Advancing Obstetric Anesthesia in Japan and Beyond Joint Symposium

Raising Standard for the Safe Provision for Every Woman

産科麻酔の発展のためのジョイントシンポジウム

Date: May 21-22, 2021 (US)
May 22-23, 2021 (Jpn)

Virtual ZOOM Conference Platform

In Association with SOAP Annual Meeting 2021
https://www.soap.org/soap-japanese-symposium
# SOAP/Japanese Symposium

Advancing Obstetric Anesthesia in Japan & Beyond

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning Committee</td>
<td>2</td>
</tr>
<tr>
<td>Program Faculty</td>
<td>3</td>
</tr>
<tr>
<td>Program Information &amp; Policies. Speaker Disclosures</td>
<td>8</td>
</tr>
<tr>
<td>Program Agenda</td>
<td>10</td>
</tr>
<tr>
<td>Program Materials</td>
<td>12</td>
</tr>
</tbody>
</table>
Planning Committee

**Ruth Landau, MD**  
Society for Obstetric Anesthesiology, President 2020-2021  
Director of the Division of Obstetric Anesthesia at Columbia  
Columbia University  
New York, New York  
United States

**Rebecca Minehart, MD, MDHPEd**  
Massachusetts General Hospital/Harvard Medical School  
Anesthesia Critical Care & Pain Medicine  
Boston, Massachusetts  
United States

**Heather Nixon, MD**  
University of Illinois College of Medicine  
Department of Anesthesiology  
Chicago, Illinois  
United States

**Yasuko Nagasaka, MD**  
Professor in Anesthesia, Tokyo Women’s Medical University  
Chair and Director of the Department of Anesthesia, Tokyo Women’s Medical University Hospital  
Tokyo, Japan

**Hisako Okada, MD, PhD**  
Juntendo University Nerima Hospital  
Anesthesiology and Pain Medicine  
Tokyo, Japan

Partnering Organizations

- Society for Obstetric Anesthesia and Perinatology (SOAP)  
- Japan Society for Obstetric Anesthesia and Perinatology  
- Japanese Association for Labor Analgesia  
- Japanese Association for Perinatal Anesthesiology
Target Audience
This meeting is intended for Anesthesiologists, Anesthesiologists Assistants, CRNAs, Nurses, Resident /Fellows, and Medical Students interested in the recent advances in obstetric anesthesia and the application of these advances to their practice.

About This Meeting
SOAP has an interest in sharing knowledge and best practices in obstetric anesthesia with colleagues from around the world. We partnered with three Japanese Societies for the 2021 Virtual SOAP/Japanese Symposium to review the data on delivery, postpartum morbidity/mortality, and current maternal safety issues from around the world and discuss international standards for providing safe anesthesia.

Objectives
At the end of this activity participants should be able to:
• Compare and contrast best practices with Japanese and other International obstetric anesthesia providers.
• Discuss benchmarks of expected care to improve standards nationally and internationally.

Accreditation and Designation Statements
This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the American Society of Anesthesiologists and Society for Obstetric Anesthesia and Perinatology. The American Society of Anesthesiologists is accredited by the ACCME to provide continuing medical education for physicians.

The American Society of Anesthesiologists designates this other activity (live and on-demand) for a maximum of 3.75 AMA PRA Category 1 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Commercial Support Acknowledgement
The CME activity is not supported by any educational grants from ineligible companies.

Disclaimer
The information provided at this activity is for continuing medical education purposes only and is not meant to substitute for the independent medical judgment of a healthcare provider relative to diagnostic and treatment options of a specific patient’s medical condition.
Disclosure Policy
The American Society of Anesthesiologists remains strongly committed to providing the best available evidence-based clinical information to participants of this educational activity and requires an open disclosure of any potential conflict of interest identified by our faculty members. It is not the intent of the American Society of Anesthesiologists to eliminate all situations of potential conflict of interest, but rather to enable those who are working with the American Society of Anesthesiologists to recognize situations that may be subject to question by others. All disclosed conflicts of interest are reviewed by the educational activity course director/chair to ensure that such situations are properly evaluated and, if necessary, resolved. The American Society of Anesthesiologists educational standards pertaining to conflict of interest are intended to maintain the professional autonomy of the clinical experts inherent in promoting a balanced presentation of science. Through our review process, all American Society of Anesthesiologists CME activities are ensured of independent, objective, scientifically balanced presentations of information. Disclosure of any or no relationships will be made available for all educational activities.

Disclosures
The following speakers and/or planning committee members have indicated that they have relationships with ineligible companies to disclose:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type of Relationship</th>
<th>Ineligible Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brian Bateman</td>
<td>Grant / Contract</td>
<td>Eli Lilly and Company</td>
</tr>
<tr>
<td>Brian Bateman</td>
<td>Grant / Contract</td>
<td>Takeda California, Inc.</td>
</tr>
<tr>
<td>Brian Bateman</td>
<td>Grant / Contract</td>
<td>GlaxoSmithKline</td>
</tr>
<tr>
<td>Brian Bateman</td>
<td>Grant / Contract</td>
<td>Pacira Pharmaceuticals Inc.</td>
</tr>
<tr>
<td>Brendan Carvalho</td>
<td>Independent Contractor - Consultant</td>
<td>Gauss Surgical Inc.</td>
</tr>
<tr>
<td>Rebecca Minehart</td>
<td>Independent Contractor - Consultant</td>
<td>Rivanna Medical, LLC</td>
</tr>
<tr>
<td>Yasuko Nagasaka</td>
<td>Independent Contractor - Consultant</td>
<td>Masimo Corporation</td>
</tr>
</tbody>
</table>

All relevant financial relationships for this activity have been mitigated.
All other planners, faculty, and staff have reported no relevant financial relationships with ineligible companies to disclose.

CME claim
Post-conference, you will receive an email from the American Society of Anesthesiologists to claim credit for the activity. Please follow these directions to complete the evaluation, claim credit, and print a certificate. The certificate can only be claimed once.

Please note you must claim your credits for this course by December 31, 2021. You will NOT be able to claim credits after this date.
Program Agenda

Friday, May 21, 2021

(Times are listed in US Eastern Time Zone)

7:00pm - 7:15pm  Introductions
  Ruth Landau, MD - SOAP President
  Yasuko Nagasaka, MD

7:15pm - 7:20pm  Session Moderators
  Lisa Leffert, MD & Yasuko Nagasaka, MD

7:20pm - 7:35pm  Japanese Association for Labor Analgesia
  Nobuya Unno, MD

7:35pm - 7:50pm  What Do Japanese Parturients Want?
  Makoto Tokiwa, MD

7:50pm - 7:55pm  BREAK with Music from Naida Cole, MD

7:55pm - 8:15pm  U.S. Perspective: Data to Report Delivery, Postpartum
  Morbidity/Mortality Current Maternal Safety Issues in the
  U.S.
  Brian Bateman, MD, MSc

8:15pm - 8:35pm  Japanese Perspective: Data to Report Delivery,
  Postpartum Morbidity/Mortality Current Maternal Safety
  Issues in Japan
  Masayuki Endo, MD & Rie Kato, MD

8:35pm - 8:50pm  Training in Obstetric Anesthesia in Low Income- Low
  Resources Settings
  Mauricio Vasco Ramirez, MD

8:50pm - 9:00pm  Summary of the Day
  Ruth Landau, MD - SOAP President
  Yasuko Nagasaka, MD
## Program Agenda

**Saturday, May 21, 2021**  *(Times are listed in US Eastern Time Zone)*

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00pm - 7:20pm</td>
<td>Labor Analgesia: Current Environment in Japan and the World</td>
</tr>
<tr>
<td></td>
<td><em>Moderators: William Camann, MD &amp; Tomoko Yorozu, MD</em></td>
</tr>
<tr>
<td>7:20pm - 7:35pm</td>
<td>Labor epidural analgesia: not just a catheter. The European Perspective</td>
</tr>
<tr>
<td></td>
<td><em>Carolyn Weiniger, MD</em></td>
</tr>
<tr>
<td>7:35pm - 7:50pm</td>
<td>American Board of Anesthesiology</td>
</tr>
<tr>
<td></td>
<td><em>Robert Gaiser, MD</em></td>
</tr>
<tr>
<td>7:50pm – 8:05pm</td>
<td>Developing a Fellowship Program for Obstetric Anesthesia</td>
</tr>
<tr>
<td></td>
<td><em>Michaela Farber, MD</em></td>
</tr>
<tr>
<td>8:05pm - 8:15pm</td>
<td>Centers of Excellence (COE): Provision of SOAP Centers of Excellence in US</td>
</tr>
<tr>
<td></td>
<td><em>Brendan Carvalho, MD - SOAP COE Committee Chair</em></td>
</tr>
<tr>
<td>8:15pm - 8:25pm</td>
<td>Centers of Excellence (COE): Provision of SOAP Centers of Excellence in Japan</td>
</tr>
<tr>
<td></td>
<td><em>Hiroyuki Sumikura, MD</em></td>
</tr>
<tr>
<td>8:25pm - 8:35pm</td>
<td>Centers of Excellence (COE): National Center for Child Health and Development</td>
</tr>
<tr>
<td></td>
<td><em>Reiko Ohara, MD</em></td>
</tr>
<tr>
<td>8:35pm - 8:50pm</td>
<td>Joint Discussion: Centers of Excellence (COE)</td>
</tr>
<tr>
<td></td>
<td><em>Brendan Carvalho, MD - SOAP COE Committee Chair</em></td>
</tr>
<tr>
<td></td>
<td><em>Hiroyuki Sumikura, MD</em></td>
</tr>
<tr>
<td></td>
<td><em>Reiko Ohara, MD</em></td>
</tr>
<tr>
<td>8:50pm - 9:00pm</td>
<td>Summary of the Day - Closing</td>
</tr>
<tr>
<td></td>
<td><em>Ruth Landau, MD - SOAP President</em></td>
</tr>
<tr>
<td></td>
<td><em>Yasuko Nagasaka, MD</em></td>
</tr>
</tbody>
</table>
Program Materials
Friday, May 21, 2021 (US)
Saturday, May 22, 2021 (Japan)

日本周産期麻酔科学会
Japanese Association for Perinatal Anesthesiology

一般社団法人日本産科麻醉学会
Japan Society for Obstetric Anesthesia and Perinatology

日本周産期麻醉科学会
Japanese Association for Perinatal Anesthesiology

JALA
The Japanese Association for Labor Analgesia
無痛分娩関係学会・団体連絡協議会
Development of JALA, a platform for safe labor analgesia

Nobuya Unno, MD, PhD
Chairperson, the Japanese Association for Labor Analgesia (JALA)
Past Chairperson of JSOAP
Professor, Department of Obstetrics,
Kitasato University, School of Medicine

I have no COI with regard to this presentation.

Japanese Perinatal Care System
Delivery facilities

Comprehensive Centers for Perinatal Medicine (C-CPM)
1/1 million, N=108, MIFICU, NICU
8% of all deliveries,
800 deliveries by 19.8 OB/GYNs
in average

Regional Centers for Perinatal Medicine (R-CPM)
1/0.3 million, N=298, NICU,
16% of all deliveries,
550 deliveries by 9.0 OB/GYNs
in average

General Maternity Units
- Hospitals N=600
  29% of all deliveries,
  400 deliveries by 3.9 OB/GYNs
  in average
- Clinics N=1200
  47% of all deliveries,
  330 deliveries by 1.5 OB/GYNs
  in average
Japanese Perinatal Care System Summary

• “Small-scale delivery unit” is one of the characteristic features of Japanese perinatal care system.

