COMPLETE

Collector: Web Link 1 (Web Link)
Started: Tuesday, July 12, 2022 6:20:14 AM
Last Modified: Sunday, September 25, 2022 2:49:08 PM
Time Spent: Over a month
IP Address: 68.101.166.208

Page 1: Background Information

Q1

First Name

Terrance

Q2

Last Name

Breen

Q3

Credentials

MD

Q4

Institution

Sharp Mary Birch Hospital for Women and Newborns

Q5

Street Address

3003 Health Center Drive

Q6

City

San Diego

Q7

State

CA

Q8

Zip Code

92123

Q9

Country

USA

Q10

Email address

Twbreen@gmail.com

Page 2: Institutional and Application Details

Q11

Please mark the application designation that is applicable to you.

Recertification (i.e. previously received COE certification)

Q12

Describe the institution where you provide obstetric anesthesia services

Private/county/community

Q13

What is the country of the applying institution

USA

Q14

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

92123

Q15 **Train/teach residents**

Mark all that apply to your institution

Q16

How many deliveries are there at your institution per year?

>7,000

Q17

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

35.7

Page 3: General Anesthesia Rates

Q18

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

1.5

Q19

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

1.9

Q20

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

0.3

Q21 **No**

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

Page 4: Institutional Details

Q22

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

91.0

Q23

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

3.0

Q24

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

0.4

Q25

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

0.2

Q26

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

22

Q27

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

9 ORs total, 3 dedicated to OB

Q28

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

4

Page 5: Personnel and Staffing:

Q29

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

7 anesthesiologists cover L&D 95% of time (day, night, weekends, holidays). 2-4 others cover the remaining shifts

Q30

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

3 have completed OB fellowships. Each of the other 4 have significant expertise by working in our department for 5-30 years. For all 7 anesthesiologists, their clinical practice is ~60% L&D, 40% OR. The OR schedules 5 anesthesiologists per day to cover OB cases (CS, cerclage, etc.) and GYN cases. In addition the the 7 OB Team anesthesiologists, 5 other anesthesiologists helpo cover the SMBHWN operating rooms.

Q31

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

*Attending physician:	**1**
Fellow:	**0**
Resident:	**0**
Certified Registered Nurse Anesthetists (CRNA) / Certified Anesthesiologist Assistants (CAA)	**0**
Other (specify):	**0**

Q32

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

*Attending physician:	**1**
Fellow:	**0**
Resident:	**0**
Certified Registered Nurse Anesthetists (CRNA) / Certified Anesthesiologist Assistants (CAA)	**0**
Other (specify):	**0**

Q33

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

*Attending physician:	**1**
Fellow:	**0**
Resident:	**0**
Certified Registered Nurse Anesthetists (CRNA) / Certified Anesthesiologist Assistants (CAA)	**0**
Other (specify):	**0**

Q34

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

Daytime	**100**
Nighttime	**90**
Weekends	**80**

Q35 **Yes**

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

Q36

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

I, Terrance William Breen, MD, am the Head of the Anesthesia Department at SMBHWN. I completed my anesthesia residency in Canada in 1991 and am Canadian Board Certified. I completed my Obstetric Anesthesia fellowship at the Beth Israel Hospital, Boston, in 1992. I have extensive clinical and administrative experience in (1) Calgary, AB, Canada, (2) Durham, NC and (3) San Diego CA. Please see my CV for details. I last attended (virtually) the 2021 SOAP meeting.

Curriculum Vitae
Terrance William Breen, M.D.

Current Office
Information: 3626 Ruffin Road, San Diego, CA 92123
Phone: 858-565-9666; Fax Number: 858-565-9441

Residence: 3756 Milan Street, San Diego, CA 92107-3712
Cell: 858-926-9663
Pager: 858-637-8057; Email: twbreen@gmail.com

Date of Birth: 12/02/59; Place of Birth: White Rock, British Columbia, Canada
Citizenship: Canada
USA (since 07/21/2010)

Education:
Undergraduate: High School 11 – 12
Semiahmoo Senior Secondary, White Rock, B.C., Canada

1982 College:
University of British Columbia
B.Sc.

1985 Medical School:
University of British Columbia
M.D.

Specialty Certification and Dates:
Royal College of Physicians and Surgeons of Canada
June 4, 1991 No. 414968

Medical Licensure:

Medical Licensure:

Medical Board of California, July 8, 2005 C52003
DEA Number BB6480850
Medical Council of Canada, June 10, 1986, No. 61222
College of Physicians and Surgeons of British Columbia, June 27, 1986, No. 10993
Royal College of Physicians and Surgeons of Canada, June 4, 1991, No. 414968
College of Physicians and Surgeons of Alberta, July 7, 1992, No. 010632
North Carolina Medical Board (restricted license), July 6, 1999, No. 99-00739
North Carolina Medical Board (unrestricted license), Jan. 22, 2000, No. 99-00739
Commonwealth of Virginia, Board of Medicine, Oct. 8, 1999, No. 0101222285

Other Licensure:

Basic Life Support Valid to 01/28/21
Advanced Cardiac Life Support Valid to 01/28/21

Professional Training, Academic Career and Work Experience:

06/14-present Sharp Mary Birch Subgroup, San Diego, CA
ASMG Chief of Subgroup (04/18-present)
Hospital Chief of Subgroup (04/19-present)

07/11-05/14 Outpatient Subgroup, San Diego, CA

04/11-06/11 Sharp Chula Vista Hospital, Chula Vista, CA

9/06-03/2011 Alvarado Hospital, San Diego, CA
Scheduler, Member PRS Committee (08/06 to 07/10)
Chief of Subgroup (01/08-07/2010)

10/05-Present Anesthesia Service Medical Group, Inc., San Diego, California
Staff Anesthesiologist

8/2000-9/2005 Duke University Medical Center, Durham, North Carolina
Director of Quality Improvement

8/99-9/2005 Duke University Medical Center, Durham, North Carolina
Assistant Professor

1997-1999 Foothills Medical Centre, CRHA, Department of Anaesthesia, Calgary, Alberta
Division Chief (Department Head)

1996-1997 Foothills Hospital, Calgary, Alberta
Clinical Director, Department of Anaesthesia

1993-1996 Foothills Hospital, Calgary, Alberta

1993-1999 Foothills Hospital, Calgary, Alberta
Director of Obstetric Anaesthesia

1992-1999 University of Calgary, Calgary, Alberta
Clinical Assistant Professor

1991-1992 Beth Israel Hospital, Harvard Medical School, Boston, Massachusetts
Obstetric Anesthesia Fellowship

1985-1986 Memorial University of Newfoundland, St. John's, Newfoundland
Rotating Internship

1987-1991 Foothills Hospital and the University of Calgary, Calgary, Alberta
Anaesthesia Residency

1986-1987 Family Medicine Locums in White Rock, British Columbia

Awards and Distinction:

1977 John E. Feigl Scholarship
1978 J.K. Campbell & Associates Ltd. Scholarship
1980 University Scholarship (U.B.C.)
1981 Summer Research Scholarship, University of Ottawa, Ottawa, Ontario
1989 Organizer, 6th Annual Western Canadian Anaesthesia Resident's Retreat
1990 Chief Resident
1991 First Prize, University of Calgary, Anaesthesia Resident's Research Day
1991 Second Prize, Resident's Research
Western Canadian Anaesthesia Resident's Retreat

Committees:

07/20-Present Sharp Healthcare Formulary Committee, Member
05/19-03/21 SMBHWN Case Review Committee, Member
05/19-Present SMBHWN Infection Prevention Committee, Member
05/19-Present SMBHWN Surgical Site Infection Committee, Member
05/19-07/21 SMBHWN OR Committee, Member
05/19-07/21 SMBHWN Birch Ops Committee, Member
07/19-Present SMBHWN P&T Committee, Chair
04/18-Present Chiefs of Subgroups Committee, ASMG, Member
09/14-Present SMBHWN P&T Committee, Member
5/09-Present Quality Improvement & Compliance Committee, ASMG, Member
1/08-07/10 Anesthesia Supervisory Committee, Alvarado Hospital, Chair
1/08-07/10 Medical Executive Committee, Alvarado Hospital, Member
1/08-07/10 Chiefs of Subgroups Committee, ASMG, Member
8/06-07/10 Physician Resources and Scheduling Committee, ASMG, Member
5/04-2007 Member, SOAP International Outreach Committee
2001-2005 Guest Reviewer, International Journal of Obstetric Anesthesia
1999-2005 Guest Reviewer, Anesthesia and Analgesia
1995-2005 Guest Reviewer, Canadian Journal of Anaesthesia
Chair, Subcommittee of the Committee on Guidelines of Practice
CAS, to examine the Guidelines for Obstetric Anaesthesia of the CAS

4/05-10/06 Vice President, Kybele, Inc.
8/00-9/05 Member, Credentials Committee, Department of Anesthesiology, DUMC
8/00-9/05 Member, Executive Committee, Department of Anesthesiology, DUMC Director, Quality Improvement, Department of Anesthesiology
8/00-9/05 DUMC, Chair, QI Committee
1999-2000 Finance Committee, Department of Anesthesiology, DUMC
1997-1998 Organizer, Job Fair for 1998 CAS Meeting
1996-1997 Clinical Executive, Department of Anaesthesia, Foothills Hospital
1992-1999 Resource person on obstetric anaesthesia for southern Alberta
1992-1994 Organizer Anaesthesia Journal Club
1996-1999 Operating Room Committee, Foothills Hospital
1992-1998 Obstetric Management Committee
1994-1997 Chair, Obstetric Section, Canadian Anaesthetists' Society
1995-1996 Ad Hoc Committee on Epidural Analgesia of the Alberta Medical Association
1995 Grace Operating Room Planning Committee
1994-1996 Quality Assurance Committee, Anaesthesia
1993-1995 Residency Training Committee, Anaesthesia
1993-1995 Perinatal Information Management Systems

Professional Memberships:

International Anesthesia Research Society
American Society of Anesthesiologists # 590710
American Society of Regional Anesthesia
Society for Obstetric Anesthesia and Perinatology
California Society of Anesthesiologists
San Diego Medical Society

Overseas Education:
In September 2004, I was one of seven anesthesiologists who traveled to Turkey with Kybele, Inc., a US NGO, in order to teach obstetric anesthesiology. I returned to lecture in Turkey in January 2005. In January 2007 I traveled to Ghana also to teach anesthesia.

Publications and Presentations:
Poster Presentations

Breen TW, Janzen JA. Epidural fentanyl and lidocaine for cesarean section: when should fentanyl be given? S.O.A.P., 1991, Boston, MA

Breen TW, Oriol NE. Ambulatory epidural anesthesia for labor. A.S.A., 1992, New Orleans, LA

Giesinger CL, Halpern SH, Breen TW. Comparison of epidural fentanyl and lidocaine with subarachnoid sufentanil analgesia during labour. C.A.S., 1997, Vancouver

Breen TW, McNiel T, Dierenfield L. Canadian Obstetric Anaesthesia Survey 1997: Labour Analgesia. S.O.A.P., 1998, Vancouver, B.C.

Breen TW, McNiel T, Dierenfield L. Canadian Obstetric Anaesthesia Survey 1997. Operative Anaesthesia. S.O.A.P., 1998, Vancouver, B.C.

Yang, T, Breen TW, Macarthur A. A comparison of 0.1 mg and 0.25 mg intrathecal morphine for analgesia following cesarean section. S.O.A.P. 1998, Vancouver, B.C.

Breen TW, McNiel T, Dierenfield L. Canadian Obstetric Anaesthesia Survey 1997: Labour Analgesia. C.A.S., 1998, Toronto, ON

Breen TW, McNiel T, Dierenfield L. Canadian Obstetric Anaesthesia Survey 1997: Operative Anaesthesia. C.A.S., 1998, Toronto, ON

Breen TW, McNeil T, Brooks R, Price BT. Informed consent in obstetric anesthesia research studies. S.O.A.P., 1999, Denver, CO

Breen TW, Campbell DC, Halpern SH, Muir HA, Blanchard W. Patient controlled epidural analgesia without a background infusion: description and efficacy. S.O.A.P., 1999, Denver, CO

Breen TW, McNeil T, Brooks R, Price BT. Informed consent in obstetric anesthesia research studies. C.A.S., 1999, Calgary, AB

Campbell DC, Breen TW, Kronberg JE, Nunn RT, Fick GH. The motor blocking properties of ropivacaine and bupivacaine during labor analgesia. ASA, 2000, San Francisco CA

Helsley SE, Bell E, Breen TW, Penning D. Total spinal anesthesia requiring tracheal intubation in parturients: the association with failed epidural anesthesia. ASA, 2000, San Francisco CA

Breen TW, Campbell DC, Nunn R, Kronberg J, Halpern SH, Muir HA, Fick G. Epidural ropivacaine vs. bupivacaine: obstetric outcomes. S.O.A.P., 2001, San Diego, CA

Campbell DC, Zwack R, Breen TW, Yip R. EC80-EC95 of bupivacaine and ropivacaine plus fentanyl for labor epidural analgesia. S.O.A.P., 2001, San Diego, CA

Breen TW, Tucker P. Increasing QI reporting by the use of compliance reports. ASA, 2001, New Orleans, LA

Breen TW, Muir HA, Dwane P, Olufolabi A, Schultz J, Habib A, Millar S, Drysdale S, Spahn T. Initiation of labor analgesia with epidural bupivacaine: effect of parity. S.O.A.P. 2002, Hilton Head Island, SC

Barbeito A, Schultz J, Muir H, Dwane P, Olufolabi A, Breen T, Habib H, Millar S, Drysdale S, Spahn T ASA physical status classification – a pregnant pause. S.O.A.P. 2002, Hilton Head Island, SC

Poster Presentations Continued:

Helsley S, Muir H, Breen T, DeBalli P, Dwane P, Drysdale S, Habib A, Millar S, Schultz J, Olufolabi A. Cosyntropin for the treatment of postdural puncture headache S.O.A.P. 2002, Hilton Head Island, SC

Sanderson I, Gilbert W, Tucker P, Valles J, Breen T. The use of an anesthesia information management system (AIMS) and secure internet access in a departmental quality improvement (QI) program. ASA, 2002, Orlando, FL

Breen TW, Owen M, Sahin S. Kybele: Obstetric anesthesia outreach to Turkey 2004. S.O.A.P. 2005, Palm Desert, CA

Poster-Discussion Presentations:
Breen TW, Oriol NE. Incidence of late low back pain after childbirth is not influenced by anesthesia for labor or delivery. A.S.A., 1992, New Orleans, LA

Breen TW, McNeil T, Brooks R, Price BT. Informed consent for anesthesia research studies. C.A.S., 1999, Calgary, AB

Halpern SH, Muir HA, Breen TW, Campbell DC. Randomized controlled trials in obstetric anesthesia – what do the patients think? A.S.A., 1999, Dallas, TX

Oral Presentation of Research Results

Breen TW, Campbell DC, Kronberg JE, Nunn RT, Fick GH. The clinically relevant potencies of ropivacaine and bupivacaine: a PCEA study. ASA, 2000; San Francisco, CA

Breen TW, Janzen JA. Epidural fentanyl and lidocaine for cesarean section: when should fentanyl be given? C.A.S., 1991, Quebec City, PQ

Breen TW, Oriol NE. Incidence of late low back pain after childbirth is not influenced by anesthesia for labor and delivery. S.O.A.P., 1992, Charleston, SC

Groves P, Breen TW, Ransil B, Oriol NE. Incidence of long term back pain and its relationship with epidural anesthesia. S.O.A.P., 1994, Philadelphia, PA

Zimmermann DL, Breen TW, Fick G. Epidural fentanyl and gastric emptying in labouring parturients. S.O.A.P., 1995, Montreal, PQ

Yang T, Breen TW, Macarthur AJ. A comparison of 0.1 mg versus 0.25 mg intrathecal morphine for analgesia following cesarean section. C.A.S., 1998, Toronto, ON

Muir HA, Breen TW, Campbell DC, Halpern SH, Blanchard W. Intravenous patient- controlled fentanyl analgesia during labour. S.O.A.P., 1999, Denver, CO

Halpern SH, Muir HA, Breen TW, Campbell DC, Blanchard W. Neonatal effects of IV.PCA fentanyl labour analgesia. S.O.A.P., 1999, Denver, CO

Campbell DC, Halpern SH, Muir HA, Breen TW, Blanchard W. Epidural analgesia and fever in labour: a prospective randomized trial. S.O.A.P., 1999, Denver, CO

Breen TW, Campbell DC, Halpern SH, Muir HA, Blanchard W. Back pain after labour and delivery: a prospective randomized trial of epidural and IV PCA analgesia. S.O.A.P., 1999, Denver, CO

Breen TW, Yang T, Ramage B. Ronsky J. Epidural analgesia with ropivacaine and bupivacaine: a pilot study comparing bolus dose and infusion techniques using movement analyses. S.O.A.P., 2000, Montreal, PQ

Muir HA, Breen TW, Campbell DC, Halpern SH, Liston R, Blanchard W. A multicenter study of the effects of analgesia on the progress of labor. S.O.A.P., 2000, Montreal, PQ

Loitz-Ramage B, Ronsky J, Gildenhuys A, Maurer J, Breen T, Yang T, Zernicke R. Epidural analgesia with ropivacaine and bupivacaine: center of pressure analysis of stability. Combined Conference Societe de Biomechanique and Canadian Society of Biomechanics, Montreal, PQ, 2000

Published Abstracts:

Breen TW, Janzen JA. Fentanyl supplementation of epidural anaesthesia for cesarean section: comparison of two methods [abstract]. Can J Anaesth 1991; 38:A119.

