COMPLETE

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Page 2: General InformationDirector of Obstetric Anesthesia

Q1

Name of the Director of Obstetric Anesthesia

First	**Marina**
Last	**Cestari de Rizzo**

Q2

Credential/Degree

MD

Q3

Email address

rizzo.marina@uol.com.br

Q4

Institution SiteThis application is for a single physical site, a single labor and delivery and its supporting units, not a hospital system.

Labor and Delivery Award and Surgical Award - Hospital e Maternidade Santa Maria

Q5

Name of Anesthesia Group if applicable

Not Applicable

Q6

Institution - Site Address

Street	**Rua Dr. Leôncio de Carvalho 233**
City	**São Paulo**
State	**São Paulo**
Zip Code	**04003-010**
Country	**Brazil**

Page 3: Application and Institution Details

Q7

Please mark the application designation that is applicable to you

Previously applied without success

Q8

Describe the institution type for which this application is submitted (key question that will inform the review process for all questions flagged with an *)Tertiary/Referral Center (transfers “in” for specialty maternal care)

No

Q9

Mark all that apply to your institution*

None

Q10

What level of maternal care does the applying institution/site provide according to the American College of Obstetricians and Gynecologists (ACOG) level of maternal care (Level 1, 2, 3, or 4)? (https://www.acog.org/clinical/clinicalguidance/obstetric-care-consensus/articles/2019/08/levels-of-maternal-care)

Level 3

Q11

How many annual deliveries?

3900

Q12

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

79.0

Q13

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

4

Q14

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

5

Page 4: General Anesthesia Rates

Q15

What is the institution's overall general anesthesia rate (percentage) for all cesarean delivery excluding complicated surgical cases with cesarean-hysterectomies for PAS or other? (this is an essential criterion)

0.4

Q16

What is the general anesthesia rate (percentage) for scheduled (e.g. planned/elective) cesarean delivery?

0.23

Q17

What is the general anesthesia rate (percentage) for unscheduled (e.g. unplanned/urgent/intrapartum) cesarean delivery?

0.17

Q18

Is there a quality assurance review of all cases requiring general anesthesia(irrespective of your institution's general anesthesia rate)? (this is an essential criterion) Please provide (attached with the application) evidence of your quality assurance review process.

Yes

Page 5: Obstetric Anesthesia Practice

Q19

What percentage of laboring patients receive neuraxial analgesia? Please list your answer as a percentage. Do not include percentage sign in answer

89.6

Q20

What is the labor epidural analgesia replacement rate (percentage)? Recommendation: the labor epidural replacement rate should ideally be 3-6%. Please list your answer as a percentage. Do not include the percentage sign in your answer.

1.59

Q21

What is the institution's accidental dural puncture (ADP or “wet tap”) rate (percentage) in the obstetric setting? Recommendation: the accidental dural puncture rate should ideally be ≤2%.Please list your answer as a percentage. Do not include the percentage sign in your answer.

1.42

Q22

What is your institution's post-dural puncture headache (PDPH) rate (percentage) in the obstetric setting? This should include PDPH from spinal procedures as well as ADP (wet-taps)Please list your answer as a percentage. Do not include the percentage sign in your answer.

0.64

Q23

What is your institution's epidural blood patch (EBP) rate (percentage of PDPH that receive EBP) in the obstetric setting? Please list your answer as a percentage. Do not include the percentage sign in your answer.

50 (percentage of PDPH with EBP)/ 0.26 (total obstetric population)

Q24

A quality assurance review of all ADP and PDPH should be in place. Please describe your quality assurance review method.

Control of post-puncture headaches is carried out manually using a specific form, which facilitates the monitoring and analysis of each case in real time; This form remains available at the anesthesia station in the obstetric award. Furthermore, in the post-anesthetic visit in the electronic medical record, there is a specific item for documentation and clinical monitoring, which generates an electronic indicator, analyzed monthly by the head of the anesthesia service and this indicator is sent to the Patient Safety and Quality department.

Page 6: Personnel and Staffing:

Q25

Outline the expertise and experience of the obstetric anesthesia lead. Suggested word count of 200-300 words. (this is an essential criterion)Recommendation: The obstetric anesthesia lead must be a U.S. or international 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).

I Did the medical graduation at Faculdade de Ciências Medicas da Santa Casa de São Paulo (year of 1990); immediately after, I attended the regular two-year medical residency program in Anesthesiology at Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo, followed by another year of specialization in obstetric anesthesia at the same institution, from 1991 to 1993.
The medical residency program in Anesthesiology in Brazil must be recognized by the Brazilian Society of Anesthesiology (SBA).
In 1994, I joined the Anesthesiology Service at the Hospital e Maternidade Santa Joana, where I have had the chance to dedicate myself exclusively to obstetric anesthesia ever since.
In 2017, I was invited to organize and lead the anesthesia service at Hospital e Maternidade Santa Maria, a new hospital built by Grupo Santa Joana.
As we had the expertise of Hospital Santa Joana, the team designate to work at Santa Maria begin to work at Santa Joana one year earlier, with the intention of training and maintaining the same skills in caring for high-risk patients.
The Santa Maria operation begun in May 2018 having reached full capacity in mid-2022.
During this period, all Santa Joana's staff started working at Santa Maria and vice versa, as the professional requirements are the same; In 2021, Dr Monica Siaulys, who was the head of Hospital Santa Joana's anesthesia service, was promoted to medical director of the group and since then, I'm the anesthesia leader at both institutions and the team is one for both hospitals.
I send my Curriculum Vitae as attachment.

Q26

Please indicate the total administrative/non-clinical time that the institution/department is allocating to the obstetric anesthesia lead.Recommendation: ideally, some dedicated time should be allocated to the leadPlease list your answer as a percentage. Do not include the percentage sign in your answer.

Non clinical time: 50 (half of time).
On call for clinical issues : full time (out of hospital).

Q27

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

99 anesthesia physicians (that includes all staff for both hospitals)

Q28

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

Number =6 / 6% formal specialists.The official obstetric anesthesia program in Brazil was carried out at the Hospital das Clinicas of the University of Sao Paulo, but it was discontinued years ago.Six of our anesthesiologists have done this training program:Sergio B. B. de Souza(1991);Monica Siaulys (1992);Marina Cestari de Rizzo (1993);Cecilia Rosa Cravo(1995);Joyce C. dos Santos (1997);Jacqueline T. Hirahara (1998). Time of staff experience in attachmentThe total number of anesthesiologists in the group is 99: 27 members have more than ten years practicing obstetric anesthesia at our service and, despite not having received formal education in obstetric anesthesia, they have a huge experience. The complete team undergoes periodic training in our own Maternal Mortalit and Morbidit Prevention Program at the Santa Joana Group Simulation Center.

Q29

During the weekday daytime - how many staff are assigned to provide dedicated coverage for the obstetric anesthesia service? Check and indicate the number under all that apply

*Attending physician:	**6 anesthesiologists from 6 am to 7 pm**
Fellow:	**Not applicable**
Resident:	**Not applicable**
Certified Registered Nurse Anesthetists (CRNA) / Certified Anesthesiologist Assistants (CAA)	**Not applicable**
Other (specify):	**Not applicable**

Q30

During the weekday nighttime - how many staff are assigned to provide dedicated coverage for the obstetric anesthesia service?

Attending physician*:	**6 anesthesiologists until midnight/ 2 anesthesiologists from midnight to 6 am**
Fellow:	**Not applicable**
Resident:	**Not applicable**
Certified Registered Nurse Anesthetists (CRNA) / Certified Anesthesiologist Assistants (CAA)	**Not applicable**
Other (specify):	**Not applicable**

Q31

During the weekends/holiday daytime, how many staff are assigned to provide dedicated coverage for the obstetric anesthesia service?Check and indicate the number under all that apply

Attending physician*:	**6 anesthesiologists on Saturdays from 6 am to 7 pm / 6 anesthesiologists on Sundays from 7 am to 7 pm.**
Fellow:	**Not applicable**
Resident:	**Not applicable**
Certified Registered Nurse Anesthetists (CRNA) / Certified Anesthesiologist Assistants (CAA)	**Not applicable**
Other (specify):	**Not applicable**

Q32

During the weekends/holiday nighttime, how many staff are assigned to provide dedicated coverage for the obstetric anesthesia service?Check and indicate the number under all that apply

Attending physician*:	**4 anesthesiologists on Saturdays and Sundays from 7 pm to midnight/ 2 anesthesiologists from midnight to 7 am.**
Fellow:	**Not applicable**
Resident:	**Not applicable**
Certified Registered Nurse Anesthetists (CRNA) / Certified Anesthesiologist Assistants (CAA)	**Not applicable**
Other (specify):	**Not applicable**

Q33

Estimate the proportion of each shift covered by attending specialists in obstetric anesthesia vs. generalists. Please list the percentage. Do not include the percentage sign in your answer.

Daytime	**33 to 50**
Nighttime	**25 to 50**
Weekend/holiday daytime	**33 to50**
Weekend/holiday nighttime	**25 to 50**

Q34

Outline your supervision policy.* (this is an essential criterion) Please indicate the category of those supervised in your answer. (Anesthesia residents and fellows, CRNAs, students of other kinds)Please indicate the institutional policy for supervision in various situations, including, but not limited to induction and emergence and neuraxial blocks.Recommendation: For 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.

This is already the regulation in Brazil. The anesthesiologist exclusively does Neuraxial anestesia. We do not have nurses anesthetists.
We don't have fellows or residents at Hospital e Maternidade Santa Maria.

Q35

Outline your coverage model.* (this is an essential criterion)Recommendation: In-house (24/7) coverage of obstetric patients, by at least one board-certified (or equivalent) physician anesthesiologist dedicated to covering 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.

Every time there is at least one anesthesiologist with over than 5 years experience in obstetric anesthesia in the house. This doctor is responsible for supervising all patients during his period of duty. If necessary, the head of the department remains remote full time; if this is not possible, one core member, with more than 20 years of experience remains in coverage.
The Anesthesia Staff is composed of 99 anesthesiologists.
We usually work with 6 hours shifts (6:00 or 7:00- 13:00/ 13:00-19:00/ 19:00-0:00/ 00:00 - 7:00).
Those shifts can be combined in 6, 12 or 18hs anesthesia in house calls.
We no longer have 24hs in house calls in our schedule because of being a high-volume service.
For the daytime shifts and night shifts (up to midnight,) we have 6 in house staff anesthesiologists to cover the labor and delivery award and de surgical award, accessible via stairs and internal elevators of exclusive use.
At the surgical award are performed all the obstetric surgeries and some minor elective gynecological surgeries.
The most experienced anesthesiologist on duty covers the position for head of the team who coordinates the activity of the whole team and takes care of the Adult Obstetric Code Blue BIP.

Q36

Outline your backup system.* (this is an essential criterion)Recommendation: the 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.

In cases of high clinical volume, we can always ask for help from the anesthesiologists that are working in the OR of Hospital e Maternidade Santa Joana, fifteen min walk from Santa Maria, with a separate schedule to cover elective gynecological cases. After midnight, we have 2 in house anesthesiologists and the backup plan is to call back one (out of those 4 anesthesiologists) who left the hospital at midnight and are formally on a distance call).