  • Among 800,000 annual deliveries, more than 40% are managed by about 1,200 small clinics with 1.5 obstetricians and 5.3 midwives, in average.
  • Even in hospitals, number of deliveries in each facility is small, compared to the US and other western countries.

Labor Analgesia (LA) in Japan

- The Japan Society of Obstetrics and Gynecology: 17,057 members
- Japanese Society of Anesthesiologists: 13,519 members

• JSOAP was established in 1961. Members of JSOAP are increasing recently, however, they are still only 3% of JSOG and JSA members.
• In spite of continuous efforts of JSOAP, labor analgesia (LA) has not been very popular in Japan.
• In 2009, a survey showed that LA was applied to only 3.5% of total deliveries in Japan.
What happened in 2017?
Social concerns with safety of labor analgesia

• News papers and TV news reported four cases of serious maternal and neonatal complications of epidural LA (total spinal anesthesia) including 3 maternal deaths and 2 fetal/neonatal deaths which occurred in obstetric clinics during the last 10 years.
  * Repeated media coverages produced enormous social concerns with the safety of LA.

• The ministry of health, labor and welfare (MHLW) decided to develop a study group to investigate the appropriate safety measures of LA.

• I was appointed as a PI of this study as a chairperson of JSOAP.

Health and Labor Sciences Research Grants for Special Purposes 2017
“Study for the analysis of clinical problems and the development of safety measures of labor analgesia”

• Study period: From August 2017 to March 2018. (only 8 months)

• Objectives:
  * To build a consensus of the Japanese medical profession on standards of safe procedures in LA
  * To organize an expert panel with members recommended by 7 professional societies and organizations
    • Japan Medical Association (JMA)
    • Japanese Nursing Association (JNA)
    • Japan Society of Obstetrics and Gynecology (JSOG)
    • Japan Association of Obstetricians and Gynecologists (JAOG)
    • Japan Society of Perinatal and Neonatal Medicine (JSPNM)
    • Japanese Society of Anesthesiologists (JSA)
    • Japan Society for Obstetric Anesthesia and Perinatology (JSOAP)
  * To share most updated and comprehensive clinical data of LA collected by JAOG
  * To propose a roadmap to develop a sustainable system for the promotion of safe LA
Survey on deliveries in 2017 by JAOG
Labor Analgesia (LA) in Japan

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cases</td>
<td>Rate</td>
<td>Cases</td>
</tr>
<tr>
<td>Total</td>
<td>27,719</td>
<td>4.6%</td>
<td>33,372</td>
</tr>
<tr>
<td>Hospitals</td>
<td>13,156</td>
<td>4.3%</td>
<td>15,806</td>
</tr>
<tr>
<td>Clinics</td>
<td>14,563</td>
<td>5.0%</td>
<td>17,566</td>
</tr>
</tbody>
</table>

- About 60% of all the 2,391 delivery facilities in Japan responded to the survey.
- LA was provided in 191 hospitals (32%) and 264 clinics (32%).
- In 2016, deliveries with LA were 6.1% of all deliveries. They appeared increasing both in hospitals and clinics. LA was more common in clinics, compared to hospitals in Japan.

Survey on deliveries in 2017 by JAOG
Anesthesia of Cesarean section in Japan

<table>
<thead>
<tr>
<th>Number of full-time doctors, Median (range)</th>
<th>In charge of anesthesia of C-section (multiple choices, %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OB/GYN</td>
<td>AN</td>
</tr>
<tr>
<td>Hospitals</td>
<td>5 (1-32)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinics</td>
<td>1 (1-7)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Full-time anesthesiologists are rare in clinics providing delivery service in Japan.
- Most of the anesthesia of cesarean section were conducted by obstetricians.
- Even in hospitals, full-time anesthesiologists can take care of only two thirds of C-section anesthesia.
Survey on deliveries in 2017 by JAOG
Doctors in charge of Labor Analgesia (LA) in Japan

<table>
<thead>
<tr>
<th></th>
<th>OB/GYN</th>
<th>OB/GYN with anesthesia training certified by MLHW*</th>
<th>Anesthesiologists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals</td>
<td>62.7%</td>
<td>7.4%</td>
<td>47.0%</td>
</tr>
<tr>
<td>Clinics</td>
<td>84.9%</td>
<td>12.9%</td>
<td>9.1%</td>
</tr>
</tbody>
</table>

(multiple choices, %)

• In the majority of delivery facility with LA service, obstetricians are mainly in charge of LA.
  • Most of OB/GYN doctors in Japan are supposed to have anesthesia training for several months during residency.
  • *To be certified by MLHW, two years’ anesthesia training with experience of more than 300 general anesthesia cases are required.

March, 2018
The recommendations for the development of a system to provide safe labor analgesia by the Study Group organized by MLHW

• Recommendations for facilities providing LA
  • Provide detailed information to pregnant women considering her birth plan and obtain written informed consent.
  • Equip with medical resources necessary for maternal and neonatal monitoring and resuscitation.
  • Determine respective roles of an anesthesia director, doctors providing actual anesthetic service, obstetricians and midwives, and make risk responsibilities clear.
  • Prepare manuals for safe LA.
  • Repeat simulations for maternal emergencies including anesthetic adverse events, routinely.

• Recommendations for professional societies
  • Provide training programs for medical staffs including obstetricians, anesthesiologists, midwives and nurses.
  • Promote disclosure of information on actual medical care.
  • Collect information of malpractices and adverse events associated with LA, analyze their causes and backgrounds, and develop and share measures for prevention.
  • Establish an organization to promote realization of the recommendations of the study group.
A model of management system for safe LA

- The Labor Anesthesia Director is responsible for all activities relating LA.
- One doctor may play several roles in small-scale facilities, however, importance of respective roles must be recognized and fully performed by trained medical staffs for safe LA.

The Japanese Association for Labor Analgesia (JALA)
Established in July, 2018

- **Organizations:**
  - Japan Medical Association (JMA)
  - Japan Society of Obstetrics and Gynecology (JSOG)
  - Japan Association of Obstetricians and Gynecologists (JAOG)
  - Japanese Society of Anesthesiologists (JSA)
  - Japan Society for Obstetric Anesthesia and Perinatology (JSOAP)
  - Japanese Nursing Association (JNA) (a supporting org.)

- **Objectives:** To realize “the recommendations” of the study group.

The Japanese Association for Labor Analgesia (JALA)

General Council

Division for safety training

Seminars of 4 categories
Category A: for analgesia directors (WEB)
Category B: for doctors in charge for OB/GYNs for ANs (WEB)
Category C: Resuscitation simulation
Category D: for midwives and nurses (WEB)

Division for disclosure of information

JALA site for general public
- Basic information on LA
- Detailed information on delivery units providing LA

JALA site for medical professionals
- Seminar information
- Registration of facility data on LA

Division for adverse events analysis

Collection of adverse events associated with LA via JALA site
- Analysis of causes and background
- Sharing of recurrence prevention steps

Information to be disclosed by delivery facilities providing LA

- Number of doctors
  - OB/GYN, AN
  - Full-time, part-time
- Recent deliveries
  - No. of total deliveries
  - No. of deliveries with LA
  - No. of C-section
- Facility’s policy on LA
  - Indications
  - Methods
  - Documents for patient
  - LA Manuals for staffs
- Facility’s resources and equipment

- Measures for maternal and fetal/neonatal emergencies
  - Simulation training for emergencies

Carrier of Doctors in charge
- Qualifications
- Experiences of anesthesia and LA
- Training history of anesthesia and LA
- Attendance of JALA seminars

- Training history of midwives and nurses
- Engagement of JAOG reporting system of adverse events
The Japanese Association for Labor Analgesia (JALA)  
The first 3 years (2018-2020)

<table>
<thead>
<tr>
<th>Division for safety training</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Trial seminars</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Seminars of 4 categories</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Transition to WEB seminars</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Division for disclosure of information</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Developing JALA sites</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Registration of LA facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Release of the list of LA facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Division for disclosure of information</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Developing the system</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Ethical review</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Governmental financial support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Full scale independent operation

The Japanese Association for Labor Analgesia (JALA)  
The first 3 years

• Participants of JALA seminars
  • Category A: 242
  • Category B: 261
  • Category D: 177
    • In 2020, no seminar was held due to COVID-19 pandemic.

• Facilities with willingness to participate in information disclosure by JALA
  • Facilities providing LA in Japan: 400-600
  • Participation agreement: 365
  • Access to JALA registration system: 275
  • Application though JALA registration system: 180
  • Data disclosure on JALA site: 138

• Category C: 261
  • In 2020, no seminar was held due to COVID-19 pandemic.
Future prospects of labor analgesia in Japan

- Social demands for safer and more comfortable delivery with labor analgesia are increasing.
- Short OB/GYN doctors' training period of anesthesia in Japan may be insufficient to achieve safe labor analgesia.
- In Japan, shortage of anesthesiologists may have caused the delay in the hand-over of obstetric anesthesia procedures from obstetricians to anesthesiologists.
- Without experts' support of anesthesiologists, provision of safe labor analgesia would be difficult in small-scale delivery units.
- Involvement of more anesthesiologists is essential to improve safety in obstetric anesthesia.
- We need to discuss whether LA is acceptable in Japanese style small-scale delivery units in the light of current global safety standards.

Acknowledgements

- I would like to express a sincere gratitude to Prof. Ruth Landau and Prof. Yasuko Nagasaka to provide me a chance to share our activities for the safety improvement of LA in Japan with international experts and colleagues.
- I also would like to thank the multidiscipline colleagues of the General Council Members of JALA for their efforts to create and keep this platform for the safety of LA in Japan.
What do Japanese parturients want
ー日本人妊婦が求めていることー

2021 Virtual SOAP/Japanese symposium
May 21st, 2021

常盤 真琴  Makoto Tokiwa MD, FACOG
Assistant Clinical Professor
Department of OBGYN
Columbia University Medical Center

Nothing to disclose

・この発表の目的是日本とNYで
産科医として働き経験のある
産婦人科医としての視点を
紹介することです

・The purpose of this presentation
is to show my perspective as an
OB provider who has worked
both in Japan and NY
A little bit about myself

- 2007 Yamagata University Medical school/Japan medical license
- 2007-2010 Tohoku Kosai hospital
  - 2 years internship (10 months OBGYN)
  - 1 year OBGYN resident
- 2013-2017 NYU medical center OBGYN resident
- 2017- Assistant Clinical Professor, Dept. OBGYN
  Columbia University Medical Center

My images of L&D

In Japan
- No window
- Dim
- Humid and warm

In NY
- Large windows
- Bright and expansive space
- Dry and cool
私の診療  My current practice

• 毎月の出産予定数
  • 10-20件/月
  • そのうち日本人は 40%

• 日本人出産数
  • 2019 62人
  • 2020 52人

• 予定妊婦健診は私が全員診る
• お産は当直医
• 12人の医師のグループ

• Expected deliveries per month
  • 10-20/month
  • Japanese patients: 40%

• Japanese birth
  • 2019: 62 deliveries
  • 2020: 52 deliveries

• All of my patients are seen by me for scheduled visits
• Delivered by the on-call physician
• 12 physicians in my group

コロンビアでの産科麻酔
Obstetric Anesthesia in Columbia

• 何％の患者さんが硬膜外麻酔を入れるか
  • 全患者：90％
  • 日本人患者：95％

• 麻酔を入れない理由
  • 赤ちゃんが出てしまった

• How many % have epidural
  • In general population: 90%
  • Japanese patients: 95%

• The reason not to have epidural
  • Baby came out before epidural
よく聞かれる質問  FAQ

• “無痛分娩”になりますか？
• 事前にクラスをとる必要ありますか？
• お産予約必要ですか？

Will it be ”painless delivery”?