Breen TW, Oriol NE. Incidence of late low back pain after childbirth is not influenced by anesthesia for labor or delivery [abstract]. Anesthesiology 1992; 77:A1044.

Breen TW, Oriol NE. Ambulatory epidural anesthesia for labor [abstract]. Anesthesiology 1992; 77:A1027.

Zimmermann DL, Breen TW, Fick G. The effect of epidural fentanyl on gastric emptying in labouring parturients [abstract]. Can J Anaesth 1995; 42:A18-B.

Giesinger CL, Halpern SH, Breen TW. Comparison of epidural fentanyl and lidocaine with subarachnoid sufentanil analgesia during labour [abstract]. Can J Anaesth 1997; 44:A16-B.

Breen TW, Dierenfield L, McNeil T. Obstetric Anaesthesia Survey 1997: Operative Anaesthesia [abstract]. Can J Anaesth 1998; 45:A11-B.

Breen TW, McNeil T, Dierenfield L. Obstetric Anaesthesia Survey 1997: Labour Analgesia [abstract]. Can J Anaesth 1998; 45:A12-A.

Yang T, Breen TW, Macarthur A. A comparison of 0.1 mg versus 0.25 mg intrathecal morphine for analgesia following cesarean section [abstract]. Can J Anaesth 1998; 45:A16-B.

Muir HA, Breen TW, Campbell DC, Halpern SH, Blanchard W. Intravenous patient- controlled fentanyl analgesia during labour [abstract]. Anesthesiology 1999; 90:A28.

Halpern SH, Muir HA, Breen TW, Campbell DC, Blanchard W. Neonatal effects of IV.PCA fentanyl labour analgesia [abstract]. Anesthesiology 1999; 90:A19

Campbell DC, Halpern SH, Muir HA, Breen TW, Blanchard W. Epidural analgesia and fever in labour: a prospective randomized trial [abstract]. Anesthesiology 1999; 90:A9.

Breen TW, Campbell DC, Halpern SH, Muir HA, Blanchard W. Back pain after labour and delivery: a prospective randomized trial of epidural and IV PCA analgesia [abstract]. Anesthesiology 1999; 90:A7.

Breen TW, Campbell DC, Halpern SH, Muir HA, Blanchard W. Patient controlled epidural analgesia without a background infusion: description and efficacy [abstract]. Anesthesiology 1999; 90:A46.

Breen TW, McNeil T, Brooks R, Price BT. Informed consent in obstetric anesthesia research studies [abstract]. Anesthesiology 1999; 90:A45.

Breen TW, McNeil T, Brooks R, Price BT. Informed consent in obstetric anesthesia research studies [abstract]. CJA 1999; 46:A59-B.

Halpern SH, Muir HA, Breen TW, Campbell DC. Randomized controlled trials in obstetrical anesthesia – what do the patients think [abstract]? Anesthesiology 1999; 91:A1068.

Muir HA, Breen TW, Campbell DC, Halpern SH, Liston R, Blanchard W. A multicenter study of the effects of analgesia on the progress of labor [abstract]. Anesthesiology 2000; 92:A23.

Breen TW, Campbell DC, Kronberg JE, Nunn RT, Fick GH. The clinically relevant potencies of ropivacaine and bupivacaine: a PCEA study [abstract]. Anesthesiology 2000; 93:A1101.

Campbell DC, Breen TW, Kronberg JE, Nunn RT, Fick GH. The motor blocking properties of ropivacaine and bupivacaine during labor analgesia [abstract]. Anesthesiology 2000; 93:A1044.

Helsley SE, Bell E, Breen TW, Penning D. Total spinal anesthesia requiring tracheal intubation in parturients: the association with failed epidural anesthesia [abstract]. Anesthesiology 2000; 93:A1078.

Breen TW, Campbell DC, Nunn R, Kronberg J, Halpern SH, Muir HA, Fick G. Epidural ropivacaine vs. bupivacaine: obstetric outcomes [abstract]. Anesthesiology 2001; 94:S.O.A.P. abstracts.

Campbell DC, Zwack R, Breen TW, Yip R. EC80-EC95 of bupivacaine and ropivacaine plus fentanyl for labor epidural analgesia

[abstract]. Anesthesiology 2001; 94:S.O.A.P. abstracts.

Breen TW, Tucker P. Increasing QI reporting by the use of compliance reports [abstract]. Anesthesiology 2001; 95:A1086.

Breen TW, Muir HA, Dwane P, Olufolabi A, Schultz J, Habib A, Millar S, Drysdale S, Spahn T. Initiation of labor analgesia with epidural bupivacaine: effect of parity [abstract]. Anesthesiology 2002; 96:P-53.

Barbeito A, Schultz J, Muir H, Dwane P, Olufolabi A, Breen T, Habib H, Millar S, Drysdale S, Spahn T. ASA physical status classification – a pregnant pause [abstract]. Anesthesiology 2002; 96:P-96.

Helsley S, Muir H, Breen T, DeBalli P, Dwane P, Drysdale S, Habib A, Millar S, Schultz J, Olufolabi A. Cosyntropin for the treatment of postdural puncture headache [abstract]. Anesthesiology 2002; 96:P-107.

Sanderson I, Gilbert W, Tucker P, Valles J, Breen T. The use of an anesthesia information management system (AIMS) and secure internet access in a departmental quality improvement (QI) program [abstract]. Anesthesiology 2002; 96:A525.

Campbell DC, Breen TW, Halpern S, Muir H, Nunn R. Determination of the efficacy of PCEA alone compared to PCEA + CIEA using ambulatory epidural labor analgesics [abstract]. Anesthesiology 2004; 100; SOAP A11.

Campbell DC, Breen TW, Halpern S, Muir H, Nunn R. Randomized controlled trial comparing PCEA vs PCEA + CIEA on labor outcome using ambulatory epidural analgesics [abstract]. Anesthesiology 2004; 100; SOAP A20.

Habib AS, Muir HA, White WD, Spahn T, Breen TW, the Duke Women's Anesthesia Research Group. Intrathecal morphine for analgesia following postpartum bilateral tubal ligation [abstract]. Anesthesiology 2004; 100: SOAP A90.

Melnick AH, Olufolabi AJ, Muir HA, Breen TW, Habib AS. Introduction of automated anesthesia record keeping (hardwired and wireless) on a labor and delivery unit [abstract]. Anesthesiology 2004; 100: A106.

Habib AS, Breen TW, Jiao K, Gan TJ. A comparison of ondansetron and promethazine for the treatment of established PONV in patients who received prophylaxis with ondansetron. Anesthesiology 2004; 101: A-76.

Campbell DC, Breen TW, Halpern SH, Muir HA, Nunn R. RCT comparing the effect of PCEA versus PCEA + PIEA on labor outcome. Anesthesiology 2004; 101: A-1204.

Campbell DC, Breen TW, Halpern SH, Muir HA, Nunn R. RCT comparing the efficacy of PCEA alone versus PCEA + PIEA for ambulatory labor analgesia. Anesthesiology 2004; 101: A-1210.

Habib AS, Breen T, Chukwurah CN, Gan TJ. Dose response of promethazine for the treatment of postoperative nausea and vomiting. Anesthesiology 2004; 101: A47.

Gan TJ, Jiao K, Habib, A, Breen T. Timing of administration of ondansetron for the prevention of postoperative nausea and vomiting. Anesthesiology 2004; 101: A49.

Breen TW, Owen M, Sahin S. Kybele: Obstetric anesthesia outreach to Turkey Anesthesiology 2005; 102: A94.

Peer Reviewed Case Reports

Breen TW, Haigh JD. Continuous suprascapular nerve block for analgesia of scapular fracture. Can J Anaesth 1990; 37:786-8.

Breen TW, Janzen JA. Pulmonary hypertension and cardiomyopathy: anaesthesia for caesarean section. Can J Anaesth 1991; 38:895-9.

Peer Reviewed Journal Publications
Breen TW, Janzen JA. Epidural fentanyl and lidocaine for caesarean section: when should fentanyl be given? Can J Anaesth 1992; 39:317-22.

Breen TW, Shapiro T, Glass B, Foster-Payne B. Oriol NE, Epidural anesthesia for labor in an ambulatory patient. Anesth Analg 1

Q37

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

All physicians in California are required to obtain and document CME. Both ASMG and hospital medical staff require proof ongoing CME. One or more members of the department attend almost every SOAP meeting and share information learned with those unable to attend. Some attend the virtual SOAP meeting

All members of our department are encouraged to join SOAP. All are encouraged to attend regular SOAP meetings and/or other educational activities related to obstetric anesthesiology.

Our department has a regular monthly meeting covering administration and education topics.

One of our members, Dr. David Gambling, sits on the SOAP Board of Directors, and ensures that we are all aware of pertinent issues in Obstetric anesthesiology.

Patients with medical problems have care plans developed by multidisciplinary teams and those care plans are shared.

We have periodic M&M rounds as cases are identified that are worth discussing. This M&M will soon include the QA audit of all general anesthetics for Cesarean deliveries.

Pertinent SOAP education and journal articles or other publications are distributed to all. Dr. Joanne Douglas' monthly OB anesthesia update is distributed to all.

Our hospital has quarterly OB GYN Grand Rounds that most attend.

Educational information is shared with all who work at SMB, not just the regular OB Team members (email, agendas, minutes, zoom attendance options, etc.).

All OB Team L&D anesthesiologists sit on one or more hospital and/or ASMG committees

Examples of practice improvements since our initial Center of Excellence designation include:
- We now round on all vaginal delivery patients the day after delivery
- We switched from PCEA to PIEB
- We instituted risk stratification for postoperative respiratory monitoring
- We have increased our use of TEG
- We updated our MTP for earlier use of fibrinogen (cryoprecipitate) for massive OB hemorrhage

Q38

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

Educational information is shared with all who work at SMB, not just the

Q39

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

We have a regular monthly department meeting that includes general administration, clinical updates, etc.

We have a quarterly M&M meeting that will soon become a monthly meeting including review of all general anesthesia for Cesarean section cases.

Q40

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

We have one dedicated, board-certified anesthesiologist, with expertise in obstetric anesthesia, providing coverage to the L&D unit 24/7. Day shift is defined at 07:00 – 18:30. Night shift is 18:30 – 07:00.

Monday-to-Friday Days:

The L&D anesthesiologist mainly provides care to the L&D unit including epidural placement and management, consultation, difficult IV access, etc. That anesthesiologist also rounds on all vaginal delivery patients from the day before, manages questions from the Pre-anesthesia clinic, sees consultations as needed, deals with issues (e.g., PDPH) as needed, and maintains good communication with the nurses and OBs covering the unit that day.

The anesthesiologist who provides anesthesia for each Cesarean delivery patient sees her/his postoperative patients the day after surgery (or arranges for another anesthesiologist to see them). Thus, all OB patients are seen the day after delivery.

Five (5) anesthesiologists are scheduled in the OR each day. Three (3) are scheduled 07:00 – 17:00 and two (2) are scheduled 07:00 – 18:30. These anesthesiologists provide anesthesia for all scheduled cases and most add on cases (CS, D&C, laparoscopy, etc.) and are the back-up anesthesiologists to L&D anesthesiologist until 18:30. Surgical cases are mostly OB and GYN with some breast surgery, urology and occasional general surgery. The majority of surgical cases are CS, D&C, hysteroscopy, laparoscopy, robotic-assisted laparoscopy and various GYN ONC.

The L&D anesthesiologist provides OR anesthesia for CS to women with pre-existing epidurals and in emergency cases when another anesthesiologist is not immediately available.

Many OB GYN surgeries are relatively brief. With 5 OR anesthesiologists, an anesthesiologist is usually available every 15-20 minutes to respond to L&D if the L&D anesthesiologist is in the OR.

At our hospital, the average skin-to-skin time for a CS is 30-40 minutes. Consequently, the average CS anesthesia time is 60-70 minutes.

Weekend and Holiday Days:

The scheduled OB anesthesiologist covers L&D and non-general OR cases (except D&C). These Or cases include CS, retained placenta, vaginal or cervical lacerations, management of uterine atony, etc.

The second call anesthesiologist is called for general anesthesia cases such as laparoscopy (ectopic pregnancy, ovarian cyst), take back laparotomy (hemorrhage), or any situations when a second anesthesiologist is needed. We have a low threshold for calling in the back-up anesthesiologist to assist with epidural analgesia and/or Cesarean sections when L&D is busy.

Night Call:

One regular OB anesthesiologist is assigned night call each night and provides coverage to the L&D unit and non-general anesthesia OR cases (and D&C) as available. The daytime OB anesthesiologist is the second call anesthesiologist each night.

Q41

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

All procedures performed by an anesthesia resident are supervised.

Q42

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

On Monday to Friday weekdays, there are ~5 anesthesiologists assigned to surgical cases in the OR plus one anesthesiologist assigned to cover the L&D unit. The majority of OR cases are relatively short (D&C, hysteroscopy, CS) so one of the 5 OR anesthesiologists is almost always available to help the L&D anesthesiologist within 15-30 minutes of a request for help.

Of these 5 anesthesiologists, 3 are assigned to work 07:00 – 17:00 and two are assigned 07:00 – 18:30. Any individual who finishes before their assigned finish time remains “on the hook” and must return to work within 30 minutes, if needed. In addition, should assigned OR cases run past 18:30, the anesthesiologist assigned to the case is required to stay and finish the case.

The L&D anesthesiologist each day (07:00 – 18:30) is the back-up anesthesiologist each night. On weekends and holidays, the L&D night anesthesiologist is the back-up anesthesiologist during the day. The back-up anesthesiologist is expected to respond to the L&D unit or the OR within 30 minutes of being called in.

Q43

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

The third floor of the hospital is split between 22 LDR rooms on one side and the Preoperative admission area, PACU and 9 ORs on the other side.

Our L&D unit functions independently from the OR (different staffs). The L&D nurse's role in the OR is limited to obtaining and documenting the FHR before delivery and providing care to the baby after delivery.

We have Anesthesia Techs, Monday to Friday, 07:00 – 18:00. The ATs stock our anesthesia equipment, check our anesthesia machines and equipment, assist with line placement and difficult intubation, and with cell salvage, when indicated. Our ATs are dedicated to our hospital operating rooms. Anesthesia techs are not available to help at night or on weekends or holidays. OR nurses assist the anesthesiologists when ATs are not available.

We have OR nurses and OR techs dedicated to the OR 24/7. Outside of the regular Monday-to-Friday hours, one OR RN and 2 ORTs are in hospital and immediately available each evening and weekend and holiday days and nights. In addition, there is always a back-up call team available that responds within 30 minutes.

There is a dedicated OR nurse and ORT available for Stat cases each weekday.

The L&D unit has a charge nurse and resource nurse plus many nurses working each day. Core staffing for L&D is 20 nurses but nurses may be cancelled or flexed off due to variable census numbers. The resource nurse responds to all deliveries and helps L&D nurses as needed. The charge nurse assists when the resource nurse is busy (e.g., two deliveries at the same time, etc.).

We have a large NICU (84 beds). A team from the NICU is available to attend all deliveries and does attend ~50% of deliveries.

The triage area (on the second floor) also has a charge nurse and several nurses. Core staffing for Triage is 3 nurses

Finally, there is an Administrative Liaison (AL) nurse for the hospital who can help with staffing for any emergency assistance as needed throughout the hospital.