Q37

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

The obstetric nursing team is trained and responsible to support the anesthesiologist during the 24-hour procedures.
Specialized nurses are responsible for the maintenance of the equipment during the day together with the hospital's clinical engineering.

Q38

Provide evidence of ongoing participation in continuing medical education andprofessional practice improvement. (this is an essential criterion)Recommendation: 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/subspeciality membership – target for attending specialists being SOAP members > 80% - with 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).

As previously described, the anesthesia service at Hospital Santa Maria is the same as that at Hospital Santa Joana; therefore, specialist credentials, training and protocols are institutional. In-person educational activities are carried out at the Santa Joana Group Training Center, and online activities are in the Institutional Program called "Colabora" (https://santajoana.csod.com)
Because we are in Brazil, problems regarding the English language skills and the long distance to go to SOAP meetings, not the majority of our faculty members are SOAP Members. However, the lead of the Obstetric Anesthesia Department is Dr. Marina Cestari de Rizzo, has been attending Soap Meetings every year. Also, every SOAP Meeting, at least 4 - 5 staff members of our team, alternates themselves to go for the Meeting.
The way to provide continual medical education in Obstetric Anesthesia for our staff and for other Brazilian anesthesiologists, we therefore have been organizing The Santa Joana International Obstetric Meeting for the past 20 years and inviting most of the SOAP speakers to lecture at our meeting with simultaneous translation for the Brazilian Anesthesiologists. The attendance on this meeting is mandatory for all in house anesthesiologists, at least every 2 years. We are also used to work with protocols, and they are annually updated based on the concepts proposed during each and every SOAP Meeting. The Ostheimer Lecture of the SOAP Meeting is usually presented in our meeting the following year.
As we follow the expertise and standard of care of the other hospitals of Grupo Santa Joana, since the beginning of Santa Maria operation, maternal morbidity indicators are within the range of Santa Joana and Pro Matre Paulista hospitals and we have never had maternal deaths at Hospital e Maternidade Santa Maria, not even during the COVID 19 pandemic.

Q39

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

All the staff members participate in training activities, some as instructors, on Maternal Mortality Prevention Protocols at the Grupo Santa Joana Training Center, developed and periodically updated in accordance with SOAP guidelines.
The experience and leadership of the Anesthesiology Service in the development and updating the institutional protocols for the prevention of maternal mortality is reflected in institutional results and specifically in process improvements.

Q40

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

Periodic meetings for clinical cases and recent publications discussions on obstetric anesthesia are held monthly, with the participation of staff of the three maternity hospitals participation and their respective coordinators, who select subjects of interest to update the whole team.
In addition to monthly meetings, every two weeks, we have meetings for the study of the bases of obstetric anesthesia and we invite last year residents from the biggest university hospitals in Sao Paulo, with the purpose of disseminating and encouraging the study of obstetric anesthesia and the experience and expertise from Grupo Santa Joana, which Santa Maria is the newest hospital.

Page 7: Equipment, Protocols and Policies

Q41

Outline your routine utilization of a pencil-point needle (25-gauge or smaller) for the provision of CSE or DPE labor analgesia. (this is an essential criterion)Recommendation: There are strong recommendations for using small gauge pencil-point needles for all spinal procedures in the obstetric population. Please explain if cutting-edge needles are used, and which efforts are underway to implement a change towards using pencil-point needles

The 27-gauge pencil point needle is routinely used for all obstetric procedures. We do not perform Dural puncture technique, due to the lack of CSE sets with a 25-gauge in Brazil.

Q42

Describe your use of low-concentration local anesthetic solutionsRecommendation: ideally ≤ 0.1% bupivacaine or ≤ 0.15% ropivacaine).

For labor analgesia the technique of choice is CSE (Combined spinal epidural anesthesia): Bupivacaine: 2.5mg + 20mcg of spinal fentanyl + 80mcg of spinal morphine and epidural maintenance performed in an infusion pump (CADD®- Solis/Smiths Medical) in the PIEB scheme, with a 0.0625% bupivacaine + 2mcg/ml fentanyl solution, with 45-min intervals between 9ml bolus of the described solution, associated with a 10ml rescue bolus, with a 10-minute lockdown.
Rarely we perform labor epidural, but the recommended dose is an initial bolus of 10 ml of the infusion solution (0.0625% bupivacaine + 2mcg/ml fentanyl solution) + PIEB described above.

Q43

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

Yes we routinely use a 2 mcg/ml solution of fentanyl added to the diluted epidural bupivacaine solution of 0,0625%. Although we do have the other adjuvants available they are not routinely used during labor analgesia.

Q44

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

We do have a standardized protocol to be used, but this is prepared by each one of our staff anesthesiologists. Our local pharmacy does not have this kind of service.

Q45

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

The alternatives are continuous epidural in cases of early onset analgesia, spinal anesthesia for patients who arrive with a fetus in the birth canal, intravenous analgesia, with remifentanil being the drug of choice, for patients with contraindication to spinal block. Inhalational analgesia with nitrous oxide is available, but Brazilian women are not culturally adept at the technique and therefore do not request it. Furthermore, obstetricians are not familiar with and do not support the use of the inhalational technique.

Q46

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

Standard epidural	**0,6**
CSE	**66**
DPE	**zero**
Other (describe)	**Spinal: 25 ; pudendal block: 1.2; intravenous: 0.2; no anesthesia: 9.**

Q47

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

For labor analgesia the technique of choice is CSE (Combined spinal epidural anesthesia): Bupivacaine: 2.5mg + 20mcg of spinal fentanyl + 80mcg of spinal morphine and epidural maintenance performed in an infusion pump (CADD®- Solis/Smiths Medical) in the PIEB scheme, with a 0.0625% bupivacaine + 2mcg/ml fentanyl solution, with 45-min intervals between 9ml bolus of the described solution, associated with a 10ml rescue bolus, with a 10-minute lockdown.
Rarely we perform labor epidural, but the recommended dose is an initial bolus of 10 ml of mentioned infusion solution (0.0625% bupivacaine + 2mcg/ml fentanyl solution) + PIEB described above.

Q48

Describe your routine utilization of flexible (flex-tipped/wire-reinforced) epidural catheters for labor epidural analgesia. (this is an essential criterion)

Considering combined spinal-epidural analgesia, we usually use eitherthe Portex Combined Spinal/Epidural Minipack with lock Pencil Point Spinal Needle kit or the B.Braun Espocan + Docking System + Perifix Soft Tip. Considering epidural labor analgesia, we generally use the Portex Epidural Catheter. We do not routinely use wired-reinforced catheters.

Q49

Outline how you provide regular assessment of neuraxial labor analgesia effectiveness. (this is an essential criterion)Recommendation: 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).

The anesthesiologist round is done in intervals no longer than 1 hour and/or by patient request. In Brazil, because of the legislation, the nurses are not allowed to manipulate the anesthesia pumps and the epidural cateter, or do supervision of any anesthesia procedure. One or two anesthesiologists are permanently scheduled to be available fot the delivery suítes floor. They are in charge of placing the regional blocks as well as the maintenance follow up.

Q50

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

When there is an episode of breakthrough pain, the approach is immediate and consists of repeating the bolus of local anesthetic, but with a higher concentration (0.125% bupivacaine).
If there is no improvement in pain, we consider the catheter to have failed. This is removed and a new epidural puncture is performed to install another catheter.Screening is performed by analyzing the medical records of patients for whom the pharmacy dispensed more than one CSE kit to check the reason for changing the epidural catheter; after accounting for these cases, the totality of patients in labor who received analgesia under CSE is surveyed and the rate is calculated.

Q51

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.

After labor analgesia, the anesthesiologist has to stay with the patient for the first 30 min and the vital signals are checked every 5 min. After that, the motor block is checked using the Bromage scale and if the patient has the subjective sensation that she is able to stand, she is discharged to walk under supervision of a relative, nurse or nurse technician. After the first 30min, for low risk patients, vital signs, fetal heart tracings and pain are checked.
Our patients remain monitored during labour analgesia (pulse dosimeter, non- invasive arterial blood pressure and cardio scope) on at least every hour. Periodic evaluation as cited above aims do identify signs of inadequate analgesia (by using pain scores as numeric rating scale), motor block (sensory and motor tests), signals of intoxication (level of consciousness and referred symptoms), hypotension (monitoring vital signs) and others. Whenever patient is required to ambulate, she must go through a cautious evaluation of motor block and sensory level of anesthesia by our staff. Our nursing team also provides full care to our patients to prevent adverse events, by staying aside, checking on signs and symptoms and checking on vital signs.
We stimulate close communication within anesthesia and nurse teams and they are free to ask the anesthesia team support whenever it’s necessary.

Q52

Outline your nursing postpartum monitoring protocolRecommendation: institutional protocol, should be consistent with the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) recommendations.

We follow the recommendations of the integrated management of Pregnancy and Childbirth (D 21 up to D28) from the Pregnancy, Childbirth, Postpartum and Newborn Care: A guide for essential practice: Third Edition, World Health Organization, 2015

Q53

Describe intravenous patient-controlled opioid analgesia options offered, and outline protocol specifics including opioids available, administration settings and monitoring requirements.

Intravenous analgesia: our opioid of choice is remifentanil due to its rapid onset, quick elimination and maternal-neonatal safety. Patient and concept are fully monitored (cardioscope, pulse oximeter, non-invasive blood pressure, respiratory frequency rate and fetal heart rate), oxygen is installed by a nasal canula, or facial mask, emergency equipment is available and continuous infusion of remifentanil is started. One of our staffs stays aside all time to identify signs of oversedation and pain control. Beginning with a 0,25 mcg/kg bolus, we titrate continuous infusion on a range from 0,025 mcg/kg/min to 0,1 mcg/kg/min, increasing infusion every 0,025 mcg (0,025 > 0,05 > 0,075 > 0,1). Our 4-hour limit is 3 mg.

Q54

Outline the availability of nitrous oxide for labor analgesia, and if available provide protocol specifics.

The use of nitrous oxide is not widespread in Brazil.
Nitrous oxide analgesia: we dispose of Linde cylinders (LIVOPAN® Linde Healthcare), which provide an oxygen-nitrous oxide 50% mixture for inhalational analgesia. Patient and concept are fully monitored, oriented to remain in bed and hold the equipment by herself (security loop). Parturient starts to inhale in the beginning of uterus contraction. Lips must be fully attached to the oral dispositive. We recommend at least 5 cm of dilation to start inhalation. Duration of inhaled analgesia must be up to 6 hours without hematological monitoring. In case of longer administration, staff must be cautious because of the risk of inhibition of methionine synthesis.
During the COVID 19 pandemic, the use of inhaled analgesia was not allowed at the Grupo Santa Joana due to the increased risk of contagion.

Page 8: Equipment, Protocols and Policies

Q55

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

Preoperative:

Fasting interval:

An 8 hours solid food fasting is required, without distinguishing fatty and fat-free meals, as a safety measure, due to the large number of patients hospitalized for elective cesarean section. The short period of time between admission and the surgery's start makes it very difficult to control the food intake characteristics of each patient.

Clear liquid intake:

The ingestion of non-particulate isotonic liquids is allowed and encouraged up to two hours before the surgery scheduled time.Patients in labor have a special attention: at latent stage of labor may be given a standard diet; patients in the active phase of labor receive a pre-partum diet, with only liquids with no residues.