• Do I need to take a class?
• Do I need to schedule my delivery?

クラスや検診でお話しすること  What I talk about in my prenatal class/visits

• パンデミックになってから、自分の日本人患者さん向けにオンラインクラスをしています。

• “無痛分娩”
• 硬膜外麻酔

• Since pandemic started, I’ve been holding prenatal classes only for my Japanese patients to answer the common questions

• ”painless delivery”
• Epidural anesthesia
Epidural anesthesia 硬膜外麻酔

• 無痛分娩ではない
• 麻酔をするかしないか、いつするかは患者さんの自由
• 麻酔科の先生は２４時間３６５日L&D常駐
• 特に事前のクラス、予約は必要なし
• 麻酔科の先生は、麻酔のrisks/benefitを説明しにくる
• 早く入れすぎて効果が切れないことはない
  • 足りなかったら追加の薬を入れられる
• ５分間ベッドに座っていられる間に入れたほうがいい
• 副作用：かゆい、脚が重い、歩けない

産後の感想 Comments after delivery

• 麻酔が入った瞬間、温泉に入ってるみたいでした。

• どうやって日本人が麻酔なしでお産しているのかわからない

• こんなにお産が楽って知ってたら、もっと早く二人目を授かってたのに…

• 産後も楽でした。

• "The moment my epidural went in, I was in hot spring"

• "I don’t know how Japanese women have babies without epidural"

• "If I had known the delivery was so easy, I would’ve had the second one sooner"

• “the recovery was so easy"
To provide safe OB anesthesia 24/7

• Obstetric Anesthesia team 24/7
  • 10 attendings: all have a formal training in Anesthesiology of a minimum of 4 years and have ALL undertaken an Obstetric Anesthesia Fellowship.
  • 1-2 attendings and 2-3 residents/fellows
  • Each procedure is supervised
  • OB team
  • Nursing
  • 10 L&Ds, 3 ORs
  • 4873 deliveries in 2017

In summery

• Japanese parturients
  • Are looking forward to having OB anesthesia
  • Have good experience with OB anesthesia
  • Want to have SAFE OB anesthesia in Japan

• It may increase live-birth in Japan
ご静聴ありがとうございます
Thank you for listening

• Special thanks to
  • Dr. Landau Ruthi
  • Dr. Nagawaka Yasuko
  • Dr. Okada Hisako

• All mothers who delivered in Columbia L&D

例えば  Example

• Patient come to triage in labor
• Admitted
• Patient tells her nurse she wants epidural
• Nurse call anesthesia team and OB team
• Epidural in. PCA on
• Needs more meds, call anesthesia team.
• OB team check as needed
### Deliveries in NYS (ニューヨークのお産数)

- **Total deliveries in NYS**: 227,014 in 2017
  - 43 hospitals >2000 deliveries: 167,490 (73%)
  - 70 hospitals >1000 deliveries: 39,885 (91%)

NY State Dep. of Health NYS health profiles
https://profiles.health.ny.gov/measures/all_state/16511

### 日本でのお産

- **Live birth in Japan in 2020**: 872,683 (厚生労働省)
  - 7 hospitals > 2000 deliveries/year
  - 20256/872683 = 2.3%
  - 78 hospitals >1000 deliveries/year
  - 87348+20256=107604/872683 = 12%

日本病院情報局 産婦人科病院・診療所 年間分娩件数ランキング
病院の違い

・ニューヨークでは
U.S. PERSPECTIVE:
DATA TO REPORT ON MATERNAL MORTALITY IN THE U.S.

Brian T. Bateman, MD, MSc
Vice Chair for Faculty Development
Chief, Division of Obstetric Anesthesia
Department of Anesthesiology
Brigham and Women’s Hospital
Associate Professor of Anesthesia
Harvard Medical School
Outline

• Data sources to report on maternal mortality
• Causes/preventability
• Racial disparities
• New data sources to better understand maternal mortality

Maternal mortality in the U.S.

• Increasing focus on maternal mortality in the U.S.
• Estimated that ~700 women die each year because of pregnancy or delivery complication
• Maternal mortality rate higher than other developed countries
• Certain groups are disproportionately affected
Data sources

- Maintained by the Centers for Disease Control and Prevention

- National Center for Health Statistics
  - Based on death certificates
  - Rely on International Classification of Disease codes and pregnancy checkbox
  - Between state variation in the incorporation of checkbox rendered these data less reliable
  - Not reported since 2007

- Pregnancy mortality surveillance system
  - Based on state vital statistics reports
  - Linkages between death and birth/fetal death certificate
  - Media searches
  - Maternal mortality review committee data
  - Classification of deaths based on review of available data by clinically trained reviewers

- Pooled data for state maternal mortality review committee data
  - Gold-standard
  - Highly granular
Nomenclature

- Pregnancy-associated death
  - Death during pregnancy or within one-year postpartum (regardless of type or duration of pregnancy)

- Pregnancy-related death
  - Causally and temporally related to pregnancy
  - Death resulting from:
    - Complications of the pregnancy itself,
    - The chain of events initiated by the pregnancy,
    - Aggravation of an unrelated condition by the physiological or pharmacological effect of pregnancy.
National Center for Health Statistics

- Penicillin
- Better nutrition
- Aseptic technique
- Blood transfusion
Pregnancy mortality surveillance system

CAUSES OF MATERNAL MORTALITY


Preventability

- Derives from Maternal Mortality Review Committee (MMRC) Data

- If the Committee decides:
  - At least some chance of the death being averted by one or more reasonable changes to patient, community, provider, facility, and/or systems factors.

- Based on MMRC reviews from 14 states
  - 66% of deaths preventable

- In general, hemorrhage, hypertension, VTE, and infection considered more preventable forms of death


RACIAL AND ETHNIC DISPARITIES


Proportion of preventable deaths

Racial disparities

- Some of the most profound in all of medicine in the U.S.
- Expose systemic racism in the US society and healthcare system
- Similar proportion of preventable deaths among different races/ethnicities
  - ~3-times more preventable deaths in Blacks
- An area the needs more intensive investigation to understand the causes of these disparities, as well as to define effective approaches to mitigate them

New directions

- Limitation of the current approach to surveillance is the lack of longitudinal data
- We have created a linkage between a pregnancy cohort in the Medicaid Analytic Extract (MAX) and national death certificate index
- Allow us to study the diagnoses, procedures, medications, and healthcare encounters that preceded maternal death
- May provide insight into preventable factors not captured in traditional datasources
  - Medication compliance, late registration to prenatal care, loss of insurance, etc.
- Funded by NIDA to examine incidence and risk factors for opioid-related maternal mortality
Summary

- Robust data on maternal mortality need to inform QI efforts
- U.S. MMR is higher than most developed countries
- 2/3 of maternal deaths are preventable
- Racial disparities that need to be urgently addressed
- Challenge ahead to refine our understanding of causes of preventable maternal death and what interventions can mitigate them

Thank you!

- BBateman@bwh.harvard.edu
Current Maternal Safety Issue in Japan

Masayuki Endo, M.D., Ph.D.
Division of Health Science, Osaka University

Disclosure Statement

I have no conflicts of interest to disclose concerning this presentation
Maternal Mortality Ratio is 3-5 per 100,000 in Japan.

% of deliveries in Health facilities in Japan
Small Group Operation, Numerous facilities

<table>
<thead>
<tr>
<th></th>
<th>New York State</th>
<th>Osaka Prefecture</th>
</tr>
</thead>
<tbody>
<tr>
<td># of birth</td>
<td>235,000 (in 2015)</td>
<td>69,435 (in 2015)</td>
</tr>
<tr>
<td>Total Maternity Hospitals/Clinics</td>
<td>151</td>
<td>142</td>
</tr>
<tr>
<td>Average # of deliveries at one facility</td>
<td>1556.3</td>
<td>489.0</td>
</tr>
</tbody>
</table>

Average # of deliveries at a facility is about 400 in Japan.

<table>
<thead>
<tr>
<th></th>
<th># of facilities</th>
<th># of deliveries</th>
<th>Average # of deliveries per facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,535</td>
<td>1,019,423</td>
<td>402.1</td>
</tr>
<tr>
<td>General Perinatal Medical Centers</td>
<td>104</td>
<td>82,042</td>
<td>788.9</td>
</tr>
<tr>
<td>Regional Perinatal Medical Centers</td>
<td>292</td>
<td>160,534</td>
<td>549.8</td>
</tr>
<tr>
<td>Other Hospitals</td>
<td>696</td>
<td>280,350</td>
<td>402.8</td>
</tr>
<tr>
<td>Clinics</td>
<td>1,443</td>
<td>496,497</td>
<td>344.1</td>
</tr>
</tbody>
</table>

Ishikawa M.: 2015
# of Full-Time Obstetrician and Anesthesiologist in each hospital / clinic

2017 Japan Association of Obstetricians and Gynecologists

Who takes care of maternal anesthesia of scheduled cesarean sections?

<table>
<thead>
<tr>
<th></th>
<th>Hospitals</th>
<th>Clinics</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-Time Anesthesiologist</td>
<td>65±41%</td>
<td>8±26%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Part-Time Anesthesiologist</td>
<td>21±32%</td>
<td>22±39%</td>
<td>0.687</td>
</tr>
<tr>
<td>Obstetrician only for Maternal Anesthesia</td>
<td>9±25%</td>
<td>25±41%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Obstetrician for Maternal Surgery</td>
<td>31±43%</td>
<td>82±35%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>others</td>
<td>7±24%</td>
<td>15±35%</td>
<td>0.001</td>
</tr>
</tbody>
</table>

2017 Japan Association of Obstetricians and Gynecologists
How can we maintain the maternal safety?

WHO: Obstetrical Near Miss

<table>
<thead>
<tr>
<th>Clinical criteria</th>
<th>Management-based criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute cyanosis</td>
<td>Use of continuous vasoactive drugs</td>
</tr>
<tr>
<td>Gagping</td>
<td>Intubation and ventilation for ≥ 60 min not related to anesthesia</td>
</tr>
<tr>
<td>Respiratory rate &gt; 40 or &lt; 6/min</td>
<td>Hysterectomy following infection or hemorrhage</td>
</tr>
<tr>
<td>Shock</td>
<td>Dialysis for acute renal failure</td>
</tr>
<tr>
<td>Oliguria non-responsive to fluids or diuretics</td>
<td>Transfusion of ≥ 6 units red cell transfusion</td>
</tr>
<tr>
<td>Clotting failure</td>
<td>Cardio-pulmonary resuscitation (CPR)</td>
</tr>
</tbody>
</table>

- Loss of consciousness lasting ≥ 12 h
- Loss of consciousness and absence of pulse/heart beat
- Stroke
- Uncontrollable fl/intotal paralysis
- Jaundice in the presence of pre-eclampsia
- Oxygen saturation < 90% for ≥ 60 min
- pH < 7.1
- PaO2/FiO2 < 200 mmHg
- Lactate > 5
- Creatinine ≥ 2 mg/dl or ≥ 3.5 mg/dl
- Acute thrombocytopenia (< 50,000 platelets)
- Bilirubin > 100 umol/l or ≥ 6.0 mg/dl
- Loss of consciousness and the presence of glucose and ketoads in urine
Obstetrical Near Miss case occurs 59 per 10,000 deliveries in Osaka

Transport System for Obstetrical Near Miss Cases in Osaka

142 facilities

Perinatal Center + Emergency Medical Care Center (9 institutions)
Transport Rate of Obstetrical Near Miss Cases in Osaka

<table>
<thead>
<tr>
<th>Year</th>
<th>Transport Rate</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>56%</td>
<td>N=392</td>
</tr>
<tr>
<td>2014</td>
<td>38%</td>
<td>N=406</td>
</tr>
<tr>
<td>2015</td>
<td>41%</td>
<td>N=450</td>
</tr>
<tr>
<td>2016</td>
<td>37%</td>
<td>N=398</td>
</tr>
<tr>
<td>2017</td>
<td>45%</td>
<td>N=372</td>
</tr>
<tr>
<td>2018</td>
<td>43%</td>
<td>N=427</td>
</tr>
</tbody>
</table>

% of Transport Obstetrical Near Miss Cases

Japanese Model of Perinatal Regionalized Care

Something happens, then Transport!!