Page 6: Equipment, Protocols and Policies

Q44

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

We follow obstetric hemorrhage recommendations from the California Maternal Care Quality Collaborative.

All pregnant patients presenting for admission to the hospital have a hemorrhage risk assessment completed. The admitting nurse completes the hemorrhage risk assessment tool by selecting appropriate responses for each risk factor. A total risk score is automatically calculated by the tool, which places the patient into a risk category: low and medium, high risk, and high risk with positive antibody screen. The hemorrhage risk assessment tool involves an auto-fire order function for orders listed below based on risk score and category:

INTERVENTION based on RISK ASSESSMENT
- Low and Medium Risk Factors: Hold Clot (ABO/Rh)
- High Risk Factors selected: Type and Screen
- High Risk Factors selected with POSITIVE antibody screen: Type and Cross per OB Hemorrhage risk factor orders

Patients are re-assessed every 12 hours while in labor, immediately after delivery and postpartum up to 24 hours after delivery. This allows for new risk factors that arise during the intrapartum and postpartum periods to be included in subsequent assessments, leading to an increase in risk score and change in risk category.

In addition, the Postpartum Immediate Hemorrhage order set includes recommended first line and second line uterotonics agents, lab tests, and blood product transfusion orders. The medications are bundled into a virtual kit in the Pyxis medication stations throughout the hospital and easily accessible through an override process to prevent delays in obtaining medications.

Hemorrhage supplies are immediately available in a hemorrhage cart found on the 3rd floor in labor and delivery. The supply cart contains sterile instruments, uterine balloon tamponade kits, IV fluids and blood administration sets. A measurement scale is on top of the cart for quantitative blood loss measurements. Recently Sharp Mary Birch trialed the Jada, a low-level suction device to control uterine bleeding due to uterine atony. The trial was very successful, and the hospital is moving forward with purchase of the product.

Hemorrhage Drill Checklist 2022

Nurse 1 Task Complete
Perform Hemorrhage Risk Assessment upon admission, Q shift and at delivery:

A. Low Risk Factors (should have current Hold Clot on LDR Orders):
- Singleton pregnancy
- No history of PPH
- No known bleeding disorder
- No previous uterine incision
- ≤ 4 previous vaginal births

B. Medium Risk Factors (should have Type and Screen- see below)

- Prior cesarean(s) delivery or uterine surgery
- Multiple gestation
- Greater than 4 vaginal births
- Chorioamnionitis

- History of 1 previous postpartum hemorrhage
- Platelets 50-100,0002
- Hematocrit <24% (Hgb < 8)
- Polyhydramnios (AFI >30)
- Gestational age <37 or >41 weeks admitted for intrapartum care (e.g. IOL, labor/C-section)
- Severe Preeclampsia
- Prolonged labor/oxytocin administration of >24 hrs
- Fetal demise

C. High Risk Factors (should have Type & Cross):
- Placenta previa, low lying placenta
- Suspected/known placenta accreta spectrum
- Abruption or active bleeding (greater than show)
- Known coagulopathy
- History of 2 or more postpartum hemorrhages
- Platelets <50,000
- History of blood transfusion 2 (intrapartum care- IOL, labor, c/section)
- Positive antibody screen

When Hemorrhage is Recognized:

A. Call for help; stay at patient's bedside
B. Assess uterine tone. Perform fundal massage if indicated
C. Apply oxygen via non-rebreather mask to maintain O2 Sat >95%
D. Place patient in Trendelenberg position with head of bed down and foot of bed elevated 30 degrees
E. Perform Vital Sign assessment every 5 minutes
- BP
- HR
- RR
- O2 Sat

Nurse 2

Task Complete

A. Quantify blood loss by weight (1 gm= 1mL)
- Pad count
- Save chux

B. Document blood loss in EMR: Postpartum Assessment> Postpartum Lochia Assessment>Measured Blood Loss

All Members of the Team

(As directed by Primary RN or CRN) Task Complete

A. Bring Hemorrhage Cart to room
B. Assure IV access with large bore catheter (16 g. preferred)
- Consider 2nd IV if blood loss > 1000mL

C. Fluid bolus of 500mL for fluid replacement and/or infusion of IV pitocin, as appropriate and per physician order
D. Assess bladder status and insert urinary catheter as indicated to prevent uterine distention
E. Activates the WHS Postpartum Hemorrhage Immediate Careset for:
- Medications
- Labs- Type and cross (if not done already)!
- Blood products & transfusion orders
- Fluids

F. Consider administering medications to stimulate uterine contraction if patient is postpartum
- Methergine (0.2 mg IM)
- Hemabate (250 mcg IM)

- Pitocin 40 units
- Tranexamic Acid (TXA) (1000mg IVPB once, over 10 minutes)
- Misoprostil (800 mcg PO-1000 mcg SL only to be used for patients with hypertension or asthma; route of administration changed due to slow onset of action from PR route)

G. Draw labs as ordered
- CBC
- Coagulation Panel
- Type & Cross (if not done already)

H. Discuss rationale for the following management:
- Volume expanders
- Blood replacement
- Vasopressors

I. Prepare for surgical intervention
- Delivery
- Insertion of Jada or Bakri Balloon
- Interventional Radiology
- Repair of lacerations/evacuation of hematoma
- Hysterectomy

J. Activate the Massive Transfusion Protocol

- Calls Lab and initiates the “Keep Ahead” orders
- Initiate orders in Massive Transfusion Protocol in the EMR as soon as physically able
  - Number and time of blood product administration
  - Including Blood Products into Interactive View, Intake and Output, Transfusions, RBCs
- Review expectation of 4:4:1 components

K. Perform and document Sponge Count and RF Assure scan
- Order X-ray if unable to perform count or if discrepancy in count

L. Communicate to team member status of the following:
- Blood loss quantification (e.g. 500 mLs, 750 mLs)
- Meds given
- Amount of fluids given

Debriefing
Who was present at the drill?

What went well?
What can improve?

Q45

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

The massive transfusion protocol (MTP) is a procedure for replacing blood and blood products in patients with massive hemorrhage. MTP packs are prepared with product ratios of 4 units red blood cells, 4 units fresh frozen plasma, and 1 plateletpheresis. Cryoprecipitate is included with the third MTP pack (earlier if requested earlier). The MTP packs are obtained from the blood bank by a facility transporter, who brings each pack in a cooler bag to the patient bedside and the products are stored in a mobile temperature monitored refrigerator at the patient's bedside until the MTP is stopped. The blood bank will continue to prepare packs in previously mentioned product ratios until they are notified to stop the MTP.

The blood bank on campus is located within Sharp Memorial Hospital (SMH), adjacent to SMBHWN. There are six (6) units of O-negative red blood cells outside the OB operating rooms and readily accessible needed. The O-negative units are kept in a monitored blood refrigerator. When any units are used, a nurse notifies the blood bank so that the number of units used will be replaced (to maintain a count of six units).

Status
Active
PolicyStat ID
8789615
Origination Last Approved Effective Last Revised Next Review
9/1/2010 2/28/2022 2/28/2022 2/28/2022 2/27/2025
Owner Policy Area Applicability
References
Jennifer Hites Trauma
SCV SGH SMB SMH
SCV, SGH, SMB, SMH, blood, policy & procedure
Massive Transfusion Protocol, 35177.99
A. Massive Transfusion - Replacement of blood loss in patients who are hemodynamically unstable COPY
B. Massive Hemorrhage - Acute bleeding requiring a replacement of >1 total blood volume in 24 hours, >50% loss of blood volume in 4 hours (adult blood volume is approximately 70 mL/kg), or loss of >150 mL/minute.
C. Massive Transfusion Ratio - Infusion of red blood cells, thawed plasma, and platelets at ratio of 1:1:1.
D. Massive Transfusion Pack (MT Pack) - Red Blood Cell, Thawed Plasma, Platelets, and Cryoprecipitate issued at same time for the patient.
E. Plateletpheresis - Removal of blood from a donor with replacement of all blood components except the platelets using an apheresis device. One unit of Plateletpheresis platelets is equivalent to six whole blood derived platelets.
1. Trauma and Non-Obstetric patients: Defined as 1 unit plateletpheresis to be administered with each sequence of 8 units of blood and 8 units of plasma. Lab will disperse 1 unit plateletpheresis with every other MT pack.
2. Obstetric patients: Defined as 1 unit of plateletpheresis to be administered with each sequence of 4 units of blood and 4 units of plasma. Lab will disperse 1 unit of plateletpheresis with every MT pack.
F. Pooled Cryoprecipitate - One (1) unit of pooled cryoprecipitate is recognized as 4-5 units of
I. PURPOSE:
To develop a reliable expeditious, appropriate and efficient method of blood and blood products administration in patients with massive hemorrhage.
II. DEFINITIONS:
with potential of exsanguination if aggressive intervention is not performed.
Massive Transfusion Protocol, 35177.99. Retrieved 7/14/2022. Official copy at http://sharp-healthcare.policystat.com/policy/8789615/. Copyright © 2022 Sharp HealthCare
Page 1 of 9

cryoprecipitate. To meet the massive transfusion ratio goal, two (2) units of pooled cryoprecipitate will be administered. [2 units of pooled cryoprecipitate = 8-10 units of cryoprecipitate]
G. Sharp Memorial Hospital - SMH III. TEXT:
Principles of Practice:
Blood products will be infused with the goal of adhering as close as possible to the Massive Transfusion Ratio.
Trauma and non-Obstetric patients: Since platelet are issued as Plateletpheresis, the goal ratio will be 8 units of Red Blood Cells: 8 units of plasma: 1 unit of plateletpheresis, issued as MT Packs as noted in the table. 8-10 (2 units) pooled cryoprecipitate, should be given when Fibrinogen is <150 Or patient has received 16 or more units of PRBC.
Obstetric patients: Protocol will follow the California Maternal Quality Care Collaborative Hemorrhage guidelines which specify a higher ratio of platelets to RBC. The goal ratio will be 4 units of packed red blood cells: 4 units of plasma: 1 unit of plateletpheresis. 8-10 cryoprecipitate, pooled, will be issued with the second MT PACK, but may be ordered earlier if indicated.
COPY

IV. PROCEDURE:
PROCEDURE:
RESPONSIBILITY
A. Initiate massive transfusion protocol and notify the Blood Bank by phone.Initiate and sign the Massive Transfusion PowerPlan in the electronic medical record.
A. Responsible Treating Physician/ Advanced Practice Provider
B. Notify the Blood Bank by phone. Provide the following information: Patient name, age, sex, medical record number. MT Pack is prepared rapidly. Nursing unit blood runner should be immediately designated to retrieve the first pack and return to the blood bank as needed to pick up subsequent packs until MT protocol has been discontinued by surgeon/physician.
B. Nursing Unit
C. Unless ordered otherwise, the most appropriate blood immediately available will be used. (Blood typed and crossed, type specific, then O negative).
C. Blood Bank Personnel
D. 4 units of plasma will be immediately thawed as rapidly as D. Blood Bank Personnel possible.
COPY
E. 4 units of red blood cells, 4 units of plasma and 1 E. Blood Bank Personnel / plateletpheresis unit will be made available as rapidly as Transport personnel possible for pickup and delivery to the patient's bedside.
F. It will be the responsibility of the blood bank personnel to have F. Blood Bank Personnel / available for pick up 4 units of red blood cells, 4 units of plasma Responsible Treating Physician and 1 plateletpheresis unit at all times until the surgeon/
physician makes the request to "terminate massive transfusion
protocol and notify the blood bank."
G. The actual pickup and delivery of blood products is the G. Nursing Unit responsibility of the unit where the patient is being treated. A
transfusion pickup slip with patient name and Medical Record
number is required for each pickup.
H. 4 units of red blood cells, 4 units of plasma and 1 plateletpheresis unit will be maintained at the bedside until the surgeon terminates the protocol. The plateletpheresis unit will be returned to the blood bank if it is not going to be transfused. For immediate transfusion at the bedside, 4 units of red blood cells and 4 units of plasma will be stored in a Blood Bank validated cooler. At SMMC, if not in a Blood Bank validated cooler, the red blood cells and plasma units will be stored in SMMC Surgery, Trauma Room, or SMBHWN blood bank monitored refrigerator. If red blood cells and plasma units remain at room temperature for greater than 10 minutes and will not be transfused within 4 hours, the unused units must be returned to the blood bank for disposal. Plateletpheresis will be maintained at room temperature.
H. Nursing Unit
FOLLOW-UP

I. Responsible Treating Physician/

I. If not completed at onset, the surgeon will initiate and sign the Massive Transfusion PowerPlan in the electronic medical record as soon as physically able to do so. See Attachment 1 for example of PowerPlan

J. MTP activations will be reviewed for appropriateness, timely response, blood product usage, process improvement, etc.. The Senior Blood Bank Specialist/blood bank leads will review all MTP activations according to blood bank policy, Quality Assurance for the Transfusion Service. Post MTP huddles may be organized with blood bank and clinical staff with the goal of improving the process as needed. Reference "Quality Assurance for the Transfusion Service."

Advanced Practice Provider

J. Senior Blood Bank Specialist/ Blood Bank Leads

K. SMH –Trauma MTP activations to be reviewed by trauma medical director, trauma program manager, and the appropriate blood bank personnel. Reviews will be conducted periodically but no less frequently than quarterly of the Trauma M&M and Trauma Committee as well as the Patient Blood Management.

K. Trauma Medical Director/ Trauma Program Manager/

Blood Bank Personnel

COPY

L. This protocol will be revised as needed, as frequently as L. Trauma Service necessary to maximize patient outcomes and appropriate blood

and blood product utilization.

V. MT Table Guides:

Trauma and Non-Obstetric patients

•

Obstetric Patients

•

Obstetric

patients

Department

First MT Pack

Second MT Pack

Third MT Pack

Fourth MT Pack

Trauma and Non-Obstetic Patients

4 RBC

4 RBC

4 RBC

4 RBC

4 Plasma

4 Plasma

4 Plasma

4 Plasma

1 Plateletpheresis

0 Plateletpheresis

1 Plateletpheresis

0 Plateletpheresis 8-10 Cryoprecipitate

Department
First MT Pack
4 RBC
Second MT Pack
4 RBC
Third MT Pack
4 RBC
Fourth MT Pack
4 RBC
4 Plasma 4 Plasma 4 Plasma 4 Plasma
COPY
1 1 Plateletpheresis 1 1
Plateletpheresis 8-10 Cryoprecipitate
Plateletpheresis Plateletpheresis
Recommended Laboratory Testing
• Baseline laboratory values should be drawn upon patient arrival: Complete Blood Count (CBC), Complete Metabolic Panel (CMP), Protime (PT), Partial Thromboplastin Time (PTT), Fibrinogen,
and TEG and continue every hour after the initial presentation until patient's bleeding is largely controlled and patient is clinically stabilized for goal directed transfusions. Intraoperative and/or bedside visual inspection should be the prime consideration in determining the need for the ongoing transfusion of blood or blood products.
• Consideration to use TEG for goal directed transfusion.
VI. REFERENCES:
A. "Hemostatic Rescusitation During Surgery Improves Survival in Patients With Traumatic -Induced Coagulopathy", The Journal of Trauma, Injury, Infection and Critical Care. Vol. 67, Number 1, July 2009. Duchesne et al.
B. California Maternal Quality Care Collaborative (CMQCC) Obstetrical Hemorrhage Care Recommendations (2010), CMQCC Hemorrhage Taskforce. www.CMQCC.org
C. Department of Defense Joint Trauma System Damage Control Resuscitation Guidelines. (2019). Damage Control Resuscitation (CPG ID:18). Retrieved from https://jts.amedd.army.mil/assets/docs/cpgs/ Damage_Control_Resuscitation_12_Jul_2019_ID18.pdf

VII. ORIGINATOR:
Trauma Service
VIII. LEGAL REFERENCES:
None
IX. ACCREDITATION:
None
X. CROSS REFERENCES:
A. BB 1141
XI. APPROVALS:
A. SMH Trauma Committee - 06/10; 4/12; 12/21
B. SMH Critical Care Committee – 07/10; 09/21
C. SMH Emergency Services Committee: 06/10; 12/21 D. SMH Ortho Supervisory – 07/10; 01/22
E. SMH Surgery Supervisory - 06/10; 02/22
COPY
F. SMH Pharmacy & Therapeutics – 07/10; 10/21
G. SMH Anesthesia Committee approval 02/22
H. SMB Pharmacy & Therapeutics - 09/21
I. SGH Pharmacy & Therapeutics - 09/21
J. SCV Pharmacy & Therapeutics - 09/21

K. Nursing Policy & Procedure Committee – 08/10
L. System Policy & Procedure Steering Committee - 09/10
M. SMH-Lab Medical Director – 09/10; 4/12; 6/13; 09/21
N. SCV -Lab Medical Director – 08/2013; 09/21
O. SGH Lab Medical Director - 08/2013; 09/21
P. Blood Bank Subgroup – 6/2013; 09/21
Q. SMBHWN OB Supervisory Committee—4/5/12; 08/13; 11/21
R. SGH OB Supervisory Committee – 10/2013; 01/22
S. SGH Anesthesia Committee - 01/22
T. SGH Surgery Supervisory - 01/22
U. SGH Emergency Medical Services - 01/22
V. SGH Critical Care Supervisory - 01/22
W. SGH Ortho Supervisory - 02/22

X. SCV OB Supervisory Committee – 9/2013; 02/22
Y. SCV Surgery Supervisory - 02/22
Z. SCV Emergency Services Committee - 02/22
AA. SCV Critical Care Committee – 02/2022
AB. System Trauma Leadership - 06/17; 12/21
XII. REPLACES:
None
XIII. HISTORY:
System #35177.99; originally dtd 09/10 Reviewed/Revised: 05/12; 03/14; 06/17; 10/2020
COPY

A. Attachments
Massive Transfusion Powerplan
Type the word Massive. Select Massive Transfusion Protocol
Blood Product and Transfusion orders are preselected. Emergency Regulatory Requirement is preselected.
COPY
Attachments

A: Massive Transfusion Powerplan Image 01
Image 02
Approval Signatures
Step Description
Administrator Owner
Approver
Karen Whitten: Policy & Procedure Coord
Jennifer Hites: Mgr Trauma
Date
2/28/2022 2/25/2022

2/23/2022 2/23/2022

COPY

Q46

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

A Ranger fluid warmer is used for most transfusions. A Belmont rapid infuser is used when large volume blood loss occurs and rapid replacement and warming of blood products or fluid is needed. The operating room and post anesthesia care unit (PACU) each have a designated Belmont device for their unit, and both are easily accessible to the labor and delivery unit.