Patient education

Every patient is previously evaluated by the anesthesiologist outside the operating room, except for urgencies/emergencies, which are evaluated at the time of surgery. Previously, assessments were made at the bedside, as soon as the patient was admitted to bed (even patients who do not desire labor analgesia receive a visit from the anesthesiologist). This is the moment that, in addition to clinical evaluation, the patient receives guidance regarding the progress of labor; implications of labor analgesia, skin-to-skin contact, breastfeeding, anesthetic surgical procedure and individual wishes of each patient are discussed.

In addition to the hospital evaluation, remote care is also carried out by telemedicine, when the patient has the opportunity to undergo clinical anamnesis and talk about the time of delivery, special requests and any other questions, with more time before the delivery takes place. Telemedicine does not yet cover all patients, as it is a recent, expanding activity.

As we mentioned before, we also have the Obstetric Awareness Group that gives support under request for patients with special needs.

Breast-feeding:

Provision of short educational video classes focusing on strict topics related to breastfeeding and individualized educational projects, such as the Godmother Project, in which the patient is accompanied by a WhatsApp group where specialized professionals in prenatal support and complications during pregnancy give support to the patient.

Hemoglobin optimization

All patients are asked about the occurrence of anemia in the prenatal period; patients with anemia or who are included in the hemorrhage protocol receive postoperative iron supplementation and are instructed to continue treatment at the puerperium.

Intraoperative:

Maintenance of blood pressure:

Metaraminol bolus infusion of 200-400 mcg, the vasopressor of choice according to commercial availability in Brazil, is given to maintain systolic blood pressure at basal levels or up to 10% below the level presented by the patient before the beginning of anesthesia. Patients with pre-eclampsia are individually evaluated to choose the most appropriate blood pressure maintenance regimen.

Maintenance of normothermia:

Patients receive warm fluids and the OR´s and delivery suites temperature is maintained at around 23°C; there is still availability of the warmer blanket (WarmTouch Nellcor®) and fluid warmer (Ranger®) when necessary.The post-anesthetic recovery room temperature is also controlled; patients and newborns are kept warm with blankets and a warm crib.

Optimal uterotonic administration:

Oxytocin is administered as a bolus of 1IU intravenously, repeated over 30s up to 3 times, if necessary, followed by a continuous infusion at a rate of 0.083IU.min-1 for 1 hour (when it is an intrapartum C-section, we double the dose of oxytocin infusion 0.16IU.min -1 for 1 hour). If it is necessary to use another class of uterotonic, the Hemorrhage Protocol recommendation is followed.

Antibiotic prophylaxis:

• C-section: 2g of intravenous cefazolin before surgical incision, (ideally 30 minutes before). Patients weighing 120kg or more must receive 3g of

intravenous cefazolin.
• Vaginal delivery: perineal laceration (3rd or 4th degree), at the dose
described above.
The Hospital Infection Control Committee (CCIH) monitors the correct performance of antibiotic prophylaxis, and Dr. Cecilia Rosa Cravo, senior anesthetist of the team, has been a member of this committee since 2017.
IONV/PONV prophylaxis:
• Intraoperative: vasopressor infusion as described above.
• Intraoperative + postoperative: 4mg IV ondansetron associated with 10
mg IV dexamethasone prophylactic;
• IONV: dimeninhydrate 30 mg IV or metoclopramide 10 mg IV.
Analgesia Multimodal:
• 100mcg intrathecal morphine or 2mg epidural morphine;
• 10 mg dexamethasone IV + 100 mg ketoprofen IV+ 2 g dipyrone
(metamizole) IV intraoperative.
Analgesic blocks such as infiltration of the surgical wound with local anesthetic, TAP or QLB are performed in an exception regime, only when prophylactic measures are not sufficient or it is not possible to use spinal opioids, which is infrequent.
Breastfeeding
Anesthesia team actively participates in the promotion of skin-to-skin contact as soon as the umbilical cord is clamped, facilitating the newborn positioning on the maternal chest, electrodes and monitors placement in a way that does not impede this contact.
The newborn is always kept with the mother even at the post-anesthetic recovery room, protected in a top worn by the mother´s chest direct contact.
Intravenous fluid optimization:
• Uncomplicated C-section: 1500 ml of Ringer's Lactate solution, with the postoperative oxytocin infusion solution included.
• Vaginal delivery requiring IV hydration: according to the needs of each patient.
Delayed umbilical cord clamping:
It’s a standardized practice at our hospital to vigorous newborns.
Postoperative:
Early oral intake, mobilization and urinary catheter removal:
Patients receive a standard diet upon arrival back to bed, after discharge from the post-anesthesia recovery room, as long as clinical conditions allow. The urinary catheter is removed 6 hours after birth, and from then on, the patient is encouraged to walk and take a shower, and to maintain periods of rest alternating with periods of walking.
Vital signs controls and nursing care are optimized to preserve the patient's sleep and not interfere with breastfeeding, as long as the clinical conditions are favorable.
Venous thromboembolism prophylaxis:
All eligible patients are included in the institutional thromboprophylaxis protocol, which follows the ACOG guidelines.
Facilitate early discharge:
• Vaginal delivery: discharge on the 2nd postoperative day.
• C-section: discharge on the 3rd postoperative day.
Patients are discharged without prescription of opioids for home use; opioids are only prescribed post-operatively as rescue medication for moderate or severe pain.
Anemia:
Anemia is treated with an intravenous or oral iron supplement, according to the severity of the condition; patients are discharged with the prescription of an oral iron supplement and guidance for return.
Breastfeeding:
It starts in the prenatal period, through institutional video classes, followed by the skin-to- skin contact immediately after birth and kept through the post-anesthesia recovery room. The Breastfeeding Support Group offers home counseling to mothers who difficulties during internship were detected.
Analgesia Multimodal:
Ketoprofen 100 mg orally every 12 hours, associated with dipyrone 1g every 6 hours; oral tramadol 50 mg is used in cases of refractory pain of moderate intensity is detected. Severe pain triggers the hospital Yellow Code for medical evaluation and prescription of intravenous morphine, if indicated.

Glycemic control:
The endocrinologist is notified as soon as the patient with diabetes is hospitalized and accompanies her until discharge; the aim is to maintain normoglycemia during all time, preventing complications for mother and newborn.
The newborn of a diabetic mother is followed by the neonatology team with clinical and glycemic control, according to the institutional protocol.
Promotion of return of bowel function:
Chewing gum is prescribed at the recovery room and patients are encouraged to chew while stay there.
Early mobilization, associated with control of postoperative opioid use, as described above.

Q56

Outline your routine utilization of a pencil-point needle (25-gauge or smaller) for the provision of spinal and CSE anesthesia for cesarean delivery. (this is an essential criterion)Recommendation: There are strong recommendations for using small gauge pencil-point needles for all spinal procedures in the obstetric population. Please provide an explanation if cutting edge needles are used, and which efforts are underway to implement a change towards using pencil-point needles

Spinal anesthesia is the technique of choice for cesarean delivery in our institution. We routinely use the 27G pencil-point needle for spinal anesthesia. When it is necessary to use combined spinal epidural anesthesia (prolonged estimated time), a specific kit, commercially available, is used for this purpose, comprising a 27G pencil-point spinal needle and 16G Tuohy needle.
In Brazil, we only have the CSE kit with 27 spinal needles.

Q57

Describe your approach and outline policies and/or protocols to prevent and/or treat insufficient anesthesia or intraoperative pain during cesarean delivery. (this is an essential criterion)Outline how neuraxial block are tested before incision and strategies/protocols used to ensure blocks are adequate for surgery.Outline strategies/protocols to treat intraoperative pain (intravenous analgesic medication supplementation, and if known, the percentage of patients receiving IV analgesic supplementation at your institution), and describe the follow-up for patients that experience intraoperative pain.Recommendation: institutional protocols (e.g. visual aids) and written policies are preferable (please upload if applicable).

For elective cesarean section under spinal anesthesia: sensory block is evaluated before skin incision, with pinprick, sensation of cold or light touch tests and motor block is evaluated with a modified Bromage scale.
If the level is not satisfactory, aiming a T4 level, a new spinal anesthesia will be performed with half the dose of the local anesthetic used, without the addition of opioid; if there is no evidence of sensory and/or motor block after 15 min, a new spinal puncture using a full dose of local anesthetic with opioid is admnistered. Surgeries that have already started, despite an adequate level, if the patient complains of pain, we ask to interrupt the surgery, give 2 ml of intravenous fentanyl, and ask for help of a second anesthesiologist; with the persistence of pain, we convert to general anesthesia.
In cases of emergency cesarean delivery and/or when surgery has already started, general anesthesia is immediately performed with orotracheal intubation under rapid sequence.
The follow-up for patients that experience intraoperative pain is done during the pos anesthesia visit; the anesthesiologist will continue the post anesthetic follow- up for the necessary time according to the patient's needs.
Emotional support with psicologists or psichiatrists is schedule when indicated.
If the patient presents pain during labor analgesia, indicating inadequate functioning of the epidural catheter, the repetition of a second bolus of local anesthetic is allowed: if the patient does not show improvement in the pain, an early exchange of the catheter is performed to prevent complications if emergency cesarean section is required.

Q58

Outline your post-cesarean delivery analgesic protocol. (this is an essential criterion) Recommendation: Analgesic protocols should include a low dose of 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).

1. Elective Cesarean: Spinal anesthesia with 12.5mg hyperbaric bupivacaine + 10mcg spinal fentanyl + 100mcg spinal morphine. On the 1st postoperative day, patients receive an oral combination of NSAID (100mg of ketoprofen every 12h) + dipyrone or paracetamol (every 6h) + 50mg of tramadol (every 8h). Breakthrough pain is treated with a bolus of 1 mg IV morphine until patients are comfortable or reach a VAS score of less than 3.
2. Vaginal delivery: Initially with non-pharmacological pain relief measures and then with regional labor analgesia, upon maternal request. The technique of choice is CSE (Combined spinal epidural anesthesia): Bupivacaine: 2.5mg + 20mcg of spinal fentanyl + 80mcg of spinal morphine and epidural maintenance performed in an infusion pump (CADD®-Solis/Smiths Medical) in the PIEB scheme, with a 0.0625% bupivacaine + 2mcg/ml fentanyl solution, with 45-min intervals between 9ml bolus of the described solution, associated with a 10ml rescue bolus, with a 10 minute lockdown. On the 1st postpartum day, they receive an oral combination of NSAID (100mg of ketoprofen every 12h) + dipyrone / paracetamol (every 6h); routine oral opioids are not used for these patients. Breakthrough pain is treated with 1 mg IV morphine bolus until patients feel comfortable or achieve a VAS score of less than 3.

Q59

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?

Surgical wound infiltration with local anesthetic is not a routine practice. TAP block is the technique of choice for patients undergoing cesarean section under general anesthesia, associated with the combination of NSAIDs and analgesics described above. The Quadratus Lumborum Block, and its technical alternatives, is a second option.
All the abdominal wall blocks techniques are exclusively performed by the anesthesia team, using an ultrasound device.
At Hospital Santa Maria we do not have regionalists.