Level III/ Regional Perinatal Center
NICU • Anesthesiologist/EMCC

Small Group Operation, Numerous facilities

Maternal/Neonatal Transport
Future model: Perinatal Regionalized Care

Future Direction

• Need to differentiate the functions of hospitals and clinics
• Need to centralize limited medical resources for perinatal care (such as human resources; obstetricians, anesthesiologists etc.)
Thank you for your attention.
Advancing Obstetric Anesthesia in Japan and Beyond Joint Symposium

Raising Standard for the Safe Provision for Every Woman

Training in Obstetric Anesthesia in Low Income - Low Resources Settings

Mauricio Vasco Ramírez.
mvascor@ces.edu.co

No disclosures
Managing intergenerational differences in academic anaesthesia
Robert E. Shangraw and Charles W. Whitten

Generation Alpha, born from about 2011 until 2025.
MASTOL’S HIERARCHY OF NEEDS

Gain vital insights into how to motivate people

Personal accomplishment
Esteem
Belonging
Security
Physiological

Basic
Human Needs

Self-actualization
Competence, Problem solving, Authority, Spontaneity
Esteem
Self-esteem, Confidence, Achievement
Social Needs
Friends, Family
Safety and Security
Physiological Needs (survival)
Air, Shelter, Water, Food

WiFi
Battery
How they are going to learn and how we are going to teach them?
The majority of maternal and neonatal deaths could be prevented with *early recognition and proper implementation of required skills and knowledge*.

Community-Based Intervention Packages reduce morbidity for women, mortality and morbidity for babies, and improves care-related outcomes particularly in low- and middle-income countries, LMIC’S.
Training future anesthesiologists in obstetric care

Mauricio Vasco Ramirez

The LatinAmerican education packages for OB emergencies.

Twelve tips for integrating massive open online course content into classroom teaching

Peter G. M. de Jong, James D. Pickering, Renée A. Hendriks, Bromwen J. Swinnerton, Fereshte Goshtasbpour and Marlies E. J. Reinders

MOOC

Massive: There may be 100,000+ students in a MOOC.
Open: Anyone, anywhere can register for these courses.
Online: Coursework is delivered entirely over the Internet.
COURSE: MOOCs are very similar to most online college courses.
Training in obstetric care.

Curr Opin Anesthesiol 2017, 30:313–318
A Different Approach
LIGHTWEIGHT COMPACT EQUIPMENT

PART TASKS SIMULATORS
Dilation and curettage (D&C) / Manual Vacuum aspiration (MVA)

Pitaya – pitahaya – dragon fruit – papaya
MAMA U®

SIMULATED UTERUS

BAKRI BALLOON

BAKRI BALLON
MAMA - U
LOW COST - ACCESSIBLE

SIMULATED UTERUS

UTERINE BALLOON TAMponade

Bakri Balloon

Condom - Foley

Glove - Foley
UTERINE BALLOON TAMPONADE

HEMOSTATIC SUTURES / B – Lynch sutures
UTERUS SIMULATED FOR HEMOSTATIC SUTURES
PANTYHOSE - Sheer tights and FOAM
ABDOMINAL PACKING - VACUUM PACK TECHNIQUE

PINK BALLON - BOWEL
CUSUM: A tool for early feedback about performance?

Winston R Chang*† and Ian P McLean†
Cumulative Sum learning curve

Using standardized steps (rubrics in education), allow quantifying how many times a procedure is needed to get away from the error.

RESULTS:

The mean number of ETI cases required to reach the predefined level of performance was 74.7

Cusum analysis is a useful tool to assess resident proficiency at insertion of labour epidurals

Conclusion:
This study illustrates that some residents may need as many as 75 attempts to ensure proficiency.

BMC Anesthesiol. 2017 Jun 2;17(1):74

Determining the amount of training needed for competency of anesthesia trainees in ultrasonographic identification of the cricothyroid membrane

Conclusions
After a short 2-h training session, most anesthesia trainees achieved competence in ultrasonographic identification of the cricothyroid membrane with less than 20 scans in a mean time less than 60 s. and that they remain reasonably competent 3 months.
Conclusion:
With appropriate training and supervision, it is estimated that anesthesiologists will achieve a 95% success rate in bedside qualitative ultrasound assessment after performing approximately 33 examinations.


Anesthesiologists’ learning curves for bedside qualitative ultrasound assessment of gastric content: a cohort study

Les courbes d’apprentissage des anesthésiologistes pour l’évaluation du contenu gastrique par échographie qualitative au chevet: une étude de cohorte

Cristian Arcosa, MD · Jose C. A. Carvalho, MD, PhD · Javier Cubillos, MD · Xiang Y. Ye, MSc · Anahi Perlis, MD

The procedure was considered mastered after performing 16 blocks on average for a 90% success rate. The average time (SD) to complete the block decreased from 6.8 (4.1 min) at the beginning to 2.8 (1.3) min at the end of the study.


Evaluating the learning curve for the transversus abdominal plane block: a prospective observational study

Florence Vial, MD · Sébastien Mory, MD · Philippe Guerci, MD · Benoît Grandjean, MD · Léa Petry, MD · Adeline Perretin, MD · Hervé Rouzaud, PhD
### PROCEDURES

#### RUBRICS

**Countries / City GOVERNMENT SUPPLIES OBSTETRIC EMERGENCIES KIT**

#### BIBLIOGRAFÍA RECOMENDADA.

Libros:


---

<table>
<thead>
<tr>
<th>Numero</th>
<th>Habilidad del alumno</th>
<th>La realizó</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Se presenta con el paciente y se le indica el procedimiento que le va a realizar.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Proporciona un trato cordial al paciente.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Utiliza la técnica aseptica en toda la practica</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Realiza el enjuagado con técnica aseptica.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Realiza el lavado de la región genital.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Comprueba la integridad del globo</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Realiza el cambio de guantes previo a la instalación de la sonda</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Introduce la sonda en el sitio anatómico adecuado</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Proporciona indicaciones generales para el cuido de la sonda</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Explica posibles complicaciones del procedimiento al paciente</td>
<td></td>
</tr>
</tbody>
</table>
Non-technical skills (NTS):
Behaviors in the perioperative environment not directly related to the use of drugs, equipment or medical expertise, studies have shown that in high-risk professions, including medicine, 50 – 80% of adverse events or errors in health care are due to human behavior failures related to deficits in nontechnical skills.


Management strategies using non-technical skills to reduce maternal and perinatal morbidity and mortality®

Mauricio Vasco Ramírez*
**Obstetric early warning score (OEWS)**

<table>
<thead>
<tr>
<th>Clinical Parameter</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Normal</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systolic blood pressure (mm Hg)</td>
<td>&lt;80</td>
<td>80–89</td>
<td>90–139</td>
<td>140–149</td>
<td>150–159</td>
<td>≥160</td>
<td></td>
</tr>
<tr>
<td>Diastolic blood pressure (mm Hg)</td>
<td>&lt;80</td>
<td>90–99</td>
<td>100–109</td>
<td>≥110</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory rate (breaths per min)</td>
<td>&lt;10</td>
<td>10–17</td>
<td>18–29</td>
<td>≥30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart rate (per min)</td>
<td>&lt;60</td>
<td>60–110</td>
<td>111–149</td>
<td>≥150</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%O₂ required to maintain SpO₂ 96%</td>
<td>Room air</td>
<td>24–39 %</td>
<td>≥40 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature (°C)</td>
<td>&lt;34.0</td>
<td>34.0–35.0</td>
<td>35.1–37.9</td>
<td>38.0–39.9</td>
<td>≥39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of consciousness</td>
<td>Alert*</td>
<td>Not alert**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*[Image of a person pressing a 'Help' button]*
**MET (Medical Emergency Team):**
Equipo que asiste condiciones de salud críticas (“crisis”) con capacidad completa para proporcionar cuidado crítico en el área de intervención

**RRT (Rapid-Response Team):**
Equipo que asiste condiciones de salud críticas (“crisis”) con menos personal y de acuerdo al tipo de situación solicita más personal (“Ramp up”)
SBAR

A technique for communicating critical information that requires immediate attention and action concerning a patient’s condition

**Situation** – What is going on with the patient?
“I am calling about Mrs. Joseph in room 251. Chief complaint is shortness of breath of new onset.”

**Background** – What is the clinical background or context?
“Patient is a 62-year-old female post-op day one from abdominal surgery. No prior history of cardiac or lung disease.”

**Assessment** – What do I think the problem is?
“Breath sounds are decreased on the right side with acknowledgment of pain. Would like to rule out pneumothorax.”

**Recommendation and Request** – What would I do to correct it?
“I feel strongly the patient should be assessed now. Can you come to room 251 now?”

---

Check-Back

Using closed-loop communication to ensure that information conveyed by the sender is understood by the receiver as intended.

The steps include the following:
1. Sender initiates the message
2. Receiver accepts the message and provides feedback
3. Sender double-checks to ensure that the message was received

Example:
**Doctor:** “Give 25 mg Benadryl IV push”
**Nurse:** “25 mg Benadryl IV push”
**Doctor:** “That’s correct”
WHO Safe Childbirth Checklist Implementation Guide
Improving the quality of facility-based delivery for mothers and newborns

www.who.int/patientsafety
Introduction of the WHO Safe Childbirth Checklist program.