Q47

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

In L&D, obstetric hemorrhage is documented by weighing sponges and pads (quantitative). Optical scanners have been evaluated and found less helpful in our practice.

In the OR, blood loss is measured by the volume in suction cannisters and estimation of blood loss on sponges.

Point-of-care testing in the OR is readily available 24/7 via HemoCue and iStat to gu9ide administration of packed red blood cells.

Every case where a patient received four of more units of blood products is reviewed.

Q48

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

Nursing staff start most intravenous lines in L&D and the preoperative holding area.

L&D is training registered nurses to utilize ultrasound for placement of difficult peripheral IVs. The Vascular Access Service team is available for PICC line placement, dressing changes and removal.

Anesthesiologists generally place the difficult IVs in L&D and the Preoperative holding area. Three ultrasound machines are dedicated to the Anesthesia Department. When peripheral IV access is extremely difficult, a CVC is placed. CVC lines can be placed in an L&D room, PACU or OR. An anesthesia tech or OR nurse assists with placement of a CVC.

On postpartum units, a core group of RNs who are more skilled, attempt to start difficult IVs. The nurses are learning to use a vein finder ultrasound. L&D nurses help start some difficult IVs as does the IV Team from SMH when possible. Anesthesiologists are the last resort and assist when asked and able to help.

Q49

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

Readily available Point-of-care (POC) tools to assess hematocrit include the HemoCue and iStat in the Operating Rooms. OR nurses can run these tests in PACU and L&D when needed. PACU nurses run HemoCue when needed.

Postpartum units have a HemoCue that is available to obtain a quick HGB at the bedside.

Thromboelastography (TEG) is available in the coagulation lab. A blood sample is sent to the lab for processing. The TEG tracing can be viewed in real time via the TEG app in Cerner. We do not have POC TEG or ROTEM.

Q50

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

Cell salvage is readily available Monday-to-Friday days in the OR (when we have anesthesia techs). Cell salvage is routinely used for placenta accreta spectrum (PAS) patients undergoing Cesarean hysterectomy. Cell salvage may be available on nights, weekends, and holidays, if an anesthesia tech from SMH is able to come to SMBHWN. We have done this on occasion.

Patients who refuse banked blood products are screened by their obstetrician prior to hospital admission. Patients identified with anemia during pregnancy may be scheduled to receive parenteral iron infusions in the OB triage area. The obstetricians, triage nurses and pharmacists work closely together to administer parenteral iron by policy. A pharmacist is responsible for reviewing outpatient baseline laboratory tests results, recent and current iron therapy and communicating with the provider about concerns or when patients do not meet criteria. Hemoglobin optimization is particularly important for patients who refuse banked blood.

When a patient who refuses banked blood products is admitted to the hospital, a blood refusal band and sign are provided. Part of the intake process is documenting in the electronic medical record what blood products the patient will receive. When an anesthesiologist sees a patient who refuses banked blood, the options for management are reviewed. Should the patient be transferred to the OR, the patient’s wishes are again reviewed and documented.

Q51

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

Patients who received 4 or more units of blood products, or who are transferred to ICU within 24 hours of delivery, are reviewed monthly by the interdisciplinary sentinel event case review committee. Opportunities for improvement (if any) are identified. If needed either an Apparent Cause Analysis or Root Cause Analysis is conducted with our performance improvement specialists.

Q52

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

All pregnant patients presenting for admission to the hospital have a hemorrhage risk assessment completed. The admitting nurse completes the hemorrhage risk assessment tool by selecting appropriate responses for each risk factor. A total risk score is automatically calculated by the tool, which places the patient into a risk category: low and medium, high risk, and high risk with positive antibody screen. The hemorrhage risk assessment tool involves an auto-fire order function for orders listed below based on risk score and category:

INTERVENTION based on RISK ASSESSMENT

- Low and Medium Risk Factors: Hold Clot (ABO/Rh)
- High Risk Factors selected: Type and Screen
- High Risk Factors selected with POSITIVE antibody screen: Type and Cross per OB Hemorrhage risk factor orders

Patients are re-assessed every 12 hours while in labor, immediately after delivery and postpartum up to 24 hours after delivery. This allows for new risk factors that arise during the intrapartum and postpartum periods to be included in subsequent assessments, leading to an increase in risk score and change in risk category.

The Obstetric Hemorrhage Toolkit involves risk stratification (including checklists) and algorithms such as the Massive Transfusion Protocol. Each OR has white board serving as a checklist for MTP use and documenting blood product administration.

Q53

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

Nursing guidelines of care for Placenta Accreta Spectrum (PAS):

Patients with suspected PAS disorder are usually identified by their primary obstetrician and referred to a Maternal Fetal Medicine specialist for ultrasound or MRI confirmation of the diagnosis. Once PAS is confirmed or highly suspected, GYN Oncology is consulted and a plan for delivery is prepared. An anesthesiologist consults on admitted patients awaiting surgery.

Our anesthesia practice for Cesarean section +/- Hysterectomy is to start with two good IV lines and a spinal or CSE anesthetic. We may complete a Cesarean hysterectomy with this approach alone (highly skilled GYN ONC surgeons) or convert to general anesthesia when needed. Patients are informed that they may need an arterial line, CVC, general anesthesia, blood products and ICU care after surgery. Cell salvage is routinely used.

Q54

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

Each operating room has short and long handled laryngoscopes and size 3 & 4 curved and straight blades. Each OR has stylets and bougies available and size 6 & 7 endotracheal tubes. Size 3 & 4 LMAs are in each anesthesia machine.

We have both Glidescope (2) and CMAC (3) video laryngoscopes readily available and a Storz fiberoptic bronchoscope and tower.

We have a difficult airway cart in the Operating Rooms adjacent to L&D. The difficult airway cart also contains LMA Supreme and Fastrach (intubating) LMAs, a Melker cricothyrotomy kits and a Cooke retrograde intubation kit.

We do not have an obstetric-specific difficult airway protocol on the difficult airway cart or in the operating rooms.

Each L&D epidural cart (2 of them) has a short and long laryngoscope handle, size 3 & 4 curved and straight blades, stylets, and size 6 & 7 endotracheal tubes. There are size 3 & 4 LMAs and an Ambu bag. Propofol and succinylcholine are also in each cart. Wall oxygen is available in every L&D room and OR. Anesthesia machine suction is available in every OR. Wall suction is available in every LDR and operating room.

A trauma surgeon is available 24/7 at SMH to provide emergency surgical airway access, if needed.

Q55

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

No

Q56

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

Wall suction is available in every LDR and operating room. A bag-valve mask device is on the epidural carts and crash cart and immediately available to each LDR. Bag-mask valve devices are in each OR (in addition to anesthesia machines)

Q57

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

A trauma surgeon is available 24/7 at Sharp Memorial Hospital to provide emergency surgical airway access, if needed. Sharp Memorial Hospital and Sharp Mary Birch Hospital for Women and Newborns are physically independent hospitals both on the Sharp Metropolitan Campus and connected by a walkway.

Q58

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

Intralipid 20% bags are readily available in the Pyxis stations of our OR, L&D, and PACU. A copy of the ASRA LAST algorithm is attached to each bag of intralipid.

APPENDIX B to #43169.01: Lipid Rescue Protocol Bag Wrapper; ASRA Guidelines
PLEASE KEEP THIS PROTOCOL ATTACHED TO THE Lipid 20% BAGS

AMERICAN SOCIETY OF REGIONAL ANESTHESIA AND PAIN MEDICINE

Checklist for Treatment of Local Anesthetic Systemic Toxicity
The Pharmacologic Treatment of Local Anesthetic Systemic Toxicity (LAST) is Different from Other Cardiac Arrest Scenarios
❑ Get Help
❑ Initial Focus
❑ Airway management: ventilate with 100% oxygen
❑ Seizure suppression: benzodiazepines are preferred; AVOID large doses of propofol in patients that are hemodynamically unstable
❑ Alert the nearest facility having cardiopulmonary bypass capability
❑ Management of Cardiac Arrest
❑ Basic and Advanced Cardiac Life Support (ACLS) will require adjustment of medications and perhaps prolonged effort
❑ REDUCE individual epinephrine doses to ≤1 mcg/kg
❑ AVOID vasopressin, calcium channel blockers, beta blockers
❑ For ventricular arrhythmias, amiodarone is preferred; avoid use of local anesthetics (lidocaine or procainamide)
❑ Lipid Emulsion (20%) Therapy (see dosing chart)
❑ Continue monitoring for at least 4-6 hours after a cardiovascular event or at least 2 hours after a limited CNS event Intralipid 20% Dosage Chart

WT (use IDEAL body wt)	BOLUS (1.5 mL/kg)	INFUSION (0.25 mL/kg/minute)	MAX TOTAL VOLUME 12 mL/kg
Kg	mL	mL/HOUR	mL
20	30	300	240
25	38	360	300
30	45	480	360
35	53	540	420
40	60	600	480
45	68	660	540
50	75	780	600
55	83	840	660
60	90	900	720
65	98	960	780
≥70	100 mL	200-250 mL over 15-20 minutes	12 mL/kg

For persistent cardiovascular collapse, may repeat bolus once or twice and double infusion dose to 0.5 mL/kg/min

Continue infusion for at least 10 minutes after attaining circulatory stability

Guidelines wrapper page 1 of 2

APPENDIX B to #43169.01: Lipid Rescue Protocol Bag Wrapper; ASRA Guidelines (continued)

BE PREPARED

• We strongly advise that those using local anesthetics (LA) in doses sufficient to produce local anesthetic systemic toxicity (LAST) establish a plan for managing this complication.

DETECTION (BE VIGILANT)

• Use standard American Society of Anesthesiologists (ASA) monitors.
• Monitor the patient during and after completing injection as clinical toxicity can be delayed up to 30 minutes.
• Communicate frequently with the patient to query for symptoms of toxicity.
• Consider LAST in any patient with altered mental status, neurological symptoms or cardiovascular instability after a regional anesthetic. Consider LAST even when the local anesthetic dose is 1) small (susceptible patient), 2) atypically administered (subcutaneous, mucosal, topical), 3) administered by the surgeon, or 4) after recent tourniquet deflation.
• Central nervous system signs (may be subtle, atypical, or absent)
o Excitation (agitation, confusion, vocalization, muscle twitching, seizure)
o Depression (drowsiness, obtundation, coma or apnea)
o Non-specific (metallic taste, circumoral numbness, diplopia, tinnitus, dizziness)
• Cardiovascular signs (often the only manifestation of severe LAST)
o Initially may be hyperdynamic (hypertension, tachycardia, ventricular arrhythmias), then
o Progressive hypotension
o Conduction block, bradycardia or asystole
o Ventricular arrhythmia (ventricular tachycardia, Torsades de Pointes, ventricular fibrillation)
• Sedation may abolish the patient's ability to recognize or report LAST-related symptoms. TREATMENT
• Give lipid emulsion at first sign of a serious LAST event. Prompt administration is more critical than order of administration (bolus vs infusion).
• Lipid emulsion can treat LAST caused by any LA.
• Standard dose epinephrine (1mg) can impair resuscitation from LAST and reduce the efficacy of lipid rescue. Therefore use smaller doses than typical for ACLS, e.g., <1mcg/kg, or for treating hypotension.
• Propofol should not be used when there are signs of cardiovascular instability. Propofol is a cardiovascular depressant with lipid content too low to provide benefit. Its use is discouraged when there is a risk of progression to cardiovascular collapse.
• Prolonged monitoring (2-6 hours) is recommended after any signs of systemic LA toxicity, since cardiovascular depression due to local anesthetics can persist or recur after treatment.
• Report LAST events to www.lipidrescue.org

The ASRA Practice Advisory on Local Anesthetic Toxicity is published in the society's official publication Regional Anesthesia and Pain Medicine, and can be downloaded from the journal Web site at www.rapm.org.

Neal JM, Barrington MJ, Fettiplace MR et al. The Third American Society of Regional Anesthesia and Pain Medicine Practice Advisory on Local Anesthetic Systemic Toxicity. Reg Anesth Pain Med 2017;43: 113-123.

Q59

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

MH Diagnosis and treatment follow MHAUS recommendations. We switched from Dantrolene to Ryanodex for easaier administration in an emergency. An MH cart is kept in the OR that includes a MHAUS Poster and medication kit

Medications in the MH cart include Ryanodex 250mg vial (with additional vials in the OR and PACU pyxis, and pharmacy), a minimum of 5-mL of sterile water for injection without a bacteriostatic agent for each vial of Ryanodex in the kit, sodium bicarbonate 8.4% 50-ml pre-filled syringe x5, dextrose 50% 50-ml pre-filled syringe x2, furosemide 40-mg/4-ml x4, regular insulin 100 units/ml, 10ml - 1 vial (in refrigerator), calcium chloride 10%. 10-ml pre-filled syringe x2, lidocaine 100-mg/5-ml in preloaded syringes x3, 3 liters refrigerated saline solution (in refrigerator.)

Additional readily available supplies include ECG Monitor, pulse oximeter, temperature measuring device with appropriate probes for monitoring central, capnography, ice maker, hypothermia blanket and machine. The cart also contains additional supplies such as 50-mL syringes, large clear plastic bags and buckets for ice, CVP line set, temperature sensing foley

---

Q60

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

A Stanford Emergency Manual is available in each operating room, on the wall beside the phone, between the anesthesia machine and anesthesia pyxis machine. All anesthesiologists are required to maintain ACLS training every two years (or the ASA equivalent). The hospital has a Rapid Response Team and a Code Team that respond to emergencies.

Q61

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

The anesthesia department has 3 ultrasound machines with vascular, regional anesthesia, and spine probes. We also have an echocardiography probe.

Ultrasound is used for all CVC lines and many arterial lines. It is used as needed for peripheral IV access. Ultrasound is routinely used for TAP blocks. Ultrasound is used, as needed, to facilitate neuraxial blocks.

Ultrasound is used to assess cardiac function, especially in the setting of hypotension. POC ultrasound evaluations is increasingly utilized as practitioners develop appropriate skills.

Q62

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

Describe systems in place to ensure inter-professional communication and situation awareness on your obstetric unit:

We are a high volume, busy private practice hospital. The physicians, nurses, and other team members, have a very close working relationship. Multidisciplinary teams have developed policies and procedures for “best practices” based on guidance from national organizations. These policies and procedures guide the care that patients receive.