Q60

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. (this is an essential criterion)

We do not use oxycodone in the postoperative period to treat pain in obstetric patients. Our most common oral opioid is tramadol and it is only used in the first three days, if necessary, following a C -section and always in combination with NSAIDs and other analgesic such as dipyrone or paracetamol. Our patients are usually discharged without any opioids prescribed.

Q61

Describe your standardized protocol or plan of action to manage patients with opioid use disorders, and/or chronic pain. Recommendation: institutional protocols (e.g. visual aids) and written policies are preferable (please upload if applicable).

Our incidence of patients with chronic post-cesarean pain is quite low (http://www.jove.com/video/1671/).
Likewise, the use of opioids in the obstetric patient is restricted and used only during hospitalization. We do not have a routine to recommend the use of these medications after hospital discharge.
For patients who are admitted during the puerperal pregnancy cycle and have opioid use disorders, they are regularly seen by our team of psychiatrists and together with obstetrics and clinics define the plan of care.

Q62

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. (this is an essential criterion)

Our operating rooms temperatures are set between 23 to 24 C. As soon as the babies are delivered they are covered with a warm blanket and we encourage the practice of skin to skin. For the mothers who are being submitted to elective C-section, we do not routinely use active warming devices, but we do use warm fluids.
In cases of prematurity, the newborn is immediately transferred to a warm crib for neonatal care and temperature control. If the temperature is adequate and the clinical conditions allow, the baby is positioned skin to skin in the mother.

Q63

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

Maternal temperature is measured on admission to the operating room and is continuously monitored during the procedure with a skin device for patients under regional anesthesia and an esophageal device for patients under general anesthesia; at the end of surgery; before the referral to the recovery room, mother and baby temperatures are checked as a final safety measure. The total process time takes approximately 1 hour.
All the temperature controls are registered at the nurse records and anesthesia records.

Q64

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 redosing strategy; identification of alternatives if allergies known/detected; and consideration of additional antibiotics if applicable for high-risk patients. (this is an essential criterion)Recommendation: institutional protocols (e.g. visual aids) and written policies are preferable (please upload if applicable).

As antibiotic prophylaxis we use 2g of cefazolin before the skin incision; if measured bleeding is greater than 1000ml or the surgery time is longer than 4 hours, patients receive an additional 2g of cefazolin.
Patients weighing 120kg or more should receive 3 g of prophylactic cefazolin and, regardless of the patient's weight, in cases of bleeding greater than 1000 ml and/or surgery lasting more than 4 hours; this overweight patient will receive an additional 2 g of cefazolin.
In case of cephalosporin allergy, patients receive 240mg gentamicin in 100ml saline in 30min, followed by 600mg clindamycin (900mg for patients weighing 120kg or more). In both cases, regardless of the patient's weight, if the bleeding exceeds 1000ml or the surgery time exceeds 4 hours, she will receive an additional 600mg of clindamycin and no more gentamicin.
Patients who need antibiotictherapy are individually monitored by the infectologist of the Hospital Infection Control Commission.
Infection rate in our obstetric patients at our hospital is 0.5% in 2022.

Q65

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

All the medications needed either for elective or emergency C-section comes in ready to go kits that are provided by the local pharmacy (located inside the operating theatre) and are dispensed either to the operating room just before the patient gets into it or to the pre anesthesia room, in the elective cases. We do not keep any medication inside the operating room. When needed, extra medications are ordered and immediately delivered to the operating room.

Q66

Outline your standardized approach to prevent and treat hypotension after spinal anesthesia. (this is an essential criterion)Recommendation: Ideally, prophylactic infusion of phenylephrine to maintain blood pressure within 10% of baseline, with boluses of phenylephrine and/or ephedrine and/or norepinephrine as appropriate to treat hypotension, as well as intravenous fluid pre-load or co-load during spinal or CSE anesthesia should be utilized.

C-section - Spinal anesthesia
• Whitacre 27G spinal anesthesia with 12.5mg hyperbaric
bupivacaine+ 10mcg of fentanil + 100mcg of morphine
• Co -load our patients with 10ml/kg of Lactate Ringer
• Check blood pressure every minute until delivery and keep the
systolic blood pressure within the normal limits. There is a zero tolerance for hypotension. (The reference value is obtained after doing an average of three blood pressures checked immediately before the spinal block.)
For any drop of blood pressure from the baseline value, administer a bolus of 20mcg of metaraminol. Blood pressure is checked every minute until delivery and then every 3 min until the end of surgery. Metaraminol is an alfa-agonist vasopressor similar to phenilephrine. We do not routinely use phenilephrine in our patients due to the fact that our phenylephrine ampoules come in a concentrated solution with the need of several dilutions. The local pharmacy does not provide this kind service.

Q67

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

Risk stratification
For the nausea and vomiting prophylaxis and therapy we classify patients in
• Low risk: 0-1 point (Nothing or dexamethasone)
• Medium risk: 2 points (Dexamethasone and ondasetron)
• High risk: 3 ou + points (Dexamethasone and ondasetron and
dimenhydrinate)
According to presence of one or more risk factors as described bellow: Risk factor and points
• Female: 1 point
• Non smoker: 1 point
• Motion sickness: 1 point
• Parental opiois: 1 point

Q68

Outline your perioperative antiemetic prophylaxis and treatment protocol.Recommendation: 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.Institutional protocols (e.g. visual aids) and written policies are preferable (please upload if applicable).

As most of our obstetric patients gets a score 2, the most common combination of antiemetic drugs at our hospital is to use dexamethasone together with ondasetron.
If the patient needs additional prophilaxis or treatment, we have dimenhydrinate and metochlopramide for immediate use.

Q69

Outline which medications are immediately available for treatment of intraoperative shivering (e.g. dexmedetomidine, clonidine, etc) and pruritus (e.g. nalbuphine) in the operating room and recovery unit.Recommendation: institutional protocols (e.g. visual aids) and written policies are preferable (please upload if applicable).

Dexmedetomidine and naloxone are available for immediate use at the satellite pharmacy inside the surgical award, although shivering is not common: our surgeons are really fast and we keep a very close attention to room temperature and infusion of warm fluids.

Q70

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

In terms of risk stratification, our policy includes the patients with a BMI >40 and the ones with a STOP BANG score equal or greater than 3 at risk of developing the delayed respiratory depression due to the spinal morphine.
For postoperative analgesia, our routine is to use multimodal analgesia with a low dose of spinal morphine (not more than 100mcg) associated with the oral use of NSAIDs and other analgesics (dipyrone/paracetamol) for all patients. Besides that we have a very limited use of parenteral opioids.
The use of IV morphine is very limited, used to treat breakthrough pain and this have to be used under the direct supervision of an anesthesiologist and it happens in less than 5% of our cases.
So, for a regular patient, we would monitor only the respiratory rate and other spinal morphine side effects, including nausea, vomiting and pruritus every hour for the first six hours and then every three hours for the first 24h.
If patients have severe side effects they are antagonized with IV naloxone.

Q71

Describe your monitoring and treatment for respiratory depression after cesarean delivery. (this is an essential criterion)Recommendation: the institutional 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).

The patients added to our regular respiratory depression monitoring protocol, they are all sent to the semi-intensive care unit and stays with a pulse oximetry on for the first 24h, together with an hourly visit form the nurse/nurse technician. The incidence of patients with a BMI >40 in our institution is around 0,66%.

Q72

Outline your post-operative nursing care and monitoring.Recommendation: post-operative nursing care should be consistent with the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) and ASA recommendations.

We follow the recommendations of the integrated management of Pregnancy and Childbirth (D21 up to D28) from the Pregnancy, Childbirth, Postpartum and Newborn Care: A guide for essential practice: Third Edition, World Health Organization, 2015.

Q73

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).

Now it is part of our practice.
The anesthesia team actively participates in promoting skin-to-skin contact after birth, facilitating the positioning of the baby inside the top worn by the mother, placing electrodes and monitors so that they do not interfere with the process.
We also participate in simulation activities to improve the process in the delivery room and in post-anaesthetic recovery.

Q74

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

At Santa Maria we have neonatologists to cover the labor and delivery unit 24/7 and they are in charge of doing the neonatal resuscitation. There is always a neonatologist in the room whenever a baby is being born and they are in charge of neonatal resuscitation at the hospital, remaining with the neonatal Blue Code beep.

Page 9: Equipment, Protocols and Policies

Q75

Outline your hemorrhage risk stratification algorithm and management protocol.Recommendation: 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.

The hemorrhage protocol is institutional and used in all maternity hospitals in the Grupo Santa Joana. It is very similar to the protocol proposed by the National Partnership Obstetric Hemorrhage Bundle.
On admission, patients are classified according to their risk of bleeding: low, medium and high risk and prophylactic measures corresponding to the individual risk are performed.
In addition, all blood loss during delivery is quantified and a patient will be re- registered according to the volume of blood lost. All patients remain under the supervision of nurse-midwives and anesthesiologists for the first two hours after delivery to monitor vital signs, uterine contractility and regression of anesthesia. Patients who bleed more than 1000 ml provide 1g of tranexamic acid, a second- line uterotonic, and test collection is performed to control bleeding coagulation, blood gases, electrolicts and arterial lactate.
These patients maintain direct supervision of the anesthesiologist to define the cause of the hemorrhage according to the 4T principle (tone, thrombin, trauma and tissue), for its elimination, bleeding control within 1 hour and normalization of blood tests through collections at every 30 minutes.
For patients who bleed more than 1500 ml, the H code is activated when the help of another anesthesiologist is requested and activation of the massive transfusion protocol, obtaining the arterial line and central venous line are considered, and the opinion of the team of in house Obstetricians.
Patients who develop any organic dysfunction or are submitted to hysterectomy are stabilized and transferred to the ICU, always accompanied by the anesthesiologist and obstetric nurse.

Q76

Describe your massive transfusion protocol. (this is an essential criterion)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.

The transfusion agency is located on the same building as the obstetric award, with direct access by elevators.
The hemotherapy team monitors the Hemorrhage Protocol together with the Anesthesia Service and keeps available for immediate use: 4 units of O negative type red blood cell concentrate, 10 platelet units, 10 units of cryoprecipitate and 2 units of fresh frozen plasma A-B.
The massive transfusion protocol is triggered with losses greater than 3000 ml, uncontrolled bleeding and clinical signs of hemodynamic instability.
It consists of the initial transfusion of packed red blood cells, followed by fresh frozen plasma, platelet concentrate and fibrinogen concentrate (we only use cryoprecipitate if fibrinogen concentrate is not available).
The release of blood bank products is immediate, as is their administration, which should not be delayed to wait for laboratory tests.
The proportion used is 1 unit of FFP for every 2 units of packed red blood cells. Platelet concentrate should be administered at a dose of 1 unit for every 7 to 10 kg/weight, in a single dose. Fibrinogen reposition starts with 2 -4 g fibrinogen concentrate or 50-90 ml/kg of cryoprecipitate.
Once laboratory results are obtained, we make the transition to target transfusion.

Q77

Describe your type and number of rapid-infuser devices to assist with massive resuscitation (e.g. Belmont® Rapid Infuser, Level 1® Fast Flow Fluid Warmer). (this is an essential criterion)Recommendation: These devices are preferably stored on the unit, especially in high volume centers and tertiary/referral centers. Describe where yours are stored and accessibility to the L & D unit.