Operating Room Crisis Checklists

Do not remove book from this room

2 Anaphylaxis

Hypotension, bronchoospasm, high peak airway pressures, decreased or lack of breath sounds, tachycardia, urticaria

**START**

1. Call for help and a code cart
   - Ask: "Who will be the code manager?"
2. Give epinephrine bolus (may be repeated)
3. Open IV fluids and/or give fluid boluses
4. Remove potential causative agents
5. Turn FIO₂ to 100%
6. Establish/secure airway
7. Consider...
   - Turning off volatile anesthetics if patient remains unstable
   - Vasopressin for patients with continued hypotension despite repeated doses of epinephrine
   - Epinephrine infusion for patients who initially respond to bolus doses of epinephrine but experience continued symptoms
   - Diphenhydramine
   - H₂ blockers
   - Hydrocortisone
   - Thymase level: Check within first hour, repeat at 4 hr and at 18–24 hrs post reaction
   - Terminate procedure

---


Simulation-Based Trial of Surgical-Crisis Checklists

Alexander F. Arriaga, M.D., M.P.H., Sc.D., Angela M. Bader, M.D., M.P.H.,
Judith M. Wong, M.D., M.P.H., Stuart R. Lipsitz, Sc.D.,
William E. Berry, M.D., M.P.H., M.P.A., John E. Zierer, M.D., M.P.H.,
David L. Hepner, M.D., Daniel J. Boorman, B.S., Charles N. Pozner, M.D.,
Douglas S. Smink, M.D., M.P.H., and Atul A. Gawande, M.D., M.P.H.

Simulation, Training, Research, and Technology Utilization System (STRATUS) Center for Medical Simulation, Brigham and Women’s Hospital, Harvard School of Public Health

---

![Chart showing failure of adherence to critical steps with and without checklists](chart.png)

P < 0.001
## Labor & Delivery Crisis Checklists

**NEWTON-WELLESLEY HOSPITAL**

1. Altered Mental Status
2. Anaphylaxis
3. Cardiac Arrest - VF/VT
4. Cardiac Arrest - Asystole/PEA
5. Cardiovascular Collapse
6. Cord Prolapse
7. Eclampsia
8. Hemorrhage
9. Hypertension
10. Impacted Fetal Head
11. Local Anesthetic Toxicity
12. Magnesium Toxicity
13. Respiratory Distress
14. Sepsis
15. Shoulder Dystocia
16. Tachycardia - Unstable
17. Uterine Inversion

---

**Emergency Obstetric Anesthesia Manual**

- Maternal Cardiac Arrest
- Amniotic Fluid Embolism
- Anaphylaxis
- Bronchospasm
- Depressed Conscious Level
- Difficult Airway
- DKA in Pregnancy
- Maternal Hemorrhage
- Maternal Hypertension
- Maternal Hypoglycemia
- Maternal Hypotension
- Maternal Hypoxia
- Local Anesthetic Systemic Toxicity
- Massive Transfusion Protocol
- Placental Abruption
- Placenta Accreta
- Prolapsed Umbilical Cord
- Maternal Seizure
- Maternal Sepsis
- Hypotension After Delivery
- Maternal Preeclampsia
- Thyroid Storm
- Transfusion Reaction
- Twin Vaginal Delivery
- Uterine Atony
- Uterine Inversion
- Failed Epidural Technique - Anesthetic Society
- General Anesthesia
- Maternal Intubation
- Anesthesia Box - Anesthetic Society
- Troubleshooting - Anesthetic Society

Cognitive Aids in Obstetric Units: Design, Implementation, and Use

Gillian Abir, MBChB, FRCA,* Naola Austin, MD,* Katherine M. Seligman, MD,† Barbara K. Burian, PhD,‡ and Sara N. Goldhaber-Fiebert, MD*

7

Eclampsia

START
1. Call for help
2. Ask “Who will be the point manager?”
3. Drive manager designee to file
4. Prepare OR for possible C-section, notify BD & BSN
5. Support among supplemental OB
6. IV access
7. Establishing venous access and loading drugs begins in labor
8. Lateral dorsal position, assisted ventilation
9. Monitor mother and baby
10. Fluid IV if needed
11. ECC SP (1:1, 1:2, etc)
12. If edema present, administer Lasix or Phenytoin
13. Antihypertensive if BP >160 or MAP >110
14. Bladder catheter

Sim Healthcare 7:1-9, 2012

Does Every Code Need a “Reader?” Improvement of Rare Event Management With a Cognitive Aid “Reader” During a Simulated Emergency

A Pilot Study

Amanda R. Burden, MD;
Zyad J. Carr, MD;
Gregory W. Stamos, RN;
Jeffrey J. Littman, MD, MS;
Marc C. Torjman, PhD

Cognitive Aid readers
Training in obstetric care.
Curr Opin Anesthesiol 2017, 30:313–318
A history of simulation-enhanced interprofessional education

Janice C. Palaganas¹, Chad Epps² and Daniel B. Reimer³
Recommendation One: Grade A.

All members of a team should be encouraged by their organization/managers to participate in teamwork education programs in order to foster a positive culture of learning and teamwork within the team.

This recommendation is appropriate and applicable to all health professionals in acute hospital settings, is associated with positive experiences for participants of teamwork education programs and has a beneficial effect on participants.

SCENARIOS

- Active management of the third stage of labor.
- Retained Placenta.
- Postpartum Hemorrhage
- Neonatal CPR
Strengthening the Vital Anaesthesia Simulation Training (VAST) course in low-resource settings

Update in Anaesthesia, Volume 33, January 2019

The Vital Anaesthesia Simulation Training (VAST) course: immersive simulation designed for low-resource settings

Adam Mossenson, Christian Mukwes and Patricia Livingston

Table 1. Course overview

<table>
<thead>
<tr>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to simulation</td>
<td>Obstetric case-based discussion</td>
<td>Paediatric case-based discussion</td>
</tr>
<tr>
<td>Facilitator-led scenario</td>
<td>Obstetric preoperative assessment</td>
<td>Paediatric preoperative assessment</td>
</tr>
<tr>
<td>Clinical frameworks</td>
<td>Caesarean section (C-section) under spinal</td>
<td>Paediatric laryngospasm</td>
</tr>
<tr>
<td>Non-technical skills</td>
<td>anaesthesia</td>
<td>Trauma primary survey</td>
</tr>
<tr>
<td>Emergency surgery preoperative assessment</td>
<td>General anaesthesia for C-section</td>
<td>Trauma – paediatric</td>
</tr>
<tr>
<td>Pre anaesthesia preparation</td>
<td>Intrapartum haemorrhage</td>
<td>Trauma – adult</td>
</tr>
<tr>
<td>Unanticipated difficult intubation</td>
<td>Post-partum haemorrhage</td>
<td>Trauma – adult reassessment</td>
</tr>
<tr>
<td>Rapid sequence induction</td>
<td>Postoperative sepsis</td>
<td>No easy answers</td>
</tr>
<tr>
<td>Pain case-based discussion</td>
<td>Morning handover in recovery</td>
<td>Commitment to change</td>
</tr>
<tr>
<td>Neonatal resuscitation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WFSA
Association of Anaesthetists
The SAFE Operating Room Course

The SAFE OR course is a multidisciplinary three-day short course for teams of surgeons, obstetricians, nurses and anaesthetists. It is delivered in small groups using low-tech simulation, discussions and role-play, with a few key lectures. The course focuses on the major ‘killers’ in surgery – anaesthesia emergencies such as loss of airway and high spinal, and surgical emergencies such as sepsis, polytrauma and haemorrhage. We also include sessions on the fundamental principles that underlie modern surgical practice – leadership and communication, surgical site infection prevention, antibiotic stewardship, the WHO Checklist, and enhanced recovery in a LMIC setting.

Obstetric Medicine, 2017, March. 10 (1) 16–20

Developing Obstetric Medicine training in Latin America
José Rojas-Suarez1,2,3, Niza Suarez1,2 and Oier Ateka-Barrutia2

Educational programs and Obstetric Medicine

Global ALSO

Maternal collapse (Colapso Materno©)

• Simulation center – In situ.
• Interprofessional training.
• Integrated clinical and teamwork/human factors elements.
• High fidelity simulation models.
• T&T course and training for all staff annually.
• Intrauterine resuscitation during labor and Neonatal CPR

Transfer of learning and patient outcome in simulated crisis resource management: a systematic review
Sylvain Boet, MD • M. Dylan Bould, MBChB • Lii Fung, MD • Haytham Qusa, MD • Laure Perrier, MLIS • Walter Tavares, PhD(c) • Scott Reeves, PhD • Andrea C. Tricco, PhD

Conclusions:
This systematic review found that team work / crisis resource management (CRM) skills learned at the simulation center are transferred to clinical settings, and the acquired team work / crisis resource management (CRM) skills may translate to improved patient outcomes, including a decrease in mortality.
Latin America maternal mortality ratio (MMR)

<table>
<thead>
<tr>
<th>Country and territory</th>
<th>MMR point estimates&lt;sup&gt;a,b&lt;/sup&gt;</th>
<th>Overall change in MMR between 2000 and 2017&lt;sup&gt;c&lt;/sup&gt; (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolivia (Plurinational State of)</td>
<td>331</td>
<td>271</td>
</tr>
<tr>
<td>El Salvador</td>
<td>73</td>
<td>62</td>
</tr>
<tr>
<td>Guatemala</td>
<td>161</td>
<td>142</td>
</tr>
<tr>
<td>Paraguay</td>
<td>162</td>
<td>136</td>
</tr>
<tr>
<td>Honduras</td>
<td>85</td>
<td>77</td>
</tr>
</tbody>
</table>

Morbidity and mortality before and after introduction of ALSO program at the Clínica de Maternidad Rafael Calvo de Cartagena, Colombia.
Colombia
Met one of the primary Goals in 2010 – 2011
Decrease pays for medical claims in obstetrics

Bolivia:
Decrease in Maternal mortality for haemorrhage
6 months after intervention

Guatemala:
Increase Tranexamic acid and crio use.
Update in Anaesthesia, Vol 34, September. 2019

Editorial

Obstetric anaesthesia in resource limited settings

Mauricio Vasco Ramírez
Chairman, WFSA Obstetric Anaesthesia Committee
Clinical Simulation Director, Universidad CES
Medellín, Colombia

“As in all fields of skill development, the risk to countries and institutions in LMICs is that health care trainees can use newly acquired skills to move to the more desirable urban areas, another countries and/or higher paying posts; to avoid this it is important to build successful incentives local programs to retain these trainees”

Training in Obstetric Anesthesia in Low Income - Low Resources Settings

Mauricio Vasco Ramírez.

mvascor@ces.edu.co

No disclosures
Program Materials
Saturday, May 22, 2021 (US)
Sunday, May 23, 2021 (Japan)
Labor Analgesia: Current Environment in Japan and the World: **American Perspective**

William Camann, M.D.
Director, emeritus, Obstetric Anesthesia
*Brigham and Women’s Hospital*
*Harvard Medical School*
*Boston, Massachusetts*

Thank you for the opportunity to speak to my friends and colleagues in Japan

My favorite place
I hope to return soon!

日本が大好き♡なビル先生
Admiring Fuji-san - 長坂 安子

ビル・ケイマン

The childbirth experience 出産の経験

Obstetric anesthesiologists can make it:
産科麻酔科医がいかに
• Better 改善できるか
• Safer 安全に行えるか

Obstetric anesthesiologists:
産科麻酔科医がいかに
• Add value 価値を加えるか
Obstetric Anesthesia:

More than just inserting epidurals and spinals

産科麻酔→単に硬膜外や脊髄くも膜下の手技をおこなうだけでない！

Obstetrics – Never a Dull Moment!

