in PSA and QI system**

Q119

Outline your approach to coordinate care for patients receiving ante- and postpartum thromboprophylaxis as outlined by the SOAP Consensus Statement on Neuraxial Anesthesia in Obstetric Patients Receiving Thromboprophylaxis (9). Describe a process by which obstetric anesthesia providers are informed about patients receiving thromboprophylaxis.

Patients requiring any amount of peripartum anticoagulation are identified by the obstetric providers (obstetricians and midwives). They are scheduled for antepartum consultation with anesthesiology to discuss concerns and develop a plan for management. A full consult note with a plan for thromboprophylaxis in concordance with the 2018 SOAP consensus statement is documented in the patient's chart and sent to all obstetric anesthesia and all obstetric providers. Once scheduled for a procedure including induction of labor, cesarean section, or external cephalic version, the patient's plan is directed again to the providers on service that day.

Q120

Outline your implementation of recommendations from SOAP Interdisciplinary Consensus Statement on Neuraxial Procedures in Obstetric Patients with Thrombocytopenia.

Our management of obstetric patients with thrombocytopenia is in line with the 2021 SOAP Consensus Statement. To summarize our management:

- Our obstetricians (OBs) and midwives are keenly interested in reducing risks of postpartum hemorrhage, so any history of easy bruising or bleeding, and/or thrombocytopenia is routinely evaluated in their standard review of systems early in pregnancy.
- If a woman is found to have a history of easy bruising or bleeding and/or thrombocytopenia, the OBs proceed to request early preanesthesia evaluation, and likely hematology evaluation. Obstetric, anesthesia, hematology, and lab management teams have a good working relationship since we meet regularly at birth center quality meetings. After independent evaluation by these respective teams, a care management plan is formulated. It will also be determined if that woman should be transferred to a higher level of care.
- A copy of the decision flow chart figure on page 9 in the Consensus Statement is included in our two OB Anesthesia Standard Work binders for quick reference, and the complete article is posted on our OB Anesthesia SharePoint website for more detailed review.
- Preanesthesia assessment is performed on every patient who is admitted to labor and delivery soon after admission regardless of their desire for anesthesia care. Thus, even if a patient had no prenatal care to identify thrombocytopenia or increased bleeding risks, diagnosis can be caught at this point and appropriate hematology consultation requested.
- If a patient is found to have signs/symptoms to warrant avoiding neuraxial anesthesia, they are counseled about alternative options (nitrous oxide, remifentanil patient-controlled analgesia (PCA), and general anesthesia) during the preanesthesia assessment.
- If HELLP syndrome is suspected, a platelet count must have been performed within 6 hours before neuraxial anesthesia procedure.
- If platelet counts fall within the indeterminant range of 50,000 to 70,000 x 10^6/L, shared risk assessment and decision making is performed with the patient, OBs, OB CRNA, and OB physician anesthesiologist.

Page 10: Quality Assurance and Patient Follow-up

Q121

*Describe how an anesthesiologist serves as a member of the team that develops and implements multidisciplinary clinical policies, e.g. quality improvement committee, patient safety committee. Outline current quality assurance and other patient care initiatives that the obstetric anesthesia division is leading, and/or involved in.

Dr. Sheena Hembrador, the Section Head of OB Anesthesia, was very involved in the writing and review of several general OB protocols and electronic medical record order sets in the process of opening of the new birth center. She participated in weekly meetings with hospital executive management, nursing, OB/midwifery, facilities, pharmacy, ED, critical care, and multiple other clinical teams in the year leading up to the opening of the birth center. She continues to participate in the bimonthly multidisciplinary quality improvement and patient safety committees, and monthly pharmacy collaborative committees. She is actively involved in a maternal hypertension management initiative that will assure that all anesthesia team members are regularly educated in the hospital protocol for management of severe maternal hypertension.
Outside of Virginia Mason, Dr. Hembrador is also on the management committee for the Obstetrical Care Outcomes Assessment Program (OBCOAP), (https://www.qualityhealth.org/obcoap/).

Q122

Outline involvement of obstetric anesthesia staff in hospital committees. Describe committees (e.g. peer review, blood management) that the obstetric anesthesia staff are involved in, and their role in these committees.

Dr. Hembrador was involved as a consultant in most committees formed in the opening of the birth center. She reviewed and/or helped cowrite protocols including but not limited to blood management, massive transfusion, neonatal resuscitation, management of morbidly obese parturients, management of hypertensive disorders of pregnancy, management of patients with COVID-19, and numerous labor and delivery nursing protocols. She worked with supply chain to build emergency carts for hemorrhage and neonatal resuscitation, and she helped modify standard anesthesia operating room carts and block carts for obstetric anesthesia. She worked with pharmacy to develop the drug list and standard dosing for obstetric anesthesia procedures. She is still active on the anesthesia-pharmacy collaborative committee, and meets with them monthly. She was very active in multidisciplinary education with the opening of the birth center, and is still active working with the simulation team in the Jones Learning Center. With the opening of the birth center, she facilitated the NRP certification of providers across all hospital departments, and she directed two weeks of multidisciplinary simulation leading up to the opening of the unit.