We have the Ranger Pressure Infusor/ Fluid Warming available at the obstetric award.

Q78

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

Blood losses are measured by weighing compresses, gauzes, and collectors during the intraoperative period, surgical drapes after the end of the surgery. If losses exceed 1000g during the intraoperative period, measurements are taken periodically until bleeding stops. The final result is recorded in the anesthesia record, in the description of the surgery and in the checkout of the operating room.
The incidence of Obstetric Hemorrhage is tracked by the electronic records and BI panel, togheter with the blood bank records. (See attachments).

Q79

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

At Hospital Santa Maria, we use the ultrasound equipment to establish central intravascular access .The anesthesia staff uses the Venue 50 GE equipment, available at the obstetric award.
So whenever a central venous access is needed or in cases of difficult peripheral access, we use the ultrasound equipment.
The intraosseous kit is avaiable for use at the satellite pharmacy and at the emergency carts.

Q80

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. *Recommendation: Point of care equipment is preferred. If your facility does not have this please provide information on how quickly HCT and coagulation labs are turned around and mechanism in place to facilitate rapid turnaround in obstetric hemorrhage emergencies.

The point of care equipment available in the operating room is the i-STAT I (Abbott Point of Care System) that measures hematocrit, hemoglobin, blood gases and lactic acid. The coagulation profile is processed at the laboratory located inside the hospital building; in cases of triggering the hemorrhage protocol, the laboratory prioritizes the care of the bleeding patient. The ROTEM® is available for use, however it is also at the laboratory, not at the surgical award; the result is published in real time through the computerized system, in the institution's computer terminals.

Q81

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, counseled regarding blood product options, and prepared or optimized for delivery? If appropriate for your facility, please describe criteria which would prompt transfer of these patients to a facility with a higher level of care. For example, indicate if cell salvage is readily available 24/7, or if available but only for scheduled cases, and if applicable where it is located. (this is an essential criterion)

Cell salvage is available for use in elective cases. The equipment is operated by the blood bank's technical team, under the direct supervision of the hemotherapy medical team; therefore, it is reserved for patients previously scheduled at least 24 hours in advance. Patients who formally refuse to use blood products are advised on Brazilian legislation, which guides their use when there is a risk of death for the patient.
In the pre-anesthetic evaluation, after a complete anamnesis, the patient who has restrictions on the use of blood products is informed about the steps of the hemorrhage protocol, which has as one of its goals preventing hemorrhage and consequently blood transfusion and also optimizing blood reserves of iron for patients with peripartum anemia.

Q82

Describe your hemorrhage quality assurance review process.Recommendation: 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.

The electronic record system
All cases that bled more than 1000 ml are routinely rewied by the head of the anesthesia department and are formally presented during the monthly meeting of the Maternal Mortality and Morbidity Reduction Program.

Those cases where the group finds that there is room for improvement are formally analyzed using the root cause analysis followed by implementation of new routines.
All unplanned hysterectomies are analyzed individually in their own form, as well as the use of Bakri balloon.
All patients who receive transfusions are analyzed, with emphasis on those who received 4 or more units of blood components. See analysis on attachment.

Q83

Briefly describe and provide your institution’s obstetric hemorrhage toolkit (including protocols, checklists and/or algorithms).* (this is an essential criterion)

The Institutional Hemorrhage Protocol is divided in 4 phases according to the blood loss and there are a specific bundle of tasks to be completed in each one of those phases as described below.
Whenever you reach the next phase, you must check if the action proposed on the previous phase were already executed.
The four phases are further detailed bellow. The algorithms/ checklists and the hemorrhage risk stratification table were sent in a separate archive.
Phase 1:
• Assess hemorrhage risk for every patient and have different approaches based on their risk on the day of delivery:
Low Hemorrhage risk:
Measurement of cumulative blood loss (formal, as quantitative as possible). Intermediate risk:
Order lab exams (Hb/Ht; platelets, fibrinogen, PT, TTPa) and blood type screening.
Measurement of cumulative blood loss (formal, as quantitative as possible).
High risk:
Order lab exams (Hb/Ht; platelets, fibrinogen, PT, TTPa), type, blood type screening and cross match.
Measurement of cumulative blood loss (formal, as quantitative as possible). Active management of the 3rd stage of labor with the use of uterotonics for all patients and monitoring of uterine tonus for early detection of uterine atony. Patients receive 20U of oxytocin in 500ml of Lactate Ringer at 250ml/h rate for 2 hs.
After birth, the patient stays under direct supervision of a nurse/nurse technician for the first two hours to monitor uterine tonus, and the patients who have requested analgesia/ anesthesia keeps under the supervision of an anesthesiologist for at least 2 hs at the Post Anesthesia Recovery Room. If cumulative bleeding is less than 1000 ml, they are discharged to labor ward and follow the regular obstetric routine of the postpartum care.
Phase 2:
Patients who had a cumulative blood loss greater than 1000 ml and less than 1500 ml. The bundle must be completed in less than 1 hour. This is also called the Golden Hour.
• Ask for help and give oxygen and work with CRM principles.
• Check vital signals, and lab exams (Hemoglobin, hematocrit, platelets, PT and TTPA, fibrinogen levels every 30 min until the bleeding is controlled.
• Give tranexamic acid 1g IV, diluted in 100 ml of saline and administered in 10 minutes
• Identify and eliminate the cause of bleeding using the 4T´s principle (T= tonus; T= tissue; T =trauma; T = thrombin).
• Give Fibrinogen Concentrate, if fibrinogen level is lower than 200mg/dl.
• Start with active measurements of warming.
• Administer the second line of uterotonics (either ergotamine or prostaglandin). • Repeat another 2g of cephazolin if the abdominal cavity is still open.
• The first postoperative day is usually done in the semi-intensive care unit with a close monitoring of vital signs, uterine contractility and bleeding.
After 24hs the patient has another lab panel checked. Oxytocin is maintained in the infusion pump for the first 6hs and, if elective, receives a second line uterotonic for the first 24hs
• Criteria for discharge: Hb> 8,0 g/dl, fibrinogen levels greater than 200mg/dl, absence of bleeding.
Phase 3:
Patients who has a cumulative bleeding greater than 1500ml.
Active Code H.
Consider establishing a central venous line and arterial line. Get another large bore IV access.
Consider activate massive Institutional Transfusion Protocol.
Consider call for the second Ob/Gyn opinion if the bleeding is not under control. All patients from Phase 3 are sent either to the Semi Intensive care unit or to the Intensive Care Obstetric Unit at least for the first postoperative day.
Criteria for discharge: Hb> 8g/dl, fibrinogen levels greater than 200mg/dl, absence of bleeding.Phase 4:
Patients who develop organ dysfunction defined as: 1. Respiratory support,

2. Vasoactive drugs infusion,
3. Renal or liver dysfunction.
Follow up in the Intensive care unit and repeat blood exams at least for the first 3, 6 and 12hs of admission and then according to the case.
Before hospital discharge, all patients who had hemorrhage (bleeding more than 1000ml) receives a visit of one of the members of the Multidisciplinary Hemorrhage Team in order to obtain feedback from the patient and family, in terms of the quality of the care they had.

Classification of bleeding risk:

Moderate risk for bleeding
Polidramnious
Macrossomia
Multiparity
Mild Preeclampsia
Anemia
Anticoagulants
Previous history of bleeding/atony

High risk of bleeding
Severe preeclampsia
Coagulopathy
Active bleeding
Placental abruption
Placenta previa /placental spectrum* Twins
*For elective cases of placental spectrum the multidisciplinary evaluation is mandatory.

Q84

Outline your policies/procedures for suspected abnormal placentation (e.g. placenta accreta/percreta) cases. * (this is an essential criterion)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.If appropriate for your facility, please describe criteria which would prompt transfer of these patients to a facility with a higher level of care. (this is an essential criterion)

Although Santa Maria has all the facilities to deal with emergency cases of massive hemorrhage, such as placenta Accreta, outpatients are referred to Santa Joana, that is the main hospital of the Group and is a member of the International Society for Placenta Accreta Spectrum (IS-PAS) since 2020 and meets the steps required to care for patients with the placenta accreta spectrum.
Patients are identified during prenatal care and referred to multidisciplinary team that belongs to both institutions and have huge experience in the placental accreta spectrum.
We encourage the patient to pass a multidisciplinary evaluation early on, which includes: evaluation by the radiologist to perform imaging tests; evaluation with an obstetrician for prenatal planning until delivery, discussing in advance the possibility of performing a hysterectomy. The hematologist initiates iron supplementation, as well as the nutritionist provides nutritional support; the psychologist providing emotional support throughout pregnancy and the anesthesiologist participate in the planning of the procedure, as well as the occasional participation of the radiologist, general surgeon and urologist. Surgeries are performed in an operating room equipped with radiology equipment.
Blood bank, neonatal intensive care and adult intensive care are activated
All cases are analyzed and classified according to the IS-PAS standard and periodic meetings are held for their analysis and dissemination.
See attached presentation.

Q85

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

In the Obstetric Surgical Unit and in the Labor and Delivery Unit we have available the video laryngoscope and a specific suitcase with both the regular (Green kit) and difficult airway kits (Yellow kit 1; Yellow kit 2 and Red kit), so that we have all of them immediately available if needed:
Green Airway Kit: bougie, stylet, endotracheal tubes (7.0 and 7.5), regular laryngeal masks (3 and 4) and a suction cannula;
Yellow Airway Kit 1:(Supraglotic device): contains a FAST TRACK and the proper wired tracheal tube with the extension;
Yellow Airway Kit 2: (Supraglotic device): contains a laryngeal tube and the proper insufflation syringe;
Red Airway Kit: contains a surgical blade 15, a bougie and one endotracheal tube.
All the team are trained to use this emergency equipment and are trained on the difficult airway algorithm.

Q86

Describe if you have an obstetric-specific difficult airway protocol on the difficult airway cart and in obstetric operating rooms. (this is an essential criterion)

For the elective and anticipated difficult airways cases, we have available the video laryngoscope and a special kit with cotton swabs, lidocaine spray, atomizers for the topical anesthesia during awake intubation.
A flexible bronchoscope is also available and the team is trained in the use of all devices described.
For general anesthesia in the obstetric patient, the first attempt for tracheal intubation is performedby videolaryngoscopy.
The equipment available is the McGRATH® Videolaryngoscope with the regular sizes 3, 4 and the X blade.
For the airway management each and every C-section room and labor and delivery unit is equipped with the regular airway kit.
All operating rooms and delivery rooms have the following items: Facial mask size 4
Laryngoscope Cable
Macintosh Blades 3 and 4.
We use Difficult Airway Society guidelines, printed and available in the Difficult Airway cart, upon which our periodic training is based. (see attachment).

Q87

Describe the availability of suction devices.Recommendation: 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, including labor rooms where epidurals are administered.

Neuroaxial labor analgesia is always placed in our Labor and Delivery rooms and the bag and mask ventilation device is placed next to the oxygen and suction sources.
Surgical rooms (Cesarean section rooms): Dräger Anesthesia Machine
Inside the anesthesia cart we have available bag and mask ventilation device, and an exclusive suction source is placed right back to the head of the patient at the operating room.