William Camann, M.D.
Subcommittee on Obstetric Anesthesia and Perinatology

There are approximately 4 million births in the United States each year, and nearly 60 percent of these women will receive neuraxial analgesia during labor and delivery. Obstetric (OB) anesthesia is almost always administered in a location that is “off-site” from the hospital’s main operating room suite. At times merely yards away, although more often in an entirely different building, obstetric anesthesia is more, far more, than just anesthesia administered in a remote locale. Obstetric anesthesiologists are presented with unique challenges and special circumstances that differ in meaningful ways from typical anesthetic practices in the main operating room (O.R.) setting. In this article, I will summarize some of the introductory comments I deliver every month to the new residents rotating on the obstetric anesthesia service at my hospital.

A Special Event
First and foremost, obstetric anesthesiologists must always remember that we are welcomed into one of the most special, intimate, private events in a woman’s life.

Camann W.
American Society of Anesthesiologists Newsletter, November 2003

…success as an obstetric anesthesiologist cannot be measured by how rapidly and effectively one can place an epidural…

…but rather how effectively one can meet the interpersonal communication requirements of the labor and delivery unit.”

産科麻酔としての成功とは、硬膜外の手技を早く確実に行えるということではない。むしろ、産科病棟での人と人とのコミュニケーションをいかに効果的に行えるか、ということだ。

ビル・ケーマン 2003年11月米国麻酔科学会ニュースレター
The OB Patient Experience – A New Paradigm

Mark Ziccardi, M.D.
Committee on Obstetric Anesthesia

“I emphasize the art of what I’ve termed ‘psycho-anesthesia’ to my residents and fellows. Be an interested observer. When you walk into the patient’s room, what is the tension level? Is there underlying concern about the baby? About the way labor is going? Remind everyone in the room of our common goal – having a healthy baby and mother.”

ASA Newsletter March 2017

The OB Patient Experience – A New Paradigm

Mark Ziccardi, M.D.
Committee on Obstetric Anesthesia

「サイコ（心の）麻酔」をこころがけるということ。
興味をもった観察者として、患者の部屋にはいってごらんよ。
緊張の程度はどのくらい？
赤ちゃんのことで心配事があるのかもしれませんか？
おさんの進み具合についてかかわり？
部屋にいるすべての人に伝えてごらん。
私たちの共通の目標は、健康な赤ちゃんとママを迎えるということなんだから。
Women’s Experiences with Neuraxial Labor Analgesia in the Listening to Mothers II Survey: A Content Analysis of Open-Ended Responses

Laure Attanasio, BA,* Katy B. Kohrman, PhD, MPA,* Judy Jou, MA,* Marianne E. McPherson, PhD, MS,† and William C. Mann, MD‡

BACKGROUND: Most women who give birth in United States hospitals receive neuraxial analgesia to manage pain during labor. In this analysis, we examined themes of the patient experiences of neuraxial analgesia among a national sample of U.S. mothers.

METHODS: Data are from the Listening to Mothers II survey, conducted among a national sample of women who delivered a singleton baby in a U.S. hospital in 2005 (n = 1,573). Our study population consisted of women who experienced labor, did not deliver by planned cesarean, and who reported neuraxial analgesia use (n = 914). We analyzed open-ended responses about the best and worst parts of women’s birth experiences for themes related to neuraxial analgesia using qualitative content analysis.

RESULTS: Thirty-three percent of women (n = 300) mentioned neuraxial analgesia in their open-ended responses. We found that effective pain relief was frequently spontaneously mentioned as a key positive theme in women’s experiences with neuraxial analgesia. However, some women perceived timing-related challenges with neuraxial analgesia, including waiting in pain for neuraxial analgesia, receiving neuraxial analgesia too late in labor, or feeling that the pain relief from neuraxial analgesia wore off too soon, as negative aspects. Other themes in women’s experiences with neuraxial analgesia were information and consent, adverse effects, and patient control.

CONCLUSIONS: The findings from this analysis underscore the fact that women appreciate the effective pain relief that neuraxial analgesia provides during childbirth. Although pain control was an important facet of women’s experiences with neuraxial analgesia, their experiences were also influenced by other factors. Anesthesiologists can work with obstetric clinicians, nurses, childbirth educators, and pregnant and laboring patients to help mitigate some of the challenges with timing, communication, neuraxial analgesia administration, or expectations that may have contributed to negative aspects of women’s birth experiences.

Anesth Analg 2015; 121: 974-80

Table 2. Frequency of Themes Related to Neuraxial Analgesia Among Women Who Experienced Labor and Reported Using Neuraxial Analgesia During Their Recent Birth in the Listening to Mothers II Survey (n = 914)

<table>
<thead>
<tr>
<th>Theme</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuraxial analgesia as “best part” of birth experience</td>
<td>52</td>
</tr>
<tr>
<td>Effective pain relief</td>
<td>47</td>
</tr>
<tr>
<td>Challenges related to timing of neuraxial analgesia</td>
<td></td>
</tr>
<tr>
<td>Waiting in pain</td>
<td>31</td>
</tr>
<tr>
<td>Administered late in labor</td>
<td>15</td>
</tr>
<tr>
<td>Wore off too soon</td>
<td>23</td>
</tr>
<tr>
<td>Information and consent</td>
<td>21</td>
</tr>
<tr>
<td>Adverse experiences</td>
<td>34</td>
</tr>
<tr>
<td>Problems with placement</td>
<td>58</td>
</tr>
<tr>
<td>Less effective than expected</td>
<td>50</td>
</tr>
<tr>
<td>Negative physical effects</td>
<td>50</td>
</tr>
<tr>
<td>Plans and expectations for neuraxial analgesia</td>
<td>20</td>
</tr>
</tbody>
</table>
**Women’s experiences: We can help!**

産科麻酔科医はヘルプできるよ！

- **Obstetric Anesthesiologists** have the capacity to influence many factors of the patient birthing experience—either directly through education and patient care or indirectly through input into clinical management or administrative and staffing protocols..

無痛分娩の経験者としてのお母さんたちに聞いてみた調査結果

Anesth Analg 2015; 121: 974-80

---

**EDITORIAL**

**Pain, Pain Relief, Satisfaction and Excellence in Obstetric Anesthesia: A Surprisingly Complex Relationship**

William Camann, MD

痛み、痛みからの開放、満足感、そして産科麻酔のエクセレンス
驚くほどに複雑に絡み合ったその関係

—ビル・ケーマン

Anesth Analg February 2017
The degree of satisfaction that a woman experiences during labor and childbirth can influence and transcend many other outcomes. Labor is a highly complex, culturally based, attitude-based, subjective, individual relationship of both physiologic and psychologic factors. Pain relief is not the only concern for most women.Prelabor expectations, caregiver attitudes during labor, emotional support during labor, and other, often difficult-to-quantify factors, are also critical in determining the degree of satisfaction from the childbirth experience.

Obstetric anesthesiologists: 産科麻酔科医の特徴

• Have a variety of tools at our disposal
• Have a unique opportunity to frame women’s experiences during labor by our words and deeds
• Can enhance women’s experiences by advocating for change in hospital policies and protocols that afford women greater control in birth

痛み、痛みからの開放、満足感、そして産科麻醉のエクセレンス 驚くほどに複雑に絡まったその関係

ービル・ケーマン
Camann W. Anesth Analg February 2017
In one study, generalist anesthesiologists had significantly increased risk for failed conversion of epidural analgesia to anesthesia for cesarean delivery. Reasons for increased successful conversion by obstetric anesthesiologists include increased likelihood to manipulate the catheter, active management of breakthrough labor pain, assessment of analgesic quality throughout labor, integration of information on labor and maternal-fetal status into analgesia management, and enhanced team communication to anticipate intrapartum cesarean delivery.

Anesthesiology 2018; 129:192-215
A pivotal partnership: obstetrics and anesthesiology

The ideal labor and delivery unit encourages close collaboration—not just between obstetricians and anesthesiologists—but between all members of the obstetric care team, including pediatricians, midwives, nurses, and doulas.
Innovative approaches to hi-risk surgery

Cesarean Delivery in the Hybrid Operating Suite: A Promising New Location for High-Risk Obstetric Procedures

Allison Clark, MD, Michaela K. Farber, MD, Hans Svigjum, MD, and William Carrann, MD

BACKGROUND: The increasing cesarean delivery rate and attendant placental implantation abnormalities, coupled with increasing general medical complexity in the obstetric population, has driven innovation to optimize the care of high-risk parturients during delivery. Novel and multidisciplinary approaches and locations may enhance the options available for care.

METHODS: We reviewed the records of all 11 patients who underwent cesarean delivery in our hybrid operating suite between December 2007 and March 2013 and describe the high-risk cesarean deliveries.

RESULTS: The most common indication for the use of the hybrid operating suite was an increased risk of hemorrhage, most commonly due to abnormal placental implantation. Other indications included cardiovascular disease and intracranial pathology.

CONCLUSION: The hybrid operating suite may be an alternative location for obstetric delivery, and our experience suggests that this environment may prove advantageous for patients with a variety of comorbid conditions. (Anesth Analg 2013;117:1187-9)

Anesth Analg 2013; 117: 1187-9
Cesarean in the hybrid OR:

Table 1. Cesarean Deliveries Performed in the Hybrid Operating Suite

<table>
<thead>
<tr>
<th>Patient</th>
<th>Age (y)</th>
<th>Gravity parity</th>
<th>Indication</th>
<th>Anesthesia type (ETI)</th>
<th>Transfusion requirements</th>
<th>Additional interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>41</td>
<td>G_3P_3</td>
<td>Suspected accreta</td>
<td>Spinal, GETA</td>
<td>None</td>
<td>Uterine rupture</td>
</tr>
<tr>
<td>2</td>
<td>33</td>
<td>G_3P_1</td>
<td>Suspected accreta</td>
<td>Spinal, ETI</td>
<td>None</td>
<td>Uterine artery embolisation</td>
</tr>
<tr>
<td>3</td>
<td>31</td>
<td>G_3P_1</td>
<td>Suspected accreta</td>
<td>Spinal, ETI</td>
<td>None</td>
<td>Internal iliac artery catheters</td>
</tr>
<tr>
<td>4</td>
<td>33</td>
<td>G_3P_1</td>
<td>Suspected accreta</td>
<td>Spinal, ETI</td>
<td>3 PPH</td>
<td>Internal iliac artery catheters</td>
</tr>
<tr>
<td>5</td>
<td>38</td>
<td>G_3P_1</td>
<td>Suspected accreta</td>
<td>Spinal, ETI</td>
<td>3 PPH</td>
<td>Uterine artery embolisation</td>
</tr>
<tr>
<td>6</td>
<td>26</td>
<td>G_3P_1</td>
<td>Complete previa, Jehovah's witness</td>
<td>Spinal, ETI</td>
<td>None</td>
<td>Uterine rupture</td>
</tr>
<tr>
<td>7</td>
<td>43</td>
<td>G_4P_1</td>
<td>Overdue gestation</td>
<td>Spinal, ETI</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>43</td>
<td>G_2P_1</td>
<td>Severe preeclampsia</td>
<td>Spinal, ETI</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>9</td>
<td>37</td>
<td>G_4P_1</td>
<td>Type B uterine dissection</td>
<td>Spinal, ETI</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>10</td>
<td>34</td>
<td>G_4P_1</td>
<td>Ruptured ovarian AVF</td>
<td>Spinal, GETA</td>
<td>3 PPH</td>
<td>Hemorrhage evacuation</td>
</tr>
<tr>
<td>11</td>
<td>32</td>
<td>G_3P_1</td>
<td>Cardiac arrest</td>
<td>Spinal, GETA</td>
<td>2 PPH</td>
<td>Ventricular fibrillation</td>
</tr>
</tbody>
</table>

CSE = combined spinal–epidural anesthesia; GETA = general endotracheal anesthesia; PPH = packed red blood cells; FFP = fresh frozen plasma; PLT = pooled platelets; AVF = arteriovenous malformation.