All patients in the hospital can be viewed via the EMR (Cerner). At each shift change, the outgoing anesthesiologist signs off to the incoming anesthesiologist. The oncoming anesthesiologist rounds on all patients receiving anesthesia and then reviews the board with the L&D charge nurse (the best source of overall information about patients in triage and on the L&D floor). The charge nurse and anesthesiologist communicate throughout each shift for updates on management of L&D and antepartum patients.

There are multiple obstetricians and obstetric groups with patients in the hospital at any one time. Each group does their own handovers and communicates issues or plans with the L&D charge nurse. The charge nurses communicate issues with the anesthesiologist. Obstetricians contact the anesthesiologist with any issues or patients of concern, via telephone or face-to-face in the physician lounge.

The L&D charge nurse participates in a huddle each shift. Attendees at the morning huddle include hospital charge nurses, nurse specialists, hospital administration, pharmacy, housekeeping, laboratory services, IT, and engineering. Attendees at the evening huddle include charge nurses and administration and deals primarily with overnight staffing.

Patients with complicated medical conditions have a care plan developed by a multidisciplinary team before the patient enters the hospital, including an anesthetic plan. Nurse educators facilitate writing and distribution of the plan. That plan is shared with all relevant providers and is available in the EMR.

Q63

Outline how timeouts are performed prior to all anesthetic interventions.

A timeout is performed and documented before each anesthesia and surgical procedure, including placement of a labor epidural.

Q64

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

All patients presenting to the hospital for surgery are screened by staff in the PAES clinic (Pre-Anesthesia Evaluation Service). The PAES clinic is overseen by the anesthesia department and run by nurses. The PAES clinic contacts all patients before surgery by telephone to review hospital procedures (NPO, arrival time, etc.). When indicated, patients are seen in person at the PAES clinic. A PAES nurse contacts the L&D anesthesiologist each day with any patient questions or items that require evaluation (abnormal lab tests, ECG, etc.). All patients for scheduled Cesarean delivery (or any other surgery) are seen in the preoperative holding area by the anesthesiologist before transfer to the OR.

The EMR is reviewed on a regular basis for all patients on the L&D floor. The anesthesiologist reviews the patient problem lists and sees patients as indicated or upon request. Nursing staff ask the anesthesiologists to see patients with questions or medical issues. Obstetricians inform the anesthesiologists of any patients they are concerned about. Many patients do not wish to be visited by the anesthesiologist, unless asked. Thus, all patients are triaged by reviewing the EMR and speaking with the nursing staff, but not all patients are seen in person.

Q65

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

Obstetricians identify high risk patients prior to delivery. The obstetricians notify a Clinical Nurse Specialists (CNS) and the relevant physician specialists (cardiology, anesthesiology, neurosurgery, hematology, etc.). The CNS nurses (L&D, NICU, PACU, postpartum) facilitate development of a care plan with input from relevant physicians and departments (administration, pharmacy, blood bank, lab, etc.). Anesthesiology is always included in the development of these plans. Depending on the patient problem, a telephone or in-person evaluation is made by an anesthesiologist, as indicated.

Care plans may include cardiac monitoring during labor and after delivery, transfer to SICU or telemetry after delivery, coagulation optimization (managing antepartum anticoagulation, factor replacement for patients with Von Willebrand’s disease, etc.) and management of other maternal or neonatal problems.

Patients requiring an anesthesia consult prior to admission are scheduled in the obstetric triage unit. At that time, the anesthesiologist will develop a plan of care for the patient. Physicians may request consultations to other specialists at Sharp Memorial Hospital. SMBHWN has guidelines for consultations to other specialties for physician reference.

Q66

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

SMBHWN is adjacent to Sharp Memorial Hospital (SMH), a Level 2 Trauma Center. Both hospitals are part of the Sharp Metropolitan Campus and physicians cover both hospitals. A trauma surgeon is available in hospital 24/7 at SMH. Gynecology Oncology physicians are available on call 24/7. Other surgical specialties are available on call 24/7 (general surgery, urology, etc.).

Q67

Outline your protocol or pathway to activate interventional radiology.

Interventional radiology services are available 24/7. Nursing staff place an order for IR in the EMR and the obstetrician speaks with the interventional radiologist prior to transfer. Patients are accompanied to IR by an ESO trained RN +/- an anesthesiologist (when needed). Patients are usually in IR within 30-60 minutes of a call requesting IR services.

Q68

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

The intensive care units are located at Sharp Memorial (connected to Sharp Mary Birch by a patient tunnel/walkway.) The SICU and MICU are 24 beds each unit. Patients requiring ICU level of care are co-managed by an obstetrician/perinatologist, intensivist and other specialists as needed. If an ICU patient is pregnant and requires electronic fetal monitoring an OB nurse trained in electronic fetal monitoring will perform intermittent or continuous fetal monitoring assessment and report to the obstetrician/perinatologist. The multidisciplinary care plan includes anesthesiology and a delivery plan. If the patient is postpartum, a postpartum nurse will conduct fundal checks and OB assessments every 4 hours x 24, then every shift x72 hours or based upon the physician's order. A lactation consult and social work consult are placed on every mother in the ICU due to mother-baby separation.

Q69

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

Women who undergo labor and vaginal delivery are cared by L&D nurses who all meet Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) standards for credentialing and ongoing practice, including annual competency training.

All patients who receive anesthesia in the OR are transferred to the PACU (or SICU) for immediate postoperative care. PACU nurses meet American Society of Perianesthesia Nurses (ASPAN) standards. Prior to working in the PACU, the most nurses have critical care experience. PACU nurses maintain ACLS skills, ability to extubate patients and maintain a patent airway, ability to initiate standard emergency orders, massive transfusion protocol, manage arterial and CVP lines, etc. Nurses must complete annual competency training.

A small number of nurses are cross-trained and work in both L&D and PACU.

Q70

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

We have five emergency codes for different clinical situations: (1) OB Team Stat Alpha, (2) OB Team Stat Bravo, (3) Code Pink, (4) Rapid Response Team (RRT) and (5) Code Blue.

The OB Team STAT policy outlines our obstetric emergency response and teams. An OB Team STAT may be initiated by a nurse or physician when a patient experiences an obstetrical related emergency which includes the baby or fetus. Examples include:

- antepartum hemorrhage
- eclamptic seizures
- precipitous delivery with breech
- shoulder dystocia in the absence of a physician
- fetal bradycardia

The OB Team STAT Alpha response team includes:

- Obstetrician/Perinatologist/OB Hospitalist
- OB Anesthesiologist
- Neonatologist if available
- LDR charge nurse
- LDR unit secretary/HCA
- LDR RN- (back-up for OR charge nurse)
- Operating room charge nurse
- ALS team (RN, RCP, NNP) (neonatal response team)
- OR circulating nurse
- OR Surgical Tech
- Laboratory Technician and Pharmacist

The response team receives an emergency page via the hospital paging system and the hospital operator announces overhead “OB Team Stat Alpha”. The team responds immediately to the operating room and the patient is emergently transferred to the OR.

OB Team STAT Bravo may be initiated when a patient experiences an obstetrical related emergency that DOES NOT include the baby or fetus. Examples include:

- postpartum hemorrhage
- postpartum eclamptic seizures
- respiratory distress

The OB Team STAT Bravo response team includes:

- Obstetrician/Perinatologist/OB Hospitalist
- OB Anesthesiologist
- Operating room charge nurse (as applicable)
- Nursing unit charge nurse
- Respiratory Care Practitioner
- LDR Charge nurse
- Pharmacist

The response team receives an emergency page via the hospital paging system and the hospital operator announces overhead “OB Team Stat Bravo”. The team responds immediately to the patient location.

“Code Pink” is called (via pager and overhead) when the neonatal resuscitation team is needed emergently. The ALS team (RN, RCP, NNP) and a neonatologist respond to Code Pink. In addition, the L&D charge nurse, anesthesiologist, and in-hospital obstetrician

respond and assist, until the ALS team arrives.

“Rapid Response Team” is called (via pager and overhead) when a nurse or family member is concerned about a patient whose clinical status is deteriorating. The responding team consists of:

- An ICU nurse who is certified to initiate standard emergency orders
- A Respiratory therapist

The anesthesiologist, in-hospital obstetrician, PACU nurses and L&D charge nurse also respond and assist, as needed.

“Code Blue” is called (via pager and overhead) for cardiac arrest or near cardiac arrest situations. The responding team consists of:

- ICU and/or Emergency Department nurse(s)
- PACU nurses
- An ICU or Emergency Department physician
- ECG technician
- Administrative Liaison
- Pharmacist

The anesthesiologist, in-hospital obstetrician and L&D charge nurse also respond and assist, as needed.

Q71

*Outline your simulation drills and training.

Few anesthesiologists have participated in formal obstetric simulation in the last 5 years. However, OB Team Stat Alpha occurs almost every day so the OB Team Stat Alpha team “practices” almost every day. All OB anesthesiologists respond to OB Team Stat Alpha several times each month.

Nursing staff complete annual drills on eclamptic seizure and obstetric hemorrhage as well as biannual maternal and neonatal cardiac arrest in every department at SMBHWN.

Interdisciplinary simulation is an area we have identified for improvement. Recently the hospital purchased a high-fidelity simulator and approved conversion of a patient room for a simulation training area. Anesthesiologists plan to participate in multidisciplinary training once the program is finalized.

PACU nurses complete annual hemorrhage drills and must demonstrate competent use of equipment including:

- blood warming equipment
- the Belmont rapid infuser
- implementation of emergency release blood products
- patient scenarios that include ACLS level interventions and use of hospital emergency standing orders standardized procedures

PACU is currently planning to expand annual code blue drills to include pharmacists as active participants. The recent purchase of a high-fidelity manikin for use in in-situ simulation will bring added quality to drills and expand the disciplines involved in hemorrhage drills offered throughout the year.

Q72

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

Few anesthesiology faculty have participated in obstetri simulation over the past five years. Nurses have annual competency training that includes simulation training.

OB Team Stat Alpha, our emergency page to the OR for a maternal / fetal issue happens almost every single day. Consequently all who cover L&D at SMBHWN have extensive practice dealing with obstetric emergencies.

Q73

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

Interdisciplinary simulation is an area we have identified for improvement. Recently the hospital purchased a high-fidelity simulator and approved conversion of a patient room for a simulation training area. Anesthesiologists plan to participate in multidisciplinary training once

---

Q74

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

Postpartum tubal ligations (PPBTL) can often be performed shortly after delivery, Monday to Friday, 07:30 – 23:00. Women who deliver 23:00 – 07:00, can usually have a PPBTL in the morning after delivery when the regular OR staff are available. PPBTL is not available on weekends or holidays (unless the patient undergoes Cesarean delivery). This was a hospital administration decision driven by cost.

Q75

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

We have 9 operating rooms, 3 of which are dedicated to Cesarean delivery or other obstetric procedures in the OR (e.g., twin vaginal delivery, PUBS, EXIT procedures, etc.). There is a dedicated OR nurse and OR tech available for emergency CS 24/7. When a CS is called at night or on weekends, the call team is called in (30 minutes response time) so that personnel are available for any additional emergencies.

Other obstetric surgical procedures including cerclage placement or removal, and management of postpartum hemorrhage (vaginal laceration, cervical laceration, retained products of conception or placenta, uterine atony, etc.), occur in a non-CS OR.

Q76

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

If a patient requires invasive monitoring in labor and delivery, we partner with our PACU or critical care areas to provide a competency validated nurse to provide care. If a patient has an arterial line or CVP in place, the monitoring and documentation will be the responsibility of the competency validated PACU/Critical Care RN. (Policy #47714.01 Invasive Hemodynamic Monitoring- Management of Obstetric/Gynecological Patients)

Q77

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

Infusions of vasoactive drugs are only administered in the OR, PACU or ICUs. Medications for infusion are prepared by pharmacists and administered via Alaris pumps with Guardrails programming. Anesthesiologists administer these mediations in the OR. Trained and credentialed PACU and ICU nurses administer these drugs in the PACU and ICU following physician orders and hospital procedures and policies.

Q78

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

The Childbirth Education Department offers a variety of classes for expectant parents. Classes are offered in person and virtually. Examples of educational offerings open to the community include:

- Childbirth preparation
- Cesarean birth preparation
- Labor comfort measures and relaxation skills class
- Preparing for multiple babies
- Preterm birth class
- Breastfeeding support
- Baby care basics
- Sibling class
- Grandparenting class

Q79

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

All anesthesiologists are encouraged to be members of SOAP and to take advantage of SOAP educational offerings, including the annual meeting. Interprofessional education occurs at a hospital level through Grand Rounds, M&Ms, Fetal Strip Reviews, the Sentinel Event Committee, and the Chief Medical Officer's monthly blog.

Nurses complete annual education modules in addition to skills stations that are relevant to caring for and educating pregnant patients, their support person and family members. Nurses are encouraged to hold membership in professional nursing organizations relative to their specialty care area, by attending conferences and pursuing nursing certification specific to their specialty area/population.

Q80

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

Some CA3 University of California San Diego residents spend a 4-week rotation at SMBHWN. These residents come to hone their clinical skills as we have a higher patient volume that the UCSD hospital and to learn about community private practice anesthesia. Over 4 weeks, the residents are involved with a wide variety of obstetric patients and the common obstetric emergencies.

Q81

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

All nurses employed at Sharp Mary Birch are required to undergo diversity, inclusion and equity training every 2 years. The educational program titled Dignity in Pregnancy and Childbirth was provided through Diversity Science in 2021. The education meets the requirements in California Senate Bill 464 which requires implicit bias training for all perinatal healthcare providers in hospitals and birth centers.

Efforts to promote diversity, equity and inclusion of workforce include hiring nurses from various backgrounds as well as approving community college nursing education placements. In addition, we received LGBTQ+ Healthcare Equality Leader Designation in 2022.

Physicians at Sharp hospitals are not employees of the hospital or health system. The Medical Staff Bylaws governs physician care at the hospitals.

SMG has an Equal Employment Opportunity policy, and actively seeks a diverse group of physician anesthesiologists.

Of the 12 anesthesiologists who work regularly at SMBHWN, 7 are men and 5 women (the distribution of anesthesiologists in ASMG are 70% male, 30% female). Of the 12 anesthesiologists, one is ethnically Chinese, one Korean, and one Indian.