Q88

Describe your in-house backup plan to provide personnel with surgical airway access skills if needed 24/7. *What is the plan for a cannot ventilate/cannot intubate scenario at your facility? Do you have personnel in-house or on call who can provide a surgical airway? Please provide specifics.

It is our policy that every 3 years, all our staff anesthesiologists must do a recertification on airway management and it is validated for the Society for Airway Management, including the training in surgical airway skills.
For the surgical airway access we use the red kit described above.
So, if needed, our own staff anesthesiologists would do it.
Our training skills and materials organization into the Difficult Airway carts are under the fundamentals of the 2015 Difficult Airway Society Algorithm.

Q89

Outline your lipid emulsion availability, appropriate supplies, and protocols that allow a timely response to local anesthetic systemic toxicity. (this is an essential criterion)

We do have a protocol for local anesthetic systemic toxicity, as described bellow:
1) Call for help and suspend the local administration immediately
2) Give oxygen and protect the airway
3) Start with CPR immediately if cardiac arrest or pulseless electrical activity
4) Administer 1,5 ml/kg of the lipid emulsion (ILE) as a bolus (Draw the right
volume of intralipide solution in a 50 ml syringe and administer IV in 2-3 min)
5) Start an infusion of the same solution at a rate of 0.25ml/kg/min (all the hemodynamic parameters as blood pressure, heart rate, should be recorded every 15min)
6) Patients with assystole or with pulseless electrical activity, who do not respond with the initial bolus, the above mention bolus dose can be repeated twice with a 5 min interval.
7) If there is an initial response to the bolus followed by another hemodynamic instability, the infusion rate can be increased to 0,5ml/kg/min; respecting the maximum volume of lipid emulsion that is 10ml/kg/min in 30min
8) Where possible ILE can be stopped after one hour, or less, in accord with the patient's clinical status.
The details on how to use and recommended doses are in the cover of the box.

Q90

Outline your malignant hyperthermia protocol. (this is an essential criterion)Recommendation: Dantrolene formulations and sterile water vials, along with other supplies must be available to allow a timely response to malignant hyperthermia.

In Brazil there is a specific legislation for the immediate availability of dantrolene for intra-hospital emergencies. Dantrolene is available for immediately use at satellite pharmacy, located inside the surgical award, next to the lipid emulsion emergency box. The instructions on how to use are available in the lid of the box that keeps the medication kit and at the Checkilst for Anesthesia Crisis booklet available in each surgical room item 11.

Q91

Outline cognitive aids and training resources.Recommendation: cognitive aids and clinician awareness of resources to manage emergencies should be available, and training to facilitate team member awareness of the location and means to retrieve resources to better manage emergencies.

There is a translation of Crisis Resource Management, Ariadne Labs, made under authorization obtained by Dr. Monica M Siaulys, for Hospital Santa Joana. They are available next to the anesthesia equipment in each and every room.
In addition, we have information about institutional protocols posted in the hospital corridors and on emergency kit containers specific to each situation.
The training of the team for crisis management is mandatory, carried out every 2 years at the Santa Joana Group Training Center.

Q92

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).*

The GE Venue 50 ultrasound device, allocated in the surgical ward, is available for the exclusive use of the anesthesia service. Its use is mandatory for obtaining central venous access and performing regional blocks such as transversus abdominis/quadratus lumborum/erector spinae as well as it is used to perform neuraxial blocks, determination of cricoid membrane, evaluation of gastric content in special cases.
All the team is now performing the capacitation on POCUS, organized on the Santa Joana Training Center as the workshop held at SOAP Meeting 2023.

Q93

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. (this is an essential criterion)

We have daily internal multidisciplinary rounds done inside the surgical/obstetric award at shift turns, at 7:00 am and 7:00 pm with the participation of anesthesiologists, obstetricians and obstetric nurses.
Another multidisciplinary round is held at 8:00 am, with the participation of the medical board, obstetric, anesthesia, neonatology, ICU doctors and nursing leaders, in addition to risk management representatives.
The transition of care book is where the high risk, ongoing labor and recovery anesthesia care unit cases are formally documented during transition of anesthesia shifts. One staff anesthesiologist is in charge of coordinating the care of high-risk patients, and the multiprofissional team when needed and also the anesthesia activities of the daily team.
Sign in, timeout and sign out are performed for every obstetric patient before and after any anesthesia intervention.

Q94

Outline how timeouts are performed prior to all anesthetic interventions.

Our institution performs a safety checklist (time out) before all surgical procedures.
Everybody stops to pay attention to the nurse that performs the timeout; at delivery rooms, the checkin is done in two phases: first with the obstetric nurses and anesthesiologist, at the moment of analgesia procedure and the second phase with the obstetrician too, just before the delivery.
The main items checked are: patient identification, proposed procedure, history of allergy, devices, monitoring, antibiotic prophylaxis, risk of difficult airway management, inclusion in institutional protocol and blood products reserve.

Q95

Outline evaluations by the anesthesiology service of patients (1) undergoing scheduled cesarean delivery and other obstetric-related surgeries, and (2) the majority of patients presenting to labor and delivery. Please describe the process for “high-risk” patients being brought to the attention of the anesthesia service and evaluated (triage or consultation).

All obstetric hospital admissions (elective and emergencies) are always multidisciplinary including at a minimum the OB/Gyn, a nurse and the anesthesiologist.
Pre-anesthetic evaluation (not emergency cases) is done prior to referral to the obstetric center.
The patient is found through a panel available on monitors in the operating room, where the entire 24-hour surgical schedule is visible, with color signaling where the patient is. As soon as the anesthesiologist responsible for the pre-anesthetic evaluation identifies the patient's presence in the sector, the pre-anesthetic evaluation is carried out.The pre-anesthetic evaluation document is accessible in the anesthesia system, an integral part of the computerized medical records of all patients in the Grupo Santa Joana and remains available for consultation. After the pre-anesthetic evaluation, the anesthesiologist plans the anesthetic procedure and explains the procedure to the patient, who in turn signs the informed consent form to undergo anesthesia.

Q96

Outline the system in place to screen and identify all high-risk patients prior to admission (in the antenatal period). 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).

Despite working with both external (doctors that bring their cases to be done at Hospital Santa Maria) and in house OB/Gyn doctors, most of our high risk cases are referred to be taken care by our own in house Ob/Gyn doctors. For the ambulatory patients, they are followed in the high-risk prenatal clinic and for patients who need hospital admission; they are usually followed in the semi intensive care unit. Support by other subspecialties such as endocrinologist, cardiologist, hematologists, anesthesiologists are done according to the case and as needed. The same in house Ob/Gyn team gives support also to our external doctors 24/7 if needed. So, whenever a birth plan is defined for our high- risk patients, the anesthesia department is notified and a pre anesthesia consultation is done.

Q97

Describe the availability of surgical backup.* Please describe the availability and time to mobilize general surgeons, gyn-onc surgeons, trauma surgeons as needed 24/7. In house? On call??

We have two teams of General Surgeons that give us support 24h/7 days and they can reach the hospital in less than 30 min. They alternate 24hs shifts and are supervised by Dr. Sergio Lucchesi and Dr. Renato Barreto.
Here is the Grupo Santa Joana care team:o OB/GYN: Dr Mario Macoto Kondo; Dr Eduardo Cordioli; Dr Rodrigo Borsari
o Vascular surgeon: Marcelo Giusti
o General surgeon: Sergio Lucchesi/ Renato Barreto
o Anesthesiologist: Ligia Telles Mathias /Marina Cestari de Rizzo
o Urologists: Jose Luis Chambo
o Obstetric nurse: Elaine Galvao/ Fatima Cassemiro/Rose Pirollo
Elective cases have to be discussed by the multidisciplinary team. The interventional radiology is used preferably at Santa Joana. For emergency cases, the vascular surgeon, urologist, and general surgeon are on a distance call and usually arrives in less than 30min.

Q98

Outline your protocol or pathway to activate interventional radiology.*

The prenatal clinic is the same for all hospitals in the Santa Joana Group and, as mentioned above, Hospital Santa Joana is a member of the International Society for Placenta Accreta Spectrum (IS-PAS) and for the patients that are identified during prenatal care and are referred to multidisciplinary team, the interventional radiology team cames when the use of iliac occlusion balloons are indicated.
In those rare situations where the accretism is identified only intra-operatively, the same team that does our elective cases stays on call and have 30 minutes to arrive to give support to our local team at Santa Maria.

Q99

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

The ICU is located at the second floor of the same building as the obstetric award (9th and 10th) and there is 4 beds. The most common cause of admission is severe pre- eclampsia. We call it a planned admission, and all patients receiving magnesium sulphate stays in the intensive care unit for at least the first 24 hours. Our intensive care physicians also have a huge experience in taking care of the pregnant and postpartum patients.

Q100

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.

The legislation here in Brazil requires a staff anesthesiology running the recovery room, besides the nurses and nurse technicians. An anesthesiologist must discharge all patients that are submitted to any kind ofanesthesia procedure. Specifically, the ones who were submitted to C-section are sent to the recovery room and the ones who were submitted to vaginal delivery do their recovery period in the labor and delivery room. However, in both cases, they were submitted to the same quality care and policies regarding the frequency of vital signs, monitoring and uterine tonus evaluation. For the anesthesia discharge we use the Aldrete -Kroulik score. After the recovery room, low risk patients are sent to the postpartum care and they are usually discharged home either on the second or third postpartum day. Before hospital discharge patients also receive at least one anesthesia follow up visit, documented in the medical record.

Q101

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 nonreassuring fetal heart rate.

It is called the Yellow Code Team, which is the same as MEOWS: if the patient has one or more criteria for triggering the Yellow Code, the team must respond within 15 minutes.
There is also the Blue Code Team, which must be with the patient within 5 minutes and includes an obstetrician able to perform a pre-mortem C-section.

Q102

Outline your simulation drills and training.* (this is an essential criterion)

The multidisciplinary training program started at Grupo Santa Joana in 2014 and has become mandatory for all obstetricians/gynecologists, anesthesiologists, nurses, nursing technicians and professionals in intensive care units.
Since the starting of the Grupo Santa Joana's own Training Center and the computerized platform for online access, the totality of the anesthesiologists of are trained before the beginning of their activities at the hospital and repeat on- site training every 2 years; in addition, as updates are made, they are available on the computerized training platform of Grupo Santa Joana (Sistema Colabora - https://santajoana.csod.com) for immediate access to updated content.
All assistance teams admitted carry out training in the Maternal Mortality Prevention Simulation Program with simulation exercises for Preeclampsia, Hemorrhage, Sepsis and Maternal Cardiac Arrest. Each module lasts for 3 hours with task stations and scenarios with high-fidelity simulators. In addition to the Maternal Mortality Prevention Program, in our simulation center we also have neonatal resuscitation programs, vaginal birth assistance programs, training programs in labor analgesia and it’s possible to develop any type of training that is necessary to improve assistance as soon as it seems necessary.
In addition, all anesthesiologists must renew their ACLS course every 2 years.
See attachment.

Q103

Outline the percentage of anesthesiology faculty/Anesthesia Physician (MD) (who cover obstetric anesthesia call), obstetricians, nurses, and other personnel who have participated in obstetric simulation (or inter-professional team training) in the last 5 years, or if more frequent please indicate if yearly _____%. Please indicate number and describe.