Anesth Analg 2013; 117: 1187-9

Innovative approach to low-risk surgery: The “Family Centered” Cesarean

患者中心の帝王切開とは？

How does the Mother & Baby Focused or Family-Centered Cesarean model differ from a standard surgical birth?
Editorial

Mother-, baby-, and family-centered cesarean delivery: It is possible

The clinical processes at cesarean delivery can be refocused to enhance early maternal–infant bonding and improve the mother's experience of the surgery.

William Camann, MD, and Robert L. Barbieri, MD

Making News: Family Centered Cesarean

家庭が中心となった帝王切開（メディア）
Promotion for your hospital:

出産後すぐにスキンシップ（触るだけでなく授乳も）行うことができる

Early Skin to Skin and Breastfeeding
• The father is a very important part of the birthing experience!
• This is an opportunity for change in Japanese practice of obstetrics.
• Please welcome the father into the operating room for cesarean delivery!

Question: If mother is not able to do skin to skin care, is the father or partner able to do so in the OR?
Clear drapes during cesarean
クリアードレープ
Family-centered “Gentle” cesarean:
患者とその家族中心のジェントル帝王切開の要素

• Safe
• Extremely popular
• Improved maternal and neonatal outcomes
• Advocacy should include **Obstetric Anesthesiologists**
• NO REASON NOT TO DO THIS

安全、患者から非常に有用との評価あり。
さらに、母児ともにアウトカムを改善する！
Thank you for the opportunity to speak today!
今日の講演の機会をありがとうございました。
なんでも質問してください！

Questions and Discussion:

Ask me anything!
Labor epidural analgesia: not just a catheter

Carolyn Weiniger, MB ChB
Director of Obstetric Anesthesia
Division of Anesthesia & Pain & Intensive Care
Tel-Aviv Sourasky Medical Center
Tel-Aviv Israel

carolynfweiniger@gmail.com
Division of Anesthesia, Critical Care & Pain

Disclosures
Honararium, Editor of International Journal of Obstetric Anesthesia
Consultant, BioMed, Israel
Clinical project (non-remunerative) GIST MD

carolynfweiniger@gmail.com
Division of Anesthesia, Critical Care & Pain
Learning Points

- Take control
- Proactive
- Don’t assume
- Test
Anesthesiologist in the Labor ward?

**EJA**

*Eur J Anaesthesiol* 2020; 37:1115–1125

**REVIEW ARTICLE**

European minimum standards for obstetric analgesia and anaesthesia departments

*An experts’ consensus*

Emilia Guasch*,†, Nicolas Brogly†, Frederic J. Mercier‡, Alexander Iosovich*, Carolyn F. Weiniger†, Nuala Lucas†, Dominique Chassard†, Peter Kranke†, David Whitaker*†, Goetz Geldner*, Olegs Sabelnikovs* and Edoardo de Robertis*†
This experts’ opinion is focused mainly on obstetric patients & safety concerns in terms of minimum standards of practice.

It is anticipated that these standards may stimulate European countries to collaborate actively in reviewing their own national obstetric care standards.

**Introduction**

Anaesthetists are an integral part of the team managing care for obstetric patients in the maternity units of each medical centre. Delivery suites are very different in Europe depending on the country, and even in the same country, significant differences exist among hospitals and levels of care. In most situations, both the individual health professional and also the system (team, group, department etc.) must be considered when a standard of care is implemented or changed. However, this does not absolve each individual department head, doctor and subspecialist of the responsibility of reaching the minimum standards of care. All anaesthesia medical work in the delivery suites must be led and personally supervised by a consultant anaesthetist.
(1) Human resources  
(2) Technical equipment  
(3) Pre-operative evaluation  
(4) Initiation of labour analgesia  
(5) Maintenance of labour analgesia  
(6) Conversion of labour epidural analgesia into anaesthesia for caesarean delivery  
(7) Standard management for caesarean delivery  
(8) High-risk obstetric patient management  
(9) Postoperative care  
(10) Maternal cardiac arrest

<table>
<thead>
<tr>
<th>Resource</th>
<th>High-risk</th>
<th>Initiation</th>
<th>Maintenance</th>
<th>Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>Minimum standards for obstetric analgesia and anaesthesia departments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Authors</td>
<td>Enrico DiGuyse, Patrik Bärushi, Peter A. Kendell, Damir Stojkovic, Daniele J. Chalmers, Paulo Zambon, David Wilmot, Dieter Schmid, Olga Rubenstein, and Elisha B. Bracken</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resource</th>
<th>High-risk</th>
<th>Initiation</th>
<th>Maintenance</th>
<th>Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1</td>
<td>Expected availability to provide an obstetric anaesthetic service in the labour ward according to European guidelines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td>Specific time limit for high-risk obstetric patients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>Within 10 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>Between 10 min and 30 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>No specific time limit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>No specific time limit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>No specific time limit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td>No specific time limit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malta</td>
<td>As soon as possible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Netherlands</td>
<td>As soon as possible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>As soon as possible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>As soon as possible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>As soon as possible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>As soon as possible</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Recommend sufficient staff  
- Each obstetric patient  
- Receive standard of care  
- Timely manner  
- Take account of simultaneous requests and emergencies

10 min  
No specific time  
Within 1 hour  
As soon as possible
Resources
Personnel
Infrastructure
Equipment
Protocols

Pregnancy with critical illness
- Adult ICU, NICU
- Other services eg blood bank

Transfer patient out  Vs.  Transfer team in  Vs.  Telemedicine

ACOG Practice Bulletin: Critical Care in Pregnancy 2018
Before the epidural?

- Fluids: ✗
- Platelets?: ?
- Anesthesia check: ✓
- Informed consent: ✓

No medical notes

Immediate decisions
Have you ever delayed a labor epidural because you needed more medical information?

- Yes
- No
- Other

Who do you contact for epidural analgesia medical consult at 0200?

- Dr Google
- International Journal Obstetric Anesthesia
- Senior anaesthesia colleague by phone/in-house
- Interdisciplinary colleague
- Make a stop-gap alternative solution until the morning
- I do the epidural
- I go back to sleep
- All of the above
- Other
Antenatal Anesthesia Assessment

Pregnancy Heart Team
Anesthesiologist, cardiologist, obstetrician
European Society of Cardiology Guidelines | 2018

UKOSS report: 33% with mechanical valve not seen by specialist care during pregnancy

Vause S | BJOG 2017
Identify High Risk Women

30% in 2005: Obstetric units had Antenatal anesthesia clinics
93% in 2018: Obstetric units had Antenatal anesthesia clinics

Roe MD | IJOA 2018

Identify High Risk Women

Antenatal Obstetric Anesthesia Clinic
Butwick AJ, Tiouririne M

Primary indication for referral
University of Virginia
Identify High Risk Women

Neuromuscular most frequent
15% cardiac conditions
Disconnect between community & hospital electronic medical record

Weiniger CF | Isr J Health Pol Res 2018

From Poland...
Good morning!
Do you have experience with PAI-1 deficiency and epidural for labour?
Thank you in advance for your feedback.
Paweł

From Spain...
I've never seen it, so as it's a fynbrolisis problem, I'd not perform the epidural block. I'll search for any case report

From Nottingham
It's a new one on me. Have you got TEG?
Morning. A patient who previously had Guillaume Barre syndrome with complete recovery wants epidural for labor. Would you do it?

From Holland...
To be honest no, I would provide these two publications and strongly advise against any epidural option.

From Belgium...
Very often patients are not completely cured but I'm sure there are epidural cases

Body of literature seems to say it's OK to do but there is not universal agreement

From Israel...
Hi! Woman with spins big idea cystic a at L4 do you do epidural?

From Spain...
For Guillen Barre: I'd perform an epidural block with very low concentrations.

From Israel...
And spina bifida?
Initiation of labor analgesia

Paresthesia
Blood in the epidural catheter
One-sided block
No effect
Resources
High-risk
Initiation
Maintenance
Conversion

6-25%

Tan HS Curr Opin Anaesthesiol 2019
Mankowitz SKW Anesthesia Analgesia 2016
Orbach-Zinger S Acta Anaesthesiol Scand 2006
CSE = ↓ failure rate vs. epidural
↓ breakthrough pain, ↑ block onset, ↓ top-ups
↑ 2nd stage analgesia
Groden IJOA 2016, Tan HS Curr Op Anesth 2019

Ultrasound ↓ epidural failure rate
Vallejo MC IJOA 2010

Replace catheters – not foolproof solution

---

**Epidural Top-Up Algorithm**

1. **Top-Up Requested**
   - Include investigational regional anesthetic & prophylactic later at 15 min

2. **Top-Up Solution**
   - If catheter is non-occluded, add 2 ml
   - If catheter is occluded, add 2 ml saline

3. **20 Minutes Post-Intervention, Assess Efficacy**
   - Issue resolved?

4. **No**
   - Address underlying issue:
     - Pain, change pump settings
     - Infection, change antibiotic

5. **Yes**
   - Replace catheter

Ende et al IJOA 2021 Epub
Maintenance of labor analgesia

Pain threshold
Emotional/cultural/social
Stage of labor
Parity
Oxytocin
Size of pelvis: size of fetus
Genetic polymorphism
Who should call anesthesiologist?
When should anesthesiologist be called?
Anesthesiologist

Secretary The woman in room 7 needs an epidural

Anesthesiologist

Secretary The woman in room 7 is still in pain

Anesthesiologist
✓ Assess fetal heart tracing – notify anesthesiologist
✓ Twin delivery
✓ Vacuum delivery (the tricky ones)
✓ Rupture of membranes

✓ Postpartum hemorrhage

✓ Failed labor epidural

Secretary The woman in room 7 needs a cesarean

Anesthesiologist
Algorithm to test the block

How was the epidural?
Epidural top ups?
Lift your legs (motor block)
Place hands on both feet (bilateral block)

Giladi Y | Acta Anaesth Belg 2021: 72; 23-32
Table 1: Summary of all 18 reported combinations for epidural augmentation