Page 7: Cesarean Delivery Management

Q82

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

We have developed formal ERAS policies for outpatient surgery, particularly outpatient robotic assisted laparoscopic surgery. These practices are generally adopted for all surgical patients, but we do not have a specific approved ERAC policy at the hospital. We follow most SOAP ERAC recommendations including:

- Solid food is allowed up to 8 hours before Cesarean delivery
- Clear, carbohydrate containing liquids are encouraged up until 2 hours before anesthesia and surgery
- Surgeon's offices provide patient education, including a hospital provided handout (which includes descriptions of anesthesia for Cesarean delivery). In addition, PAES contacts all patients and reviews preoperative instructions in the days before surgery
- The hospital supplies an education pamphlet about Cesarean delivery also addresses lactation and breastfeeding. Classes are available online and in person.
- We have a hemoglobin optimization program, coordinated by our pharmacy for all patients identified with anemia and/or at risk of major hemorrhage
- We actively treat spinal anesthesia induced hypotension with phenylephrine and/or ephedrine. Some anesthesiologists administer a phenylephrine infusion and other prefer intermittent bolus administration.
- The non-exposed parts of patients are covered with warm blankets. IV fluids are warmed prior to use. An audit of 2,115 patients delivered by Cesarean section from 9/15/2021 to 9/15/2022 showed that 1.4% of patients had a temperature <36C on PACU admission, so hypothermia is not a significant problem.
- We follow the Rule-of-3s for oxytocin administration after Cesarean section. We administer oxytocin 3 units after delivery and have regular communication with the obstetrician regarding uterine tone. More 3 ml bolus doses of oxytocin are given as needed and a low-dose oxytocin infusion is begun, if needed.
- All patients receive prophylactic antibiotics before Cesarean section. The vast majority (>99%) receive cefazolin within 30 minutes of skin incision. Antibiotic use is monitored by the Antimicrobial Stewardship Committee and all postoperative infections are reviewed by the Surgical Site Infection committee.
- Almost all Cesarean section patients receive dexamethasone and ondansetron for PONV prophylaxis. Obese patients also receive metoclopramide.
- Almost all patients who receive spinal anesthesia receive spinal morphine 0.1-0.15 mg (most commonly 0.1 mg). Almost all patients who receive epidural anesthesia receive 2-3 mg epidural morphine (most commonly 2 mg).
  - TAP blocks are often performed when neuraxial morphine is not administered
- Multimodal analgesia is begun in the OR or PACU, usually with Ketorolac 30 mg plus acetaminophen 1,000 mg (IV or PO). Patients receive scheduled doses of ketorolac or ibuprofen plus acetaminophen until discharge. Ketorolac is usually discontinued after 24 hours.
- Skin-to-skin contact in the OR is practiced as the situation allows. The hospital is committed to maximizing breastfeeding. All postpartum nurses are regularly educated and support breastfeeding. Lactation consultants are available every day to assist with breastfeeding.
- Most Cesarean section patients receive ~2 liters of IV fluids in the OR
- We universally practice delayed cord clamping of 60 or more seconds. We have an active Neonatal Research Team that studies management of preterm patients and enrolls many patients into clinical trials.
- Patients are encouraged to drink water or ice chips in the PACU within 60 minutes of arrival, if not experiencing PONV
- Early mobilization is practiced
- Resting periods are promoted including breaks from visitors and risk stratification of respiratory monitoring
- The current surgeon's orders are for removal of the urinary catheter 24 hours after delivery. The obstetricians are willing to change to 12 hours, but the hospital will not make this order change until after the transition from Cerner to EPIC (2024)
- All patients who undergo Cesarean delivery have sequential compression devices (SCD) applied in the OR and continued until they are regularly mobile (most often the day following surgery)
- Discharge planning starts upon admission to the hospital. A pediatrician sees all babies within 24 hours of birth.
- Hemoglobin is determined on POD1 for all post Cesarean delivery patients

- SMBHWN is a Baby Friendly Hospital and actively supports breastfeeding, including having the baby on the mother's breast during the "golden hour" after delivery
- If not begun in the OR, multimodal analgesia is begun in the PACU, usually with Ketorolac 30 mg plus acetaminophen 1,000 mg (IV or PO). Patients receive scheduled doses of ketorolac or ibuprofen plus acetaminophen until discharge. Ketorolac is usually discontinued after 24 hours.
- The hospital has promulgated guidelines for discharge opioid prescriptions, recommending no more than 20 oxycodone 5 mg tablets after Cesarean delivery.
- The hospital has an active diabetes management program for hospitalized patients. Antepartum and postpartum patients received insulin via a sliding scale (order sets developed by perinatology and diabetology) and approved though system committees. Endotool is used to manage IV insulin infusions for laboring women.
- Promotion of return of bowel function is encouraged by early ambulation, multimodal analgesia (minimizing opioids) and use of medications as needed. Gum chewing is allowed.

Q83

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

Our standard spinal trays contain a 25-guage spinal needle. Our CSE trays have a 26-guage spinal needle. All available spinal needles are pencil point and range from 24-guage to 27-guage.

Q84

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

The adequacy of anesthesia for Cesarean section is first checked by the anesthesiologist (loss of cold sensation to alcohol or ice) +/- loss of pain sensation to sharp or pinch. When inadequate anesthesia is identified before skin prep, a regional anesthetic is repeated (low-dose spinal or CSE depending on anesthesiologist preference). After prepping and draping, surgeons assess anesthesia by a skin pinch with an Allis clamp at the level of the planned incision and umbilicus.

Should a patient experience discomfort during surgery, the anesthesiologist asks the surgeon to stop, if possible, and discusses options with the patient. Intravenous medications including midazolam, fentanyl, morphine, hydromorphone, and ketamine may be used, as indicated. General anesthesia is used, when needed. All patients are seen the day following surgery and any anesthesia issues or concerns dealt with at that time. When we start reviewing all general anesthesia for Cesarean section cases (October 2022), we will look more closely at how we can decrease the conversion from regional to general anesthesia.

Q85

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

When spinal anesthesia is used for Cesarean section, patients receive intrathecal morphine 100-150 mcg (most commonly 100 mcg). When patients receive epidural anesthesia, they receive 2-3 mg epidural morphine (most commonly 2 mg). Analgesia in the PACU is managed by the anesthesiologist. Regular scheduled acetaminophen (PO or IV) is begun in the PACU and continued Q6H until discharge (average discharge on POD2 with typical range of POD2-4). After discussion with the surgeon (concern for uterine tone / hemorrhage) ketorolac may be started in the OR or PACU, or ibuprofen may be used. Ketorolac is often used for the first 24 hour and then the patient is switched to ibuprofen for the remainder of her hospital stay. Surgeon's orders include postoperative pain management after patients leave the PACU (driven by the surgeon's desire to control the use of ketorolac and/or ibuprofen).

Q86

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

We do not provide local anesthetic wound infusions. TAP blocks are performed when indicated such as after a general anesthetic CS or when a patient experiences significant pain in the PACU despite regional anesthesia. We do not have a specific anesthesia acute pain service.

Q87

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

Institutional efforts to minimize opioid usage include the routine use of neuraxial morphine, regular scheduled acetaminophen plus ketorolac/ibuprofen, use of abdominal binders, and non-medical comfort measures (music, aroma therapy, etc.). TAP blocks are used as indicated. Oxycodone 5 mg doses are used for moderate pain (pain scale 5-6) and 10 mg dose for severe pain (pain scale 7-10). There is no daily limit at 30 mg. There is a Pharmacy Pain Service that sees patients with difficult to manage pain or patients that have high opioid requirements. The Pain Service works with the patient, nurses, surgeons, and anesthesiologists to optimize pain management.

Sharp Healthcare has provided guidance to all surgeons concerning prescriptions for opioids following hospital discharge. The recommendation is for a maximum of 20 tablets after a Cesarean delivery.

Q88

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

Patients with chronic pain or opioid use disorders are a challenge to manage. They tend to see specialist pain management or opioid use disorder physicians who do not work in the hospital. Surgeons, anesthesiologists, and the Pharmacy Pain Service collaborate to manage these patients, in consultation with the outside specialist physicians. Patients on methadone or buprenorphine usually continue their maintenance therapy. Regional anesthesia including TAP blocks are often used. Multimodal analgesia is utilized and mu agonist opioids provided as needed (including at high doses). Most patients wish to receive minimal opioids and accept some pain or discomfort. Our orders and process for managing these patients is under current review.

Q89

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

OR temperature and humidity are maintained as required by California and federal law, at 68-75F. The hospital engineering department monitors and adjusts the temperature and humidity as needed. All patients are covered by warm blankets upon entry into the OR. All IV fluids are warmed prior to being infused. Forced air warming systems are available and used when indicated. Panda infant warmers are in all delivery operating rooms to maintain infant temperature. Premature infants are initially cared for in the infant resuscitation room where the ambient temperature is 75F.

Q90

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

Forehead temperature strips are available for use on awake and asleep patients. Nasal or esophageal temperature probes are available and used when general anesthesia is used.

Q91

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

The vast majority of women receive cefazolin 2 gm antibiotic prophylaxis within 30 minutes of skin incision before Cesarean delivery. Cefazolin 3 gm is given by weight (>=120 kg) and BMI (>=40) criteria. Cefazolin is kept in refrigerators in the OR Core, PACU and L&D pods. Nurses bring cefazolin to the OR for administration. The cefazolin is administered in the OR during placement of neuraxial anesthesia or just after block placement (before or during skin preparation). Laboring women with ruptured membranes also often receive azithromycin 500 mg infused before and during Cesarean section. The hospital has a very active Antimicrobial Stewardship Program (ASP) and all antibiotic use is carefully monitored. Most “penicillin allergy” patients receive cefazolin. When cefazolin is truly contraindicated, or additional coverage is required, appropriate antibiotics are administered including gentamicin, vancomycin, clindamycin, ertapenem, etc. Given resistance to clindamycin, its use is steadily decreasing.

Cefazolin is re-dosed every 4 hours in the OR and when the estimated blood loss reaches 1.5 liters.

Metronidazole 500 mg is given when surgery includes the colon.

Medication orders are reviewed by a hospital pharmacist 24/7. Medications only available from the pharmacy are provided to the OR within 5-15 minutes of a pharmacist reviewing the order.

Q92

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

Prefilled cefazolin syringes are kept in the L&D Pyxis machines as well as the OR Core and PACU. Azithromycin is kept in the L&D Pyxis machines. Metronidazole is kept in the OR Core pyxis machine. The anesthesia pyxis machines have cefazolin and clindamycin.

Other medications including including gentamicin, vancomycin, clindamycin, ertapenem, etc. are readily available from the pharmacy (tube system or face-to-face hand off) within 5-15 minutes.

Q93

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

Hypotension following neuraxial anesthesia is treated with IV fluid co-load and bolus doses of phenylephrine and ephedrine. Phenylephrine infusions are used by a minority of anesthesiologists.

Q94

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

All Cesarean sections are at moderate to high risk of experiencing PONV (female, ~90% non-smokers, abdominal surgery, receive postoperative opioids). By policy, women with BMI >35 receive metoclopramide 10 mg IV and famotidine 20 mg IV before transfer to the OR.

Q95

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

Almost all patients receive dexamethasone and ondansetron for PONV prophylaxis in the OR. Metoclopramide, haloperidol and diphenhydramine are also available in each OR. Promethazine is available in the OR Core pyxis and PACU.

Drugs available in the PACU to treat PONV include ondansetron and promethazine, plus scopolamine patches.

Q96

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

In the OR, shivering is usually treated with dexmedetomidine 10-20 mcg (up to 30 mcg). Meperidine 12.5-25 mg is available but infrequently used. Meperidine 12.5 is the first choice to treat shivering in the PACU. We are discussing the possible use of dexmedetomidine use in the PACU by the nurses, but meperidine remains their preferred medication to treat shivering.

Nalbuphine 2.5-5 mg is the preferred drug to treat pruritus. Diphenhydramine is our second choice. Naloxone is used on rare occasions.

Q97

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

We do not screen labor patients for obstructive sleep apnea. PACU nurses screen patients upon admission to the PACU (STOP/BANG).

Q98

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

The anesthesiologist selects a risk category for postoperative respiratory monitoring when neuraxial morphine is used for analgesia after cesarean delivery. The anesthesiologist categorizes each patient as high or low risk for respiratory depression according to the SOAP Consensus recommendations and chooses the appropriate monitoring orders.

Q99

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

Other routine postpartum monitoring follows AWHONN and ACOG standards. All postpartum nurses receive 20 hours of breast-feeding education upon hire and have yearly competence training. We have lactation consultants available every day of the week. We were formerly designated as a Baby-Friendly hospital. We are a designated Nursing Magnate hospital.

Q100

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

We actively support baby-friendly breastfeeding at SMBHWN. For vaginal deliveries, most babies are placed on the mother's chest just after delivery ("golden hour").

In the OR, once each baby is stable, they are wrapped and given the the mother and support person to hold. Cheek-to-cheek skin contact is routinely practiced. More extensive skin-to-skin contact is usually difficult given OR constraints, but is practiced if possible and important to the mother.

Q101

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

We have a large NICU (84 beds). A team from the NICU, the ALS team is available to attend all deliveries. The team consists of an RN, respiratory therapist, and neonatal nurse practitioner. A neonatologist in in the hospital 24/7.

Page 8: Labor Analgesia

Q102

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

Labor epidural analgesia is mostly provided by a CSE technique using a 17 or 18 G Tuohy needle and 26 G pencil point spinal needle. Non dural puncture epidural analgesia is provided. DPE is rarely used.

Q103

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

The pharmacy provides medications for initiation and maintenance of labor analgesia. A syringe of bupivacaine 0.125% and fentanyl 2 mcg is used for initiation of labor analgesia. For CSE, 2-2.5 ml of this solution is given in the intrathecal space followed by a few ml in the epidural space. For epidural analgesia, 10-15 ml of the solution is used.

Epidural analgesia is maintained with a solution of bupivacaine 0.1% and fentanyl 2 mcg/ml.

Q104

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

The pharmacy provides medications for initiation and maintenance of labor analgesia. A syringe of bupivacaine 0.125% and fentanyl 2 mcg is used for initiation of labor analgesia. For CSE, 2-2.5 ml of this solution is given in the intrathecal space followed by a few ml in the epidural space. For epidural analgesia, 10-15 ml of the solution is used.

Q105

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

Epidural or CSE analgesia is initiated with bupivacaine 0.125% and fentanyl 2 mcg/ml. The medication comes in prefilled syringed from the pharmacy. Epidural analgesia is maintained by PIEB using bupivacaine 0.1% and fentanyl 2 mcg/ml. The bags are provided by the pharmacy.

Q106

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

CSE, DPR and single-shot spinal may all be used

Q107

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

Standard epidural	**15.0**
CSE	**85.0**
DPE	**0.0**
Other (describe)	**0.0**

Q108

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

We use PIEB for maintenance of epidural analgesia. The medications are bupivacaine 0.1% with fentanyl 2 mcg.ml. The pump delivers one 8-ml bolus dose per hour starting 30 minutes after the pump is attached to the epidural catheter. Patients may self-administer up to 3 additional doses each hour with a 10-minute lockout interval. We have used this method for ~20,000 patients over the last 4 years. Most patients have excellent analgesia and remain mobile such that they can turn side to side and get up on hands and knees when indicated.

Q109

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

85-90% of patients receive an Arrow flex-tipped, wire-reinforced epidural catheter. The remainder received a Braun catheter.

Q110

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

Nurses assess and document pain and unintended sedation using the Passero Opioid Sedation Scale (POSS) every 30 minutes after initiation of epidural placement.

Anesthesiologists regularly check on patients either in-person or by discussing with the nursing staff every few hours.

Q111

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

Breakthrough pain is managed by top-ups and assessment of sensory block. The most common top-up dose is 10-ml 0.125% bupivacaine with fentanyl 2 mcg/ml +/- an additional 100-mcg fentanyl. When additional local anesthetic is needed, 1% lidocaine 5-10 ml or 0.25% bupivacaine 5-10 ml are given. Sensory block is assessed looking for bilateral inability to feel cold to ice below the umbilicus. Indications for epidural replacement include unilateral or bilateral block

---

Q112

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

Vital signs include blood pressure, heart rate and respirations are monitored every 2 – 3min. x 4 after epidural initiation and then by ongoing assessments every 30 minutes. When maternal systolic BP is less than 90mm Hg or < 75% of baseline, whichever is lower, RNs administer ephedrine or phenylephrine to correct hypotension. If the maximum dosage of ephedrine (30 mg) is administered, or if any phenylephrine is administered, the RN must notify the anesthesiologist.

Motor block is assessed by the patient's ability to move her legs every 2 hours. Urinary volume output from the urinary catheter is documented every 2 hours.

Nursing will notify the anesthesiologist for:

- Poorly controlled, uneven, or unrelieved pain
- Sensory, motor or ascending block (e.g. inability to move both legs, SOB, weakness in upper extremity, changes in LOC).
- Persistent maternal systolic BP less than 90mm Hg or < 75% of baseline, despite treatment by policy
- Unrelieved side effects, e.g., nausea, vomiting, urinary retention, excessive or increasing sedation, respiratory rate less than 12 breaths/minute (compare to patient's usual respiratory rate) and change in character of respirations.
- Change in mental status, e.g., disorientation, confusion or hallucinations.
- Visual disturbances
- Signs of local anesthetic toxicity (e.g., ringing in ears, metallic taste, circumoral numbness,)
- Back pain or paresthesia with epidural bolus administration
- Epidural site redness, soreness, drainage, or edema
- Head, neck, or back pain.

Q113

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

Nursing postpartum management follows AWHONN and ACOG standards for assessment of vital signs, hemorrhage, atony, use of uterotonic agents, and for supportive maternal, neonatal, and family-centered care. Neonates are placed skin-to-skin with their mothers immediately following delivery whenever possible.

Q114

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

Nurses support non-medical labor analgesia management including:

- Labor positioning
- Ambulation
- Music
- Mood lighting
- Aroma therapy
- Birthing balls
- Peanut balls
- Showers
- Massage
- Doulas

Nurses may administer 50-mcg doses of PRN fentanyl by obstetrician order.

IV PCA fentanyl is available when epidural analgesia is not possible or contraindicated. Sharp Healthcare has standard order sets for IV PCA fentanyl, morphine and hydromorphone. The standard IV PCA fentanyl orders start with:

- Dose 10 mcg
- Lockout 1o minutes
- Hourly maximum 70 mcg
- Bolus dose 20 mcg

Pump programming is adjusted, as indicated, while maintaining patient safety.