100%.
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Q104

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-formaternal-safety/#.YofbDHbML-g)Recommendation: 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.

Training program

Maternal Mortality Reduction Program - Eclampsia

1. Introduction

More than half a million women die each year from pregnancy-related causes, 99% in low- and middle-income countries. In many low-income countries, complications of pregnancy and childbirth are the leading cause of death among women at an early age. The Millennium Development Goals put maternal health at the heart of the fight against poverty and inequality, as a human issue. Ten percent of women have high blood pressure during pregnancy and complicated preeclampsia in 2% to 8% of pregnancies. Preeclampsia can cause problems with the liver, kidneys, brain, and clotting system. Risks to the baby include growth and prematurity. Although the outcome is usually good, preeclampsia can be devastating and life-threatening. Overall, 10% to 15% of direct maternal deaths are associated with preeclampsia and eclampsia. When maternal mortality is high, most deaths are attributed to eclampsia rather than preeclampsia. Perinatal mortality is high after preeclampsia, and even higher after eclampsia. In low- and middle-income countries, many hospitals have limited access to neonatal intensive care, and thus mortality and morbidity are likely to be considerably higher than where such facilities are available. The optimal timing for delivery of women with severe preeclampsia before 32 to 34 weeks of gestation remains a dilemma. Magnesium sulfate can prevent and control eclamptic seizures. For necessary preeclampsia, halve the risk of eclampsia (number to treat 100, 95% confidence interval, 50 to 100) and likely reduce the risk of maternal death. Although it is an effective low-cost treatment, magnesium sulfate is not available in all low- and middle-income countries. In addition to adequate therapy and treatment, the multidisciplinary team needs to be prepared to act promptly in critical situations, for this it is important to train the team to unify best practices and make care safe and quality.

2. GeneralPurpose

Develop knowledge and skills of doctors and nurses regarding the prevention and treatment of pre-eclampsia and eclampsia.

2.1 Learning Objectives

After presenting the signs and symptoms in the patient with eclampsia, being able to identify the criteria for the severity of the disease and perform the recommended procedures according to institutional protocol.

3. Methodology:

Simulation is one of the most modern methods of training and learning professionals in a hospital environment, as it works at the top of the knowledge pyramid. It is based on the principle that when a professional is able to perform a task independently, he retains information better and has knowledge internalized. In the same way that the flight simulator allows the pilot to gain confidence and offers the opportunity for the professional to train fundamental skills to fly an airplane, the Grupo Santa Joana Simulation Center allows health professionals to train clinical and non-clinical skills preparing them to perform their functions with excellence even in rare, infrequent or complex events, especially in the maternal and newborn area – without putting patients at risk or causing any harm.

With a very flexible physical space that allows you to mimic normal delivery suites, medical offices or operating rooms, and advanced simulator technology that includes both low-fidelity simulators for training practical skills and high- fidelity simulators that respond physiologically to different In clinical situations, the professional in training can experience very real scenarios, improving their performance and increasing the safety of patients in the hospital environment. In this training program, considering the need to develop knowledge and skills, several learning strategies will be used, such as: Lecture, Group Discussion, Skills Station and High Fidelity Clinical Scenario.

4. Instructors:

The Grupo Santa Joana Simulation Center is more than a structure with advanced technology. Our professionals make the difference. Having in its clinical staff reference professionals in the areas of obstetrics, neonatology, anesthesia, fetal surgery, neonatal cardiac surgery, obstetric and neonatal nursing and with complementary training in the area of simulation, makes the extensive experience acquired over the years in multidisciplinary skills can be transferred to the simulated scenarios, ensuring that your experience at the Grupo Santa Joana Simulation Center is very productive and enriching in terms of learning

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Clinical Consultant:

Monica Maria Siaulys

Instructors:

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• Ane Cristine Lopes Carreiro Fiel
• Cecília Rosa Cravo
• Fernanda Cristina Paes
• Guilherme Haelvoet Correa
• Jacqueline Toshiko Hirahara
• Julio Cesar Dias Pereira
• Marcia Rochelle T.F. Bohn Pessalli

5. Target Audience: The training will target obstetricians, anesthesiologists and intensive care physicians and nurses from obstetric units.

Training program

Maternal Mortality Reduction Program - Hemorrhage

1. Introduction

More than half a million women die each year from pregnancy-related causes, 99% in low- and middle-income countries. In many low-income countries, complications of pregnancy and childbirth are the leading cause of death among women of reproductive age. Among the Sustainable Development Goals of the World Health Organization, the goal is to reduce the global maternal mortality rate to less than 70 per 100,000 live births by 2030. Severe bleeding, especially after childbirth, is among the main causes of maternal death in the world. world. Classification of hemorrhagic risk, measures for early recognition of hemorrhage and objective quantification of blood loss are key procedures in the care of patients with hemorrhage, as well as standardized early treatment, as patients with severe hemorrhage after delivery can die within a few hours if don't get proper care. In addition to adequate therapy and treatment, the multidisciplinary team needs to be prepared to act promptly in critical situations, for this it is important to train the team to unify best practices and make care safe and quality.

2. GeneralPurpose

Develop knowledge and skills of doctors and nurses regarding the care of patients with high bleeding risk, as well as the therapy for the care of severe bleeding.

2.1Learning Objectives

• When providing clinical care to a patient with blood loss, being able to quantify losses objectively and cumulatively.
• Displayed the volume of blood loss, being able to define the stages of care for the bleeding patient.
• By identifying the phase in the bleeding protocol, being able to identify the actions to be taken with assertiveness and speed.
• Faced with a situation of care for a patient with severe hemorrhage, being able to demonstrate organized care, with quality and safety.
• In cases of patients with severe bleeding, perform blood transfusion according to institutional protocol.
• When providing care to patients diagnosed with placental accreta, employ measures to prevent bleeding.

3. Methodology:

Simulation is one of the most modern methods of training and learning professionals in a hospital environment, as it works at the top of the knowledge pyramid. It is based on the principle that when a professional is able to perform a task independently, he retains information better and has knowledge internalized. In the same way that the flight simulator allows the pilot to gain confidence and offers the opportunity for the professional to train fundamental skills to fly an airplane, the Grupo Santa Joana Simulation Center allows health professionals to train clinical and non-clinical skills preparing them to perform their functions with excellence even in rare, infrequent or complex events, especially in the maternal and newborn area – without putting patients at risk or causing any harm. With a very flexible physical space that allows you to mimic normal delivery suites, medical offices or operating rooms, and advanced simulator technology that includes both low-fidelity simulators for training practical skills and high-fidelity simulators that respond physiologically to different In clinical situations, the professional in training can experience very real scenarios, improving their performance and increasing the safety of patients in the hospital environment.

In this training program, considering the need to develop knowledge and skills, several learning strategies will be used, such as: Lecture, Group Discussion, Skills Station and High Fidelity Clinical Scenario.

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5. TargetAudience

The target audience will be obstetricians, anesthesiologists and intensive care physicians and the training of nurses in obstetric units.

Q105

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-topostpartum-sterilization)

It is rarely done because in Brazil the legislation is different and nowadays is considered a mutilation. It can certainly be done, in very specific cases and with a very specific documentation.

For urgent cerclage we have anesthesiologists coverage the ob floor 24h/7d.

Q106

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).*

It is our policy to have always one operating room “READY TO GO” for obstetric emergencies.

Q107

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

The anesthesia team is responsible for obtaining arterial lines and central venous lines guided by ultrasound.

Cardiac output monitoring is performed with the EV 1000 Edwards Lifesciences®.

Our staff is well trained to perform transthoracic echocardiography, but as we still do not have 24h coverage for that in the anesthesia department, whenever needed we get support from our ultrasound specialists.

As described before, we are now capacitating the team on POCUS.

Q108

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). *Describe your ability to provide invasive monitoring including arterial lines, central lines, cardiac output monitoring, echocardiography, vasoactive drug infusions, intensive care, cardiac care, and other advanced management techniques. What can be accommodated in your obstetric unit? Describe what requires transfer to another unit? Describe what requires transfer to another hospital?

At Santa Maria Hospital, critically ill patients remain in the operating room during the surgical procedure and perioperative period for intensive care or in the intensive care unit.
Both sectors are equipped with hemodynamic monitoring, echocardiography and teams qualified to install invasive catheters, which must be guided by ultrasound.
Vasoactive drugs are administered using infusion pumps, which are pre-programmed according to the drug and dose required.
The intensive care unit is located in the same building, with direct access via an elevator exclusively for the use of critically ill patients; transport is carried out under continuous monitoring, oxygen and ventilatory support, always accompanied by the anesthesiologist, nurse, nursing technician and physiotherapist for ventilatory support when necessary.
The beds are fully equipped for ventilation, hemodynamic support and infusion pumps; the intensive care medical and nursing teams are qualified and trained as the anesthesia service.
At ICU, the beds are continuously monitored by telemetry; specialty support teams are available 24 hours a day, remotely, as mentioned above, and the echocardiogram can be performed by the specialist, who is available in the hospital 6 hours a day, for neonatology and ICU; at other times, the specialist remains on call.
Transfers are only made for imaging tests, such as CT scans and MRI scans, which are carried out at Santa Joana Hospital; once the test is finished, the patient returns to Santa Maria Hospital.
The patient is transported in an ICU ambulance belonging to the hospital and is continuously monitored and accompanied by the anesthesiologist, ICU nurse and nursing technician.

Q109

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

Grupo Santa Joana maintains the Customer Service that attends to patients prior to hospitalization, with education programs related to childbirth and newborncare; it also offers the Godmother Project, which consists of including the pregnant woman in a WhatsApp group with specialized professionals who accompany and provide multidisciplinary support throughout the entire pregnancy.
The anesthesia team actively participates in this programs, which are also linked to the Training Center and produces videos and educational lives that are made available on institutional social networks, informing about available analgesia and anesthesia techniques, their effects on the mother, on the newborn and lactation, pre- and post-anesthesia care, according to ERAC guidelines.

Q110

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

The anesthesia team leads institutional training by developing content and administering training for nursing, midwifery and doulas teams at our Training Center.

Q111

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

Not applicable.

Q112

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). * (this is an essential criterion)

The population assisted at the institution, individual needs of each patient are observed at different times: scheduling, previously by Customer Service and/or during hospitalization.
Regarding the native language, the entry of a translator is allowed to accompany the patient throughout the care process; if it does not bring a translator, the institution makes it available, through a list available with the nursing management. Chinese and Lebanese patients are very frequent among our patients. Muslim patients in particular have concerns such as not uncovering their heads and being attended by exclusively female teams, which is promptly provided.
Dietary requirements for any reasons are respected and provided as soon as the patient requests, as long as they do not violate patient safety rules. Homoaffective couples are previously assisted by a specialized team, formed by a nurse, neonatologist, anesthesiologist and midwife, in order to understand the family's desire in relation to birth, planning and legal implications.
Patients with childbirth desires that involve different practices are heard by the Obstetric Awareness Group, formed by an obstetrician, neonatologist and nurses prior to hospitalization and birth planning is carried out in a shared decision model.
In cases where there are safety implications for the anesthesiologist, the anesthesia team is called to participate in the decision with the patient, family and multidisciplinary team to reach a consensus that does not harm the family's wishes and does not compromise the safety of the binomial.
We have already asked our IT department to include in our maternal and neonatal outcomes platform data racial and etnicity in order for us to be able to report all our outcome data strattified.