Dr. Kalariya joined the Virginia Mason anesthesia team after the opening of the birth center. Now that the birth center is open, Dr. Kalariya and Dr. Hembrador both serve on the quality assurance committee for the birth center and attend monthly meetings. They also both serve on the Women’s and Children’s Quality Subcommittee for the Common Spirit group of hospitals in the Puget Sound region.

Q123

*Describe how patients receive follow-up with structured interview/consultation who received either labor neuraxial analgesia, cesarean anesthesia, or anesthesia for other procedures (e.g. postpartum tubal ligation, cerclage). Patients should be reviewed, or protocol criteria fulfilled prior to discharge or transfer from labor and delivery. All patients who received an anesthetic procedure should be reviewed by the anesthesia service on the postpartum floor prior to hospital discharge.

All women who receive any anesthesia care, be it labor epidural or surgical anesthesia, are visited by an OB anesthesia provider within 72 hours after their anesthetic in compliance with Centers for Medicare and Medicaid Services (CMS) rules. They are assessed for any side effects of anesthesia, adequacy of pain control, that any regional anesthesia has appropriately worn off, and for their general satisfaction with anesthesia. A standardized post-anesthesia note is written after that visit.

Q124

Outline your system to follow-up on all patients with anesthesia-related complications.

Anesthesia-related complications can be reported in either of two systems: 1) The hospital-wide Patient Safety Alert (PSA) system (Figure 4 in the Equipment, Protocols and Policies Supplement), which generates an email alert to the Section Head of OB Anesthesia for follow up, and/or 2) The internal Anesthesia Quality Improvement tool (please see Figure 1 in the Quality Assurance Review Process Supplement), which also generates an email alert to the Section Head of OB Anesthesia and compiles all cumulative alerts in an online dashboard. The Section Head can either personally make sure that patients are followed up on after any anesthesia-related complications, or she/he can make sure the team involved in that patient's care follows up.

Q125

*Describe your system to evaluate and treat (with an EBP, if necessary) a PDPH in a timely fashion. Are EBPs generally performed early (within 12-48 hours) or delayed? Who performs the EBP and which location(s) are EBPs performed in prior to and after discharge? Optimally, outpatient PDPH should be evaluated and treated on the obstetric unit and not in the emergency department.

If accidental dural puncture (ADP) is suspected, that team responsible will follow up with that patient and evaluate closely for PDPH postpartum, or sign out to the oncoming team to watch closely. They will distribute to that patient a flier we created (Please see Figure 2 in the Quality Assurance Review Process Supplement) to counsel patients on PDPH so that these patients know to present straight to L&D to receive treatment. For PDPH that do not resolve with conservative treatment, epidural blood patch will be offered by the OB Anesthesia team as soon as is feasible.

Q126

Outline if the anesthesiologist is an active participant in multidisciplinary root cause analysis, maternal case conferences, or equivalent program to evaluate maternal and/or fetal adverse events. Provide examples of effective implementation of identified system solutions.

The anesthesiologist is an active participant in multidisciplinary root cause analysis for maternal and/or fetal adverse events. After any complex or emergency case the anesthesiology team is always involved in a postprocedural huddle to determine where the system could be improved. Also, cases like these are discussed at the monthly multidisciplinary quality assurance committee meetings.

One example of a problem and identified solution: The lead OB noticed four patients who complained of refractory pain after c-section in a one-month period. He sent the medical record numbers for these patients to the Section Head for OB Anesthesia, and she looked carefully into each patient's records to determine the cause of the refractory pain. One thing that was noticed was that although ERAC postop pain management is outlined in the Standard Work document, there was some variability in how it was ultimately ordered by providers. Some people ordered 650 mg of acetaminophen while others ordered 1000 mg. Some people ordered ketorolac for the first 24 hours postop while others ordered ibuprofen. To eliminate any variability, a standard electronic order set was created and distributed to all anesthesia providers on OB. Additionally, the OB Anesthesia team was asked to evaluate for pain more carefully in post-anesthesia visits, and that we offer ourselves as pain consultants to OBs or midwives more readily. Postoperative pain reviews are ongoing.

Q127

Describe your approach to routinely collecting patient feedback on maternal experience of care, with a specific focus on anesthetic and analgesic care.

Feedback on anesthesia is collected at both the postanesthesia in-person evaluation, and through a paper survey that is mailed to all patients several weeks postpartum.

Page 11: Supplemental Documentation

Q128 **Respondent skipped this question**

Please upload supplemental documentation #1.

Q129 **Respondent skipped this question**

Please upload supplemental documentation #2.

Q130 **Respondent skipped this question**

Please upload supplemental documentation #3.

Q131 **Respondent skipped this question**

Please upload supplemental documentation #4.

Q132 **Respondent skipped this question**

Please upload supplemental documentation #5.

Q133 **Respondent skipped this question**

Please upload supplemental documentation #6.

Q134 **Respondent skipped this question**

Please upload supplemental documentation #7.

Q135 **Respondent skipped this question**

Please upload supplemental documentation #8.