Nitrous oxide is not used on our L&D unit.

Page 9: Recommendations and Guidelines Implementation

Q115

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

A platelet count is not required before neuraxial block placement in healthy patients (PCEA policy document).

Uncomplicated patients receiving labor epidural analgesia are allowed clear liquids during labor. Women undergoing Cesarean delivery are allowed clear liquids up to 2 hours before surgery.

Labor epidural analgesia is available upon patient request. No minimal cervical dilation is required before epidural analgesia.

Status
Active
PolicyStat ID
9980030
Origination
Last Approved
Effective Last Revised Next Review
10/1/2005 6/18/2021
6/18/2021 6/18/2021 6/17/2024
Owner Policy Area
Applicability References
Jacqueline Hiner
Womens & Childrens
SCV SGH SMB
Patient Care, SCV, SGH, SMB, policy & procedure
Epidural/ Patient Controlled Epidural Analgesia (Women’s & Children’s SVCS), 47718.99
COPY
II. DEFINITIONS:
A. Continuous Epidural Infusion (CEI): A continuous infusion into the epidural space.
B. Patient controlled epidural analgesia (PCEA): Analgesic self-administration infused into the epidural space by a specialized device (PCEA pump), within pre-specified parameters, (e.g. basal rate, bolus dose and frequency, etc.).
C. Programmed Intermittent Epidural Analgesia (PIEB). A pump that delivers intermittent epidural bolus doses of medication at programmed intervals, usually combined with a patient's ability to add additional boluses (PCA). PIEB pumps are programmed (1) when to start the bolus doses, (2) how often to automatically bolus, (3) to allow additional PCA bolus doses, (4) to define a maximal hourly dose, and (5) the minimum time interval between doses.
D. Competency validated Registered Nurse (RN): An RN who cares for patients receiving epidural analgesia and has received education, training and has successfully met performance criteria for the procedure including the removal of the epidural catheter.
E. Dose Request Cord: Cord and button that when pressed administers the requested bolus dose to the patient as prescribed by the anesthesia provider.
F. Independent Double Check: Click here to view #30338-Independent Double Check
I. PURPOSE:
To provide guidelines and education for the care of the patient receiving continuous epidural infusion (CEI) or patient controlled epidural analgesia (PCEA) or programmed intermittent epidural bolus analgesia (PIEB).
Epidural/ Patient Controlled Epidural Analgesia (Women’s & Children’s SVCS), 47718.99. Retrieved 9/6/2022. Official copy at http://sharp.healthcare.policystat.com/policy/9980030/. Copyright © 2022 Sharp HealthCare

III. TEXT:
A. The anesthesiologist and assigned competency validated RN share responsibility for the observation and monitoring of patients receiving epidural anesthesia.
B. The patient will complete an anesthesia questionnaire and be seen and evaluated by an anesthesiologist prior to the procedure.
C. The anesthesiologist will review the anesthesia questionnaire with the patient and will ask her to sign the entity specific form prior to the procedure. At SMBHWN and SCVMC: "Acknowledgement of Anesthesia Risks" form; at SGH: "Authorization for and Consent to Surgery or Special Diagnostic or Therapeutic Procedures."
D. Patient acknowledgement of anesthesia risks and indications for the procedure is the responsibility of the attending anesthesiologist. The anesthesiologist will document the patient's acknowledgement of anesthesia risks and indications in the patient's medical record (MR).
E. For safety reasons, only one support person will be allowed to remain in the room during epidural insertion (at the discretion of the anesthesiologist). In order to decrease the chances of infection at the insertion site, that person may be requested to wear a surgical mask and sit directly in front of the patient during the procedure.
COPY
F. At the discretion of the anesthesiologist, extraneous noise (television, radio, cell phones, etc.) may be requested to be turned down or turned off prior to the initiation of the epidural and/or spinal block.
G. Anesthesiologists will use the standardized WHSLabor Analgesia PCEA physician order set.
H. Laboratory studies to be assessed by the anesthesia provider prior to insertion of the epidural catheter. The anesthesiologist may waive pending laboratory studies at his/her clinical
discretion.
1. CBC results are not required for epidural placement for most patients.
2. For patients with preeclampsia, CBC results should be communicated prior to placement.
3. If CBC results are available before an epidural placement, the RN will notify the anesthesiologist if the Hct. is <30% or platelet count is < 100 (100, 000 cells per microliter).
4. The nurse should contact the anesthesiologist if the patient has received heparin within the past 12 hours. A PTT may be required depending on the dose of the heparin and time of administration (ASRA Guidelines).
I. RN will reinforce the anesthesiologist's explanation to the patient and family about the selected method of epidural analgesia therapy.
J. Only an anesthesiologist may insert epidural catheters.
K. The RN will monitor and assess the laboring patient and her fetus(es) during epidural infusion/ PCEA/PIEB therapy.
L. If the maternal or fetal assessments indicate concern, the nurse may discontinue the epidural infusion until the anesthesiologist can evaluate the patient.

M. If the patient's condition indicates a need for an increase/decrease of the infusion, the nurse will notify the anesthesiologist for patient evaluation.
N. The anesthesiologist and/or pharmacy department is responsible for preparing the narcotic epidural anesthetic/analgesic solution.
O. All infusion sets will be inserted into epidural pumps using epidural specific portless tubing which contains a yellow stripe.
P. Bolus doses may be given via the pump by setting the volume and rate of infusion. Upon completion of the bolus, the rate will be changed to the continuous infusion rate or PCEA/PIEB parameters. ONLY THE PATIENT may administer a bolus dose via the dose request cord. The RN will not press the button and will instruct family members / visitors not to do so as well.
Q. Removal of an epidural catheter may be performed by a competency- validated RN. The RN will contact the anesthesiologist if the epidural catheter does not come out easily.
IV. PROCEDURE:
PROCEDURE:
RESPONSIBILITY:
A. Orders 1.
2.

2.
The anesthesiologist will complete the labor anesthesia order set.
Anesthesiologist /RN/Pharmacist
COPY
2. The following will be easily accessible for emergency use:
a. Ambu bag and airway
b. O2 non-rebreather mask and tubing
c. O2 flowmeter
d. Suction equipment
e. Ephedrine
Pharmacy will receive a copy of the order set and reconcile the orders prior to infusion.
B. Equipment RN 1. Gather Equipment
a. Preservative free medication infusion (local anesthetic
plus opioid)
b. PCEA/PIEB pump
c. Portless epidural tubing
C. Preprocedure Verification and Prior to Catheter Placement:
1. Have IV access available and maintain infusion rate per physician orders.
RN/OB/ Anesthesiologist
2. Perform vaginal examination to determine fetal presentation, station, dilation, and effacement. Document fetal status, fetal baseline, maternal vital signs and labor progress and notify the anesthesiologist of request for
RN

PROCEDURE:
RESPONSIBILITY:
epidural.
3. If indicated, obtain and review appropriate laboratory studies and notify anesthesiologist of pertinent medication history.
4. Educate patient and family about pain assessment, monitoring, epidural catheter placement procedure, and epidural analgesic therapy. Document in the educational record. Patient education may include informational brochures (see Patient Teaching) and/or educational video.
RN/ Anesthesiologist
5. Review the material and request that the patient sign the entity-specific: "Acknowledgement of Anesthesia Risks" or "Authorization for and Consent to Surgery or Special Diagnostic or Therapeutic Procedures" form.
RN
6. Perform and document Pre-procedure Verification/Time out/Universal Protocol prior to the start of the procedure as outlined in Policy and Procedure #46849.99—Universal Protocol for Surgical and Invasive Procedures.
RN/ Anesthesiologist
D. Catheter Placement - After the anesthesiologist has inserted the epidural RN/
catheter and given the initial bolus:
Anesthesiologist
COPY
4. Lock the epidural/PCEA/PIEB infusion pump and utilizing Independent Double Check verification process, verify settings with anesthesiologist or a second RN.
5. Remove the protective caps from the tubing and the epidural catheter and, using sterile technique, connect tubing to epidural catheter.
6. Twist tightly to secure tubing connection. Prior to the infusion, perform Independent Double Check verification of medication and pump settings.
7. Barcode medication for safety.

8. Begin the epidural/PCEA/PIEB infusion.
9. Label epidural tubing.
1. Remove the sterile cap from the spike end of the epidural portless tubing and insert into the narcotic solution. Prime the portless tubing.
2. Thread the tubing through the epidural infusion pump per manufacturer's written guidelines.
3. Program the epidural/PCEA/PIEB infusion pump as ordered
following manufacturer's written guidelines. Clear the previous
history in the device.
E. Initial Assessment After Catheter Placement
RN/ Anesthesiologist
1. Assess and document BP, HR, RR, every 2 – 3min. x 4, every 5 minutes x 4, then every 30 minutes after initiation of epidural/PCEA/PIEB infusion. After initiation of the epidural of combined spinal epidural (CSE), if there is a

PROCEDURE:
RESPONSIBILITY:
sustained fetal bradycardia call anesthesiologist back to the room immediately and check maternal blood pressure and uterine tone in order to rule out significant hypotension and uterine overactivity (sustained contraction or tachysystole).
2. Assess and document fetal heart rate every 2 – 3min. x 4, every 5 min. x 4, then per low/high risk parameters.
3. Complete the Posero Opioid-Induced Sedation Scale (POSS) to evaluate for unintended sedation
RN
4. Update fall risk assessmentand the mobilization assessment scale.
F. Ongoing Assessment
RN/ Anesthesiologist
1. Independent Double Check verification for medication identification and pump setting is required for every syringe/bag change and patient hand-off (e.g. shift report, patient transfer).
2. Assess motor function every hour while patient is awake and every 2 hours while patient is asleep in conjunction with repositioning. Notify the anesthesiologist if the patient is unable to move one or both legs.
COPY
3. Assess pain and the POSS every 30 minutes after the initiation of epidural placement.
4. Every 2 hours verify that the epidural catheter is intact and there is no evidence of a leak or dislodgement.
a. If the epidural catheter becomes dislodged or site abnormalities are present, contact the anesthesiologist immediately.
RN
b. If the catheter is disconnected from the tubing (such as for transportation to the operating room), treat the exposed syringe adaptor with sterile technique. Cap the adaptor with a sterile Luer lock plug or a sterile syringe.
c. If the portless tubing becomes disconnected from the epidural catheter, wipe the connection with a sterile 2x2, and call anesthesiologist for instructions.
d. The initial dressing is to remain intact for the length of time the epidural catheter is in place.
5. Assess bladder for fullness every 2 hours. See physician orders for interventions.
6. Assess for nausea/vomiting. See physician orders for interventions.
7. Assess for itching, especially around face and neck. See physician orders for interventions.
G. Anesthesiologist Administrated Bolus
Assess and document BP, HR, RR, every 2 – 3min. x 4 then every 30 minutes after bolus
RN
H. Notification of Anesthesiologist:
RN/

PROCEDURE:
RESPONSIBILITY:
1. When the infusion is stopped to protect the patient or fetus from harm.
2. If the patient exhibits or reports:
a. Poorly controlled, uneven, or unrelieved pain (pain rating greater than patient's comfort goal in spite of the patient's boluses or increases in analgesic dose).
b. Sensory changes or ascending motor block (e.g. SOB, weakness in upper extremity, changes in LOC).
c. Maternal systolic BP less than 90mm Hg or < 75% of baseline, whichever is lower.
d. Unrelieved side effects, e.g., nausea, vomiting, urinary retention, excessive or increasing sedation, respiratory rate less than 12 breaths/minute (compare to patient's usual respiratory rate), and change in character of respirations.
f. Visual disturbances
Anesthesiologist
e. Change in mental status, e.g., disorientation, confusion or hallucinations.
COPY
g. Signs of local anesthetic toxicity (e.g., ringing in ears, metallic taste, circumoral numbness,)
h. Back pain or paresthesia with epidural bolus administration
i. Epidural site redness, soreness, drainage, or edema
j. Head, neck, or back pain.
I. Removal of Epidural Catheter RN/
1. Verify physician's orders.
2. Stop infusion.
3. Assess patient for baseline motor and sensory function.
4. Assess site for hematoma, drainage, and signs of infection.
5. Place patient in the same position that was used to insert the catheter, such that the vertebral interspaces are open. .
6. Apply non-sterile gloves.
7. Remove dressing while maintaining pressure on the tubing just above the insertion site
8. Gently and steadily remove the catheter. If patient complains of pain, develops paresthesia or resistance is met, STOP THE PROCEDURE and notify the anesthesiologist.
9. Once catheter is removed, verify that catheter tip (blue or black tip) is
Anesthesiologist
Epidural/ Patient Controlled Epidural Analgesia (Women’s & Children’s SVCS), 47718.99. Retrieved 9/6/2022. Official copy at http://sharp-healthcare.policystat.com/policy/9980030/. Copyright © 2022 Sharp HealthCare
Page 6 of 10

PROCEDURE:
RESPONSIBILITY:
intact. If the tip is missing notify the anesthesiologist immediately.
10. Evaluate patient's sensory and motor function and notify anesthesiologist if changes from their baseline exist.
11. Document procedure and patient's response.
J. Assessment of Activity Level RN/
1. Post Epidural
a. Perform mobility assessment test (MAT).
b. Assess sensory function, motor strength and patient's ability to stand and bear weight before first attempt to ambulate.
c. Patient must walk with assistance the first time. Use a safe patient mobilization device as indicated.
d. Call anesthesiologist if leg weakness is present 4 hours after last dose, if numbness or weakness increases or if there is new onset of lower back pain.
Anesthesiologist
COPY
K. Documentation Includes: RN/
1. Date/time of assessments.

Anesthesiologist
2. All Independent Double Check verifications will be documented in the electronic medical record
3. Perform full pain assessment to include patient's acceptable level of
pain and patient response to pain (pain rating).
4. BP, HR, RR and activity levels as indicated in Procedure E and F.
5. Status of catheter and insertion site.
6. Use of additional narcotic, sedative, antiemetic, or vasopressors.
7. PCEA/PIEB settings
a. Initial bolus and basal rate
b. The total amount of opioid analgesic received will be documented at change of shift, handoff report, and at time of delivery.
c. The number of PCEA/PIEB attempts, number of injections, and the volume infused.
8. Patient teaching related to PCEA/PIEB
9. Responses to any interventions, including teaching
10. Response to activity and mobilization
11. Presence of any other adverse reactions:

PROCEDURE:
RESPONSIBILITY:
a. Nausea and vomiting
b. Itching
c. Urinary retention, sensory and motor impairment
L. Patient/Family/Significant Other Education -
1. Type of pain management/PCEA/PIEB used (medication name, dose,
frequency, adverse reactions)
2. Avoid touching or manipulating any part of the catheter or tubing.
3. Notify the nurse if the catheter is accidentally removed or any part becomes separated.
4. Notify nurse of any signs or symptoms of pain, itching, backache, tinnitus, metallic taste, headache, bladder fullness or numbness/ tingling, or inability to lift legs off the bed.
5. ONLY THE PATIENT may administer a bolus dose by pressing the button on the dose request cord. Neither the RN nor family member should press PCEA/PIEB button.
RN/ Anesthesiologist
COPY
V. REFERENCES:
A. ACOG Practice Bulletin #209—Obstetric Analgesia and Anesthesia, March, 2019.
B. ACOG Committee Opinion 295: Pain Relief During Labor, 2004; Reaffirmed 2015.
C. American Academy of Pediatrics and American College of Obstetricians and Gynecologists.
Guidelines for Perinatal Care, 8th Edition. Elk Grove Village, IL: AAP; Washington, DC: ACOG, 2017.
D. Practice Guidelines for Obstetric Anesthesia (2016). The American Society of Anesthesiologists.
E. Pain Scale: Refer to document #30327.99, "Patient Screening Assessment & Management of Pain".
F. Horlock, T.T., Vandermeuelen, E., Kopp, S.L, Gogarten, W., Leffert, L.R., & Benzon, H.T. (2018). Regional Anesthesia in the Patient Receiving Antithrombotic or Thrombolytic Therapy. Regional Anesthesia and Pain Medicine, 43(3), 263-309.
VI. ORIGINATOR:
Women’s & Children’s Policy and Procedure Committee
VII. LEGAL REFERENCES:
None

VIII. CROSS REFERENCES:
A. SHC Policy #46962.01 - Acknowledgement of Anesthesia Risks.
B. SHC Policy #30000.01 - Fall Prevention
C. SHC Policy #30308.99 - Pressure Ulcer Treatment and Prevention
D. SHC Policy #30312.99 – Intravenous Patient Controlled Analgesia (PCA)
E. SHC Policy #30311.99 - Epidural/Intrathecal Analgesia/Anesthesia (Non-obstetric)
F. SHC Policy #46849.99—Universal Protocol for Surgical and Invasive Procedures
G. SHC Policy #30338-Independent Double Check
IX. ATTACHMENTS:
None
X. APPROVALS:
COPY
A. SGH Anesthesia Supervisory - Per BM on 6/24/05 – she will advise re: GH approval dates and then we will add GH. 5/2021
B. SGH Pharmacy & Therapeutics - Per BM on 6/24/05 – she will advise re: GH approval dates and then we will add GH.
C. SMH Anesthesia Supervisory - 7/04 SMH Anesthesia Supervisory Committee name changed to SMMC Advisory Supervisory in 2005
D. SMBHW Pharmacy and Therapeutics – 10/04
E. SCVMC Anesthesia Supervisory - 4/6/2005; 5/5/2021 F. SCVMC Pharmacy and Therapeutics – 4/18/2005
G. General Nursing Policy and Procedure – 06/24/05
H. Women's & Children's Policy and Procedure – 09/04; 01/05; 12/08; 5/10; 5/13; 9/13; 7/16; 10/ 19; 4/21
I. System Policy & Procedure Steering Committee – 07/05
XI. REPLACES:
None
XII. HISTORY:
System #47718.99: originally dtd 10/05 Reviewed/Revised: 04/09; 06/10; 12/13; 09/1

Q116

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

Until recently, the hospital policy was to transfer patients who experienced cardiac arrest to the OR for perimortem delivery. We just changed the policy to now perform perimortem Cesarean delivery in LDR or triage. A minimal set of surgical instruments was added to the crash cart. Nursing cardiac arrest education now includes perimortem Cesarean delivery in LDR or triage.