Q113

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). (this is an essential criterion)

Grupo Santa Joana has the mission is to promote the health of women and newborns, which naturally focuses on the needs of women population.
The anesthesia service traditionally leads avant-garde actions at Grupo Santa Joana.
The staff represents the ethnic diversity of the Brazilian population, with different orientations, always prioritizing technical capacity and workforce, in an inclusive environment, form the anesthesia team

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Page 10: Recommendations and Guidelines Implementation

Q114

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:● Platelet count prior to neuraxial block placement: No requirement for routine testing in healthy patients● Appropriate liquid and diet restrictions: Intrapartum (allow clear liquids in uncomplicated patients); cesarean delivery (clear liquids up to 2 hours prior)● Timing of neuraxial analgesia: Allow neuraxial analgesia in early labor (no specific cervical dilation required)

We ask for a prior platelet count for patients who were classified as having either an intermediate and high risk of bleeding as stated in the Hemorrhage Protocol.
It's our policy to encourage patients to have clear liquids up to 2 hours prior to Cesarean delivery.
As clear liquids, we encourage patients to have isotonic clear liquids or pasteurized coconut water. This is usually done during patient admission; if she is hospitalized, she receives the pre-partum diet, as previously mentioned in the description regarding the ERAC.
Although we are known because of having very high c-section rates, because of having a high volume service, we also have a big number of vaginal deliveries. So all our staff also has a huge experience in regional labor analgesia techniques. The number of patients being admitted with the desire of a natural childbirth with no intervation is also increasing. Regional labor analgesia is always done under patient request, with no specific cervical dilation required. Patients can choose to have both the non-pharmacological and pharmacological methods of analgesia. All our labor and delivery rooms are fully equiped with bath tubes, therapeutic balls etc. Doulas were also been incorporated as team members in vaginal deliveries and sometimes during C-section as well.

Q115

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

All team is trained in our own Training Center and this is mandatory for all heath professionals at Hospital e Maternidade Santa Maria, specifically adressing the differences in the care of the cardiac arrest in the pregnant patient.
This is one 4 modules of the Maternal Mortality Reduction Program developed at the simulation center.
Also we have the non announced simulated blue codes drills organized by the simulation team at regular intervals in order to improve and document the performance of the blue code team and also to identify the opportunities of improvement.
Manual left uterine displacement if uterus is palpable or visible, the common and specific causes of cardiac arrest during pregnancy, the need for perimortem cesarean delivery as soon as possible are all reinforced during trainning.

Q116

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

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

Q117

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● Severe Hypertension in PregnancyRecommendation: institutions should consider implementation of all available safety bundles.

Obstetric Hemorrhage: objective evaluation of any blood loss / hemorrage risk stratification mandatory for any obstetric procedure/ massive transfusion protocol activation.
Severe Hypertension in Pregnancy; active participation on simulation drills; active participation at the perioperative care of pre-eclamptic patients and resposible for the administration of magnesium sulphate during the perioperative period.
As previosly mentioned, all our Hospital Protocols regarding the Maternal Mortality Reduction program were based on the National Partnership Maternal Safety Bundles (Hemorrhage -Preeclampsia) and their participation on the simulation drills are compulsory for all in house multi professional team including the nurses, nurses technicians, anesthesiologists, obstetricians and intensive care doctors.
The maternal and neonatal outcomes of those patients included in the Hemorrhage, Preeclampsia and Sepsis are presented monthly in the Grupo Santa Joana Quality Program Meeting, when we have de possibility to compare our performance with the others hospitals of the group.
For the implementation it is important to emphasize that we have been working with those maternal safety Bundles since Hospital Santa Maria was opened, supported by a strong culture of continuous health professional education from Hospital Santa Jaona, to keep the credentials to work in our team.

Q118

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.

All women receiving thromboprophylaxis are included in the Hemorrhage Protocol either as medium or high-risk groups for bleeding, depending on the dose, type or time since last use of the anticoagulant therapy.
This information is both at the obstetric nurse admission forms and is reconfirmed in the obstetric and pre anesthesia evaluation.
Whenever a patient is included in the hemorrhage protocol, her medical record gets a red dot and the electronic medical record a red square also identifying the risk factor or risk factors. Before any regional anesthesia procedure this information is also rechecked during the Timeout.

Q119

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

For the outpatient population or the same day admission, the use of anticoagulants is formally questioned during all multidisciplinary evaluations, including the pre-anesthetic evaluation. For high-risk patients or patients already admitted for pregnancy follow-up, perioperative thromboprophylaxis planning is carried out on a multidisciplinary basis during the daily round or at the moment of delivery indication.
The use of anticoagulant also triggers a pop up window at the electronic medical record.

Page 11: Quality Assurance and Patient Follow-up

Q120

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.

The head of the Anesthesia Department, Dr. Marina Cestari de Rizzo is in charge of the Hemorrhage Protocol of the Hospital e Maternidade Santa Maria.
Dr Monica M Siaulys, Senior anesthesiologist and Medical Director of Grupo Santa Joana is in charge of the Maternal Mortality Reduction Training Program of Santa Joana Simulation Center, that includes Hospital Santa Maria.The Maternal Mortality Reduction Program developed in the Simulation Center has 4 modules (Preeclampsia, hemorrhage, sepsis and cardiac arrest) of 3 hours training each. The educational content of the program was based on the PROMPT program and adapted to our local culture and using the consultation of our own multi professional team of experts, including the head of the OB/Gyn, Infection Control, Fetal Medicine, Intensive Care Unit, Nutrition, Nurse and other departments as appropriate. In each module, the health professionals have both task stations and high fidelity simulations drills and train both technical and nontechnical skills.

Q121

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.

All committees related to patient care have the participation of anesthesiologists; they serves as a members of each Committee that develops and implements multidisciplinary clinical policies.

Hemotherapy Committee: Dr. Marina Cestari de Rizzo

Medical Records Committee: Dr. Alberto Vasconcelos

Obits Committee: Dr. Marina Cestari de Rizzo

Hospital Infection Control Committee: Dr. Cecilia Rosa Cravo.

Medical Ethics Committee (Institutional, Grupo Santa Joana):Dr. Marina Cestari de Rizzo, Dra Jacqueline Hihahara

Bioethical Institutional Comitee(Institutional, Grupo Santa Joana): Dr. Monica M Siaulys

Pain Management Committee: Dr Fernanda Marques

Q122

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).*Recommendation: 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.

After being discharged form the recovery room or from the labor and delivery unit, patients also receive another follow up visit from an anesthesia staff usually after the first 24 h after the procedure.

If the patient develops any anesthesia-related complication, a member of the anesthesia team evaluates the patient personally. For complications, we use the criteria proposed by the Anesthesia Quality Institute.

The registration is done in the anesthesia system, within the electronic medical record and is a mandatory document in the patient's medical record.

Q123

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

In case of anesthesia related complications, we can easily ask/have support from other specialties as requested by our in house team of experts or even external doctors. The in house neurological support when needed in done by the neurosurgeons who are in charge of taking care o of the neonatal unit and also from the intra utero myelomeningocele correction.There is also the clinical neurology team that remains in the house during daytime hours and remotely during nighttime periods, including weekends.
However, it is important to state that the anesthesia related complications at Santa Maria are really rare.
The most common complication is the post dural puncture headache and in those cases one staff anesthesiologist as mentioned before immediately evaluates patients.

Q124

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?* Recommendation: outpatient PDPH should be evaluated and treated on the obstetric unit and not in the emergency department.

For patients who were submitted to regional anesthesia and complaint of headache, they have to be immediately evaluated by an anesthesiologist. The PDPH is classified in either mild or severe according to the intensity of pain and possible association with other symptoms such as nausea, vomiting, tinnitus etc... In the mild cases and with no other symptoms, they are initially treated with oral caffeine and paracetamol and reevaluated at least at 24h intervals until resolution of the headache. In severe cases or mild cases with symptoms, they are sent to the OR for the blood patch. It's important to emphasize that se remains at the obstetric unit, with the baby and family during the treatment.

Q125

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 Patient Safety and Quality Department does a formal and multidisciplinar analysis of the events envolving the whole team involved in the care.
The anesthesia team has members in some institutional committees:
• Medical Records Committee that analyze information about patient quality and safety, surgical and anesthetic complications. During the transition to electronic medical record, we implemented anesthetic medical record, which provides information about preoperative, intraoperative and postoperative period.
• Hospital Infection Control Committee which analyzes correct use of antibiotics and infection treatment, ensure presurgical antibiotic management, creates activities to improve hands wash and hygiene, diminishing hospital infection.
• Pain Management Comitte: our team and the nursing team made the pain protocol to identify incorrect moderate and severe pain management. We implemented pain score scales, NRS (numeric rating score) and VAS (visual analogue score) and classified the pain intensity. If the intensity is moderate or severe, a pain management team member evaluates the patient and prescribes a correct treatment.
• Hemotherapy Committe: the anesthesia team is the leader team in the bleeding management and actively participates in the analysis and management of the use of blood components with the blood bank.
In addition, at daily multidisciplinary round, all cases are discussed, including adverse events; from this initial filter, the case is taken to the Patient Safety and Quality committee and all the professionals involved are called to analyze the root cause.

Q126

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

All patients can evaluate the anesthesia provider at three moments: at first, at de recovery room: the patient receive a tablet and can score and make appointments about all the service and experience during c-section procedure or labor delivery, anesthesia and nurse care.
The second moment is on day after the procedure/surgery: a member of anesthesia team evaluates the patient and asks about analgesic satisfaction, possible complications (PDHP) and the patient can score all the anesthesia service.
The third moment is just before the hospital discharge: the patient evaluates all the hospital service and can describe her experience and give appointments.
We also receive from our costumer service department, the monthly evaluation of the anesthesia team. Complaints and praises are idividually analyzed by the head of department providing feedbacks when necessary.

Page 12: Supplemental Documentation

Q127

Please upload the CV of the lead Obstetric Anesthesia #1

MARINA%20CESTARI%20DE%20RIZZO%20CV%20.pdf (70KB)

Q128

Please upload supplemental documentation #2.

Training%20program-%20Hemorrhage.pdf (50.4KB)

Q129

Please upload supplemental documentation #3.

Training%20Program%20-%20Sepsis.pdf (113.7KB)

Q130

Please upload supplemental documentation #4.

Training%20Program%20-%20Eclampsia.pdf (51.8KB)

Q131

Please upload supplemental documentation #5.

COE%204%20SANTA%20MARIA%20MASSIVE%20TRANSFUSION%20PROTOCOL.pdf (4.5MB)

Q132

Please upload supplemental documentation #6.

COE%203%20SANTA%20MARIA%20Hemorrhage%20Protocol.pdf (5.1MB)

Q133 **Respondent skipped this question**

Please upload supplemental documentation #7.

Q134 **Respondent skipped this question**

Please upload supplemental documentation #8.

Q135 **Respondent skipped this question**

Please upload supplemental documentation #9.

Q136 **Respondent skipped this question**

Please upload supplemental documentation #10.