<table>
<thead>
<tr>
<th>Type of LA for loading</th>
<th>Type of Opioids in loading</th>
<th>Use of Bicarbonate in loading</th>
<th>Use of Epinephrine in loading</th>
<th>Numbers of participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lidocaine</td>
<td>Fentanyl</td>
<td>Yes</td>
<td>No</td>
<td>41</td>
</tr>
<tr>
<td>Lidocaine</td>
<td>Fentanyl</td>
<td>Yes</td>
<td>Yes</td>
<td>16</td>
</tr>
<tr>
<td>Lidocaine</td>
<td>Fentanyl</td>
<td>No</td>
<td>No</td>
<td>10</td>
</tr>
<tr>
<td>Bupivacaine</td>
<td>Fentanyl</td>
<td>Yes</td>
<td>No</td>
<td>5</td>
</tr>
<tr>
<td>Lidocaine + Bupivacaine</td>
<td>Fentanyl</td>
<td>No</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>Lidocaine + Bupivacaine</td>
<td>Fentanyl</td>
<td>Yes</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>Lidocaine</td>
<td>None</td>
<td>No</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td>Lidocaine</td>
<td>None</td>
<td>Yes</td>
<td>Yes</td>
<td>3</td>
</tr>
<tr>
<td>Bupivacaine</td>
<td>Fentanyl</td>
<td>No</td>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Lidocaine + Bupivacaine</td>
<td>None</td>
<td>No</td>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Lidocaine</td>
<td>None</td>
<td>Yes</td>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Lidocaine</td>
<td>Fentanyl</td>
<td>No</td>
<td>Yes</td>
<td>2</td>
</tr>
<tr>
<td>Lidocaine</td>
<td>Morphine</td>
<td>Yes</td>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Ropivacaine</td>
<td>Fentanyl</td>
<td>Yes</td>
<td>No</td>
<td>1</td>
</tr>
<tr>
<td>Lidocaine + Bupivacaine</td>
<td>None</td>
<td>No</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>Lidocaine + Bupivacaine</td>
<td>Fentanyl</td>
<td>Yes</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>Lidocaine</td>
<td>None</td>
<td>No</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>Bupivacaine</td>
<td>Fentanyl</td>
<td>No</td>
<td>No</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>99</td>
</tr>
</tbody>
</table>

Giladi Y | Acta Anaesth Belg 2021: 72; 23-32

Figure 2: Distribution of usage of local anesthesia in epidural augmentation

Lido – Lidocaine, Bupi – Bupivacaine, Rop – Ropivacaine

Giladi Y | Acta Anaesth Belg 2021: 72; 23-32
Giladi Y | Acta Anaesth Belg 2021: 72; 23-32

McCombe | Anaesthesia 2018

Study Design
- Lessons learned from litigation cases over 21 years in UK
- 367 Cases
- 76 (21%) cesarean delivery
- 56/76 (74%) pain during cesarean
Test the block level – 2 modalities

42% of cesareans started before the block level was verified

One woman said that she could feel the cold

The anesthesiologist said “I doubt you can”

Believe the patient - 1.7% spinal analgesia failure rate

<table>
<thead>
<tr>
<th>Tested modality and level</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>T2 cold, T4 pin prick, motor, surgical test</td>
<td>135(37.4%)</td>
</tr>
<tr>
<td>Surgical test</td>
<td>62(17.2%)</td>
</tr>
<tr>
<td>T4 pin prick</td>
<td>42(11.6%)</td>
</tr>
<tr>
<td>Motor block, surgical test</td>
<td>32(8.9%)</td>
</tr>
<tr>
<td>T2 cold, T4 pin prick, surgical test</td>
<td>25(6.9%)</td>
</tr>
<tr>
<td>T4 pin prick, surgical test</td>
<td>19(5.3%)</td>
</tr>
<tr>
<td>T4 pin prick, motor, surgical test</td>
<td>11(3%)</td>
</tr>
<tr>
<td>Motor block</td>
<td>7(1.9%)</td>
</tr>
<tr>
<td>T4 prick, T2 cold</td>
<td>3</td>
</tr>
</tbody>
</table>

Orbach-Zinger Unpublished data
<table>
<thead>
<tr>
<th></th>
<th>Pain-Epidural Before delivery</th>
<th>Pain-Epidural After delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2O</td>
<td>27(7.5%)</td>
<td>4(1.1%)</td>
</tr>
<tr>
<td>Midazolam</td>
<td>15(4.2%)</td>
<td>54(15%)</td>
</tr>
<tr>
<td>Propofol</td>
<td>30(8.3%)</td>
<td>25(6.9%)</td>
</tr>
<tr>
<td>Ketamine</td>
<td>82(22.7%)</td>
<td>54(15%)</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>26(7.2%)</td>
<td>102(28.3%)</td>
</tr>
<tr>
<td>General Anesthesia</td>
<td>147(40.7%)</td>
<td>67(18.6%)</td>
</tr>
<tr>
<td>Combination</td>
<td>19(5.3%)</td>
<td>43(11.9%)</td>
</tr>
<tr>
<td>Missing</td>
<td>15(4.2%)</td>
<td>12(3.3%)</td>
</tr>
</tbody>
</table>

Orbach-Zinger Unpublished data

---

Practice Drills for High Risk Cases
Antenatal assessment of women with comorbidity

Proactive anesthesia - check labor epidural

Call anesthesiologist early

Who calls

Who is called

When to call

Practice drills for high risk cases

Team structure – OBGYN, anesthesiologist, labor nurse

Scheduled/unscheduled updates

carolynfweiniger@gmail.com
Knowledge, Skills, and Judgement in Obstetric Anesthesia

ROBERT GAI SER, M.D.
PROFESSOR AND PROGRAM DIRECTOR
DEPARTMENT OF ANESTHESIOLOGY
YALE SCHOOL OF MEDICINE

Disclosure: Director for ACGME and ABA

Goals

- The practice of obstetric anesthesia requires knowledge, skills, and judgement
- American Board of Anesthesiology and Accreditation Council for Graduate Medical Education drive these three skill sets
- Balance program requirements and assessments in definition of the Obstetric Anesthesiologist
How to Create the Best?

- Self-awareness – accepting personal accountability
- Creativity – the willingness to experiment, to break through barriers, and to be open to innovation
- Relationships – listening and speaking to create emotional and empathic connections

- Life is a journey to be experienced, not a problem to be solved.

Scernama PH. Anesthesiology 2012;117:651

What Stands in the Way of Creating the Best Obstetric Anesthesiologist?

- Fundamental Attribution Error
  - Tendency to attribute the causes of other people’s behavior to their intrinsic nature
  - Tendency to over attribute one’s own behavior to external circumstances
Clinical Example

- Placement of an epidural catheter
- I am not successful – she is really challenging
- Someone else is not successful – just don’t know what they are doing

Don't believe everything you hear. There are always three sides to a story: yours, theirs and the truth.

Wason’s Confirmation Bias

- Tendency to seek out evidence that supports our existing beliefs
- We seek out and pay particular attention to information that supports our existing beliefs
Example 2—Understand the Whole Picture

- Two providers require 3 attempts to place an epidural catheter
- One was the best provider and the other was one who had some difficulty.

Knowledge in Obstetric Anesthesia Defined by ABA

- Content Outline
- Reviewed by experts (face validity)
- Topics that a board certified anesthesiologist must know
- Written Exam comes from the content outline with a blueprint
- Every exam must have 20 questions (10%) from obstetric anesthesia

Twenty minutes after oxytocin-augmented delivery of twins, a 38-year-old woman with preeclampsia has heavy vaginal bleeding. Initial treatment with uterine fundal massage and a 40 unit/liter infusion of oxytocin fails to stop the bleeding. Which of the following is the **MOST** appropriate next therapy?

- A. Intravenous methylergonovine
- B. Intramuscular 15-methyl prostaglandin F2α
- C. Intramuscular terbutaline
- D. Prostaglandin E2 vaginal suppository
Content Outline for Obstetric Anesthesia

- Maternal Physiology
- Maternal-Fetal Considerations
  - Pharmacology
  - Amniotic Fluid
  - Antepartum Fetal Assessment and Therapy
  - Labor Analgesia Risks and Techniques
  - Influence of analgesic technique on labor
  - Physiology of Labor
  - Cesarean delivery

- Pathophysiology of Complicated Pregnancy
  - Ectopic pregnancy, surgery during pregnancy, Hypertension, cardiac disease, DM, Infections during pregnancy (HIV, HSV, Zika)

- Problems of Term and Delivery
  - Multiple gestation, fever, TOLAC, Preterm labor, Preeclampsia, CPR, retained placenta

- Resuscitation of Newborn

- Anesthetic Considerations in Breastfeeding

Knowledge Still Drives Profession

- Measure knowledge which is required for decision making
- Defensible decisions
- Efficient and cost effective
- One best answer establishes scientific basis

- Low face validity (do not use MCQ in practice)
- Implies that there is one best answer
- Does not measure how

Dillon GF. JGME 2013;12:276
MCQ and Board Certification

Zhou Y. Anesth Analg 2019;129:e159

Failure to achieve certification associated with license action
Miller’s Pyramid of Assessment

Standardized Oral Examination

- To measure judgment and decision making capability
- Measures how examinee frames, appraises, and replies to alternative views, evaluates evidence, and defends conclusions
- Not passing SOE associated with actions against medical license
- Clinical performance scores are independently associated with SOE scores

Zhou Y. Anesthesiology 2017;126:1171

Difficult for content domain
- Variability in decision making even if clinical database held constant
- Expensive
- Time limited

Logic: Greater knowledge will increase Certification standards and translate into higher quality patient care
Obstetric Anesthesia on the SOE

- Every exam (either stem or short answer) must contain an obstetric anesthesia question
- Examiners instructed to test for judgement
- Not an exam of knowledge

- Urgent C/S for fetal distress is scheduled for 19-year-old parturient who is pre-eclamptic and in active labor. She is receiving MgSO4 and intermittent hydralazine. Blood pressure is 150/110. What would be your choice of anesthesia? Why? Discuss advantages/disadvantages of choice. How would you control blood pressure? Why? What are your goals?

OSCE

- 9 skills in 2 content domains (Communication/ Professionalism and Technical Skills)
- Measure clinical competence
- Able to include patient perspective
- Advise and counsel patients
- Does not require real time grading

- Time limited
- Unable to address entire domain
- Expensive

A 24-year old G1P1 presents with a positional headache after labor epidural analgesia. Your task is to obtain informed consent for epidural blood patch

A gynecologist would like to perform an elective laparoscopy. The patient is having significant bronchospasm. Your task is to present postponement of the case to the surgeon
MOCA Minute

- Longitudinal assessment
- Web-based with questions based upon practice survey
- Participation improve scores on 10-yr exam; nonparticipation did not
- Includes confidence – more likely to engage in further education
- Intermittent, spaced learning
- Goal: Promote self-awareness
- Retrieval learning
- Lack of or late registration associated with license action
- Failure to meet standard associated with license action
- Advantages:
  - Spaced study
  - Frequent assessment
  - Relevant topics
  - Immediate feedback

Sun H. Anesth 2016;125:1046

- 120 questions per year
- 50% of questions are general and given to all anesthesiologists
- 50% are practice dependent
- Organization receives information on percent who answered correct
- Drives knowledge
ACGME Also Determines Education in Obstetric Anesthesia

- Anesthesiologist
  - Two one-month rotations in Obstetric Anesthesia
    - 40 vaginal deliveries
    - 20 cesarean deliveries

- Obstetric Anesthesiologist
  - One year additional training
    - Two weeks MFM, two weeks NICU, 3 months research
      - 30 high risk vaginal; 30 high risk cesarean deliveries
      - List of topics for education
      - Scholarly project that is published

There must be facilities and space for the education of fellows, including meeting space, conference space, space for academic activities, and access to computers.

Summary

- Organizations Drive Obstetric Anesthesia Because:
  - Financed by Requirements
  - Knowledge – mainly depends upon time invested; measured using MCQ
  - Technical – may be assessed on job or with simulator
    - OSCE
  - Empathy – Extremely important
    - Able to be assessed in OSCE
  - Judgment – depends upon experience and outcomes