Q117

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

Obstetric Hemorrhage	**Yes**
Severe Hypertension in Pregnancy	**Yes**
Maternal Venous Thromboembolism	**Not a formalized systm**
Cardiac Conditions in Obstetrical Care	**In the beginning stages**
Care for Pregnant and Postpartum People with Substance Use Disorder	**Yes- CMQCC but in revision using the CA MAT/Bridge Program**

Q118

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

Obstetric Hemorrhage

Readiness- • L&D has a hemorrhage cart with supplies to include uterine balloons. Other units have a red bag with hemorrhage supplies appropriate for their unit • Every unit has immediate access to a hemorrhage medication kit in the Pyxis • Our OB Team STAT policy outlines responding team members for hemorrhage response • Massive Transfusion protocols and order sets established. Nurses in OR, PACU and L&D Charge/Resource are trained to operate the rapid transfuser. • Every unit conducts annual education on hemorrhage as well as conducts drills Recognition and Prevention • All OB Patients are screened for hemorrhage risk upon admission, every shift during labor, at delivery and every 12 hours postpartum for the first 24 hours • If increased bleeding is identified, quantitative blood loss is completed to determine blood loss • Standardized oxytocin concentration is used for management of 3rd stage of labor 20 units in 1000 ml. Response • OB Hemorrhage is managed according to CMQCC's 3 stages of OB hemorrhage. The algorithm is on the hemorrhage cart to guide physicians and nurses. • Social Work consult may be placed for patients who are transferred to the ICU, require additional emotional support or there is mother-baby separation. Spiritual care support is also available for patients if needed. Reporting and Systems Learning (Every Unit) • We have a standardized debrief form that may used after critical events. The debriefs are led by either the charge nurse, administrative liaison, or administrator/lead. Multidisciplinary care plans are developed by the CNS for high-risk patients and shared with clinicians. • The Sentinel Event Review Committee reviews all cases where the patient received greater than or equal to 4 units of packed red blood cells or was transferred to the ICU within 24 hours postpartum. • Based upon these case reviews if opportunities for improvement are identified, processes are put into place to address and are monitored. If needed, either an Apparent or Root Cause Analysis is conducted to address issues.

Severe Hypertension in Pregnancy	**Readiness: • Early warning signs and parameters using the Maternal Early Warning Signs (MEWS) criteria are incorporated into the nursing guidelines of care and order set for when to notify the provider for changes in vital signs (blood pressure, heart rate, respiratory rate, oxygen saturation), urinary output, maternal agitation, confusion or unresponsiveness and patient reporting. Monitoring criteria is incorporate into the guidelines of care which states: o If admitted for evaluation of hypertension, assess BP every 15 minutes x 1 hour. After initial 1 hour of BP assessments, obtain individualized physician orders for continued BP frequency and acceptable parameters. o If SBP >160 mmHg or DPB >110 mmHg or ordered parameters are exceeded, continue BP monitoring every 15 minutes and notify physician • We have several order sets to assist in managing of hypertension: o The WHS Hypertensive Disorders of Pregnancy include monitoring parameters, 1st line medications for acute onset of hypertension and ongoing treatment of hypertension, lab, and diagnostic orders. o WHS Eclamptic Seizure and algorithms address management of eclamptic seizures for patients with and without IV access o WHS Magnesium Sulfate Administration PowerPlan outlines management of patients receiving magnesium sulfate for seizure prophylaxis • Nurses receive annual education on hypertensive disorders of pregnancy and as well as drills for eclamptic seizure. • The OB/GYN triage policy lists patients who are experiencing preeclampsia symptoms to be seen urgently. In addition, the nurses in the triage department are competency validated to start treatment with 1st line antihypertensives after systolic blood pressure is 160 mm Hg or greater or diastolic blood pressure is 110 mm Hg or greater for two measurements within 15 minutes in the event a physician doesn’t respond to a page/communication within 10 minutes. The nurses receive annual education and training related to how to carry out the standardized procedure. • Every unit has a system to rapidly access medications used to treat severe hypertension and eclampsia via the eclamptic seizure kit. The kit is available as an override medication kit in the medication Pyxis. The kit is organized for treatment of patients with and without IV access and contains the appropriate algorithms within to help guide providers with approved medications, doses, and escalation. • The hospital has guidelines for consultations to other specialties in the event is it needed. Given that this hospital is considered a Level IV maternity hospital, we would accept transfers into the facility, but not transfer out as we have the**

specialists available to care for high-risk patients. Recognition and Prevention • The Women's Health Universal nursing guidelines of care provide a standard method for obtaining blood pressure for pregnant and postpartum patients: o Take BP readings with patient in semi-fowlers position, especially when needing to accurately assess and trend blood pressure readings. This position is considered the most natural and reflective of the patient's true BP. Placing a patient in left lateral will always produce the lowest BP and not true to the BP the patient is experiencing during waking hours. o Ensure BP cuff is placed at the level of the heart and correct size cuff is used. A cuff that is too large will falsely decrease the patient's BP reading, and a cuff too small will falsely elevate the reading. • Response to maternal early warning signs include: o Communication to the provider should occur promptly – no more than one hour from onset, EARLIER based on severity and clinical judgment – in the following conditions: Recurring abnormal values Multiple abnormal values occurring concurrently Significant deviation from normal o Expectations of physician communication: Clear, concise, verbalize if you are requesting bedside evaluation If the physician doesn't perform bedside evaluation and/or does not request additional intervention at the time you call: Validate your message was heard Request new parameters (ex. Call back if no resolution in one hour, notify physician when a new "threshold" is met such as pulse > 130, etc.) Initiate chain of command (above methods should be attempted first, whenever possible) o Women who are evaluated in triage for hypertension are provided the instructions that review hypertension in pregnancy. All women being discharged from the hospital receive AWHONN's Post-Birth Warning Signs education outlining signs and symptoms to report to their health care provider. We are also working on developing education for women who have severe hypertension in pregnancy and the effect on the cardiovascular system. Response • The facility shares the same order sets and algorithms for management of severe hypertension and eclampsia throughout the health system. The OB triage department will evaluate women presenting with postpartum complications up to 6 weeks postpartum and the standardized procedure to administer 1st line antihypertensives also applies to prevent delay in treatment. • An OB Team STAT code to mobilize the obstetric team will be called for both pregnant and postpartum women experiencing an eclamptic seizure • Emergency Department nurses have received education

concerning postpartum hypertension and eclampsia and we also share the same protocols for management. An OB Team STAT code may be initiated from the emergency department if a pregnant or postpartum woman presents with seizures to mobilize the obstetric team. • Women who are transferred to the ICU due to severe hypertension will have a social worker and case manager assigned for support and to assist with transitional care. Reporting and Systems Learning • Debriefs are conducted with team members following a critical event to include patients who experienced an eclamptic seizure and/or transferred to a higher level of care. • Care plans are created by the clinical nurse specialist and shared with the multidisciplinary team and disseminated to the hospital leadership, physicians, nursing ,and other interdisciplinary members. • The Sentinel Event Committee reviews all cases where patients were transferred to the ICU as a result of severe hypertension and/or eclampsia. Opportunities for improvement are identified and worked on as team. If needed, an apparent cause or root cause analysis may be conducted to address issues identified.

Q119

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

Patients with a history of VTE or PTE are usually placed on Enoxaperin and referred to a Maternal Fetal Medicine specialist. The goal for most patients is to reach 37 weeks gestation and then switch to unfractionated heparin prior to labor and delivery. Should a patient on enoxaparin or another anticoagulant (not unfractionated heparin) present to the hospital before switching to unfractionated heparin, nursing staff, and/or the admitting physician, will notify the anesthesiologist of the situation. The anesthesiologist will review the situation and discusses anesthesia options and concerns with the patient. Anesthesiologists follow the SOAP Consensus guidelines or ASRA guidelines (most of us have the ASRA Coags app on our phones as a quick reference).

Q120

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

Our department supports provision of labor epidural analgesia in women with a platelet count >=70,000.

Patients are assessed on a case-by-case basis when the platelet count is <70,000. The risk of spinal epidural hematoma versus a difficult airway with general anesthesia is discussed with these patients. Many patients with a platelet count of 50,000 – 70,000 receive neuraxial anesthesia.

Page 10: Quality Assurance and Patient Follow-up

Q121

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

Anesthesiologists at SMBHWN are not directly involved with a hospital quality assurance or safety committee but participate when asked.

Policies come from across Sharp Healthcare. Policies that involve the anesthesia department go through the Anesthesia Supervisory Committee (includes representation from SMBHWN). Policies that include medications go through the P&T committee, chaired by a SMBHWN anesthesiologist.

We work closely with the Chief Medical Officers, OB Supervisory Committee, Medical Director of the OR (one of the CMOs) for all policies that related to anesthesia services.

Q122

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

Anesthesiologists at SMBHWN are not directly involved with a hospital quality assurance or safety committee but participate when asked.

Anesthesiologists are involved with many committees at the hospital and within ASMG.

The Head of the Anesthesia Department meets quarterly with the CMOs and nursing administration.

The Sentinel Event Committee, including an anesthesiologist, meets monthly to review maternal and neonatal issues including patients who receive 4 or more units of blood products or unexpected ICU admission. The anesthesiologists have worked with the Blood Bank and Emergency Department physicians to tailor the MTP for obstetric patients.

A member of the anesthesia department is on the Physician Leadership Committee that meets with the CEO on a regular basis.

The Pharmacy and Therapeutics Committee is chaired by an anesthesiologist who reviews and improves many policies and procedures. That anesthesiologist also sits on the Drug Formulary Committee. The committee recommended prescription opioid limits for discharge prescriptions.

We have representation on the Anesthesia Supervisory Committee where patient care concerns or behavior concerns are addressed.

Anesthesiologists are members of the Infection Prevention Committee, Surgical Site Infection Committee, ERAS committee, and Robotic Surgery Committee.

In addition, our department has representation in numerous ASMG committees including the Chiefs Committee, the Nominating Committee, the Quality Improvement Committee, the Physician Hiring and Resource Committee, the Contracting committee, the Insurance Committee, the Physician Well-being committee, Audit Committee, and more.

Q123

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

All patients who receive anesthesia care are visited in person the day after delivery and assessed for complications or concerns related to anesthetic care.

Q124

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

Should a patient suffer an anesthesia-related complication, the patient is evaluated by both the anesthesia department and representatives from the hospital.

Minor complications such as a corneal abrasion or lip laceration are treated in the PACU and usually resolve quickly.

Chipped or broken teeth are “risks of anesthesia” and will not be compensated by the hospital or ASMG.

Neurologic deficits after delivery are co-managed with the obstetricians. A physical therapy consult is obtained for patient safety while the deficit resolves. Should a more serious neurologic deficit or injury happen, a neurologist, neurosurgeon or pain management specialist will become involved.

ASMG maintains good communication with Sharp Healthcare legal teams and patient relations representatives. Serious legal matters are addressed through these channels.

Q125

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

All patients are seen the day following neuraxial anesthesia. Some patients are identified with a PDPH at the postpartum visit. The nursing staff are highly attuned to PDPH and notify the anesthesiologist when a patient complains of a headache, should the headache present after the anesthesia visit.

Each time a patient is identified with a possible PDPH, an anesthesiologist sees the patient, comes to a provisional diagnosis, and discusses the pros and cons of epidural blood patch versus conservative therapy with the patient. We generally wait at least 24 hours after a dural puncture to perform an EBP. Patients are followed in hospital and/or by telephone after a blood patch. A second blood patch may be done, if needed generally at least 24 hours after the first. Some patients choose to leave the hospital with a PDPH hoping it will resolve spontaneously. Those patients can return to the hospital for EBP as they need.

If a patient has a “PDPH” after a second blood patch, other diagnoses are entertained (e.g., cortical venous thrombosis) and braining imaging is recommended.

Q126

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

An anesthesiologist sits on the multidisciplinary Sentinel Event Committee. The committee reviews cases when women received >=4 units of blood products, had an unexpected ICU admission, or any other matter of concern about maternal care. The committee also reviews all cases of infants that were cooled in the NICU or any other neonatal concerns.

Over the last several years, it became apparent that massive OB hemorrhage at times led to very low fibrinogen levels. Consequently, we now provide cryoprecipitate with the 3rd MTP pack (formerly the 4th) and can ask for cryoprecipitate earlier, if needed. We are also using more TEG to evaluate coagulation status in hemorrhage situations. We are attempting to add fibrinogen to the pharmacy as we could then obtain fibrinogen more quickly than we receive cryoprecipitate. The difficulty is that fibrinogen is more expensive than cryoprecipitate and comes from the Pharmacy budget, rather than the Blood Bank budget….

The OB Supervisory committee reviews cases of maternal or fetal concern. They contact the Head of the Anesthesia Department if they have questions about anesthesia care.

We have a good working relationship with the hospital administration. The Head of the Anesthesia Department will be involved in any root cause analysis where anesthesia was involved.

Q127

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

All surgical patients are called by a PACU nurse the day after surgery. Any anesthesia issues are conveyed to the Head of the Anesthesia Department.

We use ePreOp to collect information and evaluate our care, and to relate the care to patient outcomes and complaints. We attempt to contact ALL patients after anesthetic care and solicit their feedback.

Page 11: Supplemental Documentation

Q128

Please upload supplemental documentation #1.

1a SMBHWN SOAP CoE Breen, TW Cirriculum Vitae.doc (87KB)

Q129

Please upload supplemental documentation #2.

1b SMBHWN SOAP CoE Massive Transfusion Protocol- 35177-99 (1).pdf (303KB)

Q130

Please upload supplemental documentation #3.

1c SMBHWN SOAP CoE MASSIVE TRANSFUSION PROTOCOL updated 5_1_21.docx (33.9KB)

Q131

Please upload supplemental documentation #4.

1d SMBHWN SOAP CoE Hemorrhage Drill Checklist.docx (83.2KB)

Q132

Please upload supplemental documentation #5.

1e SMBHWN SOAP CoE PPBTL SBAR .docx (20.1KB)

Q133

Please upload supplemental documentation #6.

1f SMBHWN SOAP CoE Opioid Discharge Prescribing Guidelines 03_28_22.docx (35KB)

Q134

Please upload supplemental documentation #7.

1g SMBHWN SOAP CoE Epidural- Patient Controlled Epidural Analgesia -Womens & Childrens SVCS- 47718-99.pdf (142.8KB)

Q135

Please upload supplemental documentation #8.

1h SMBHWN SOAP CoE Hypertensive disorders in Obstetrics Algorithms 1.11.21.pdf (495.1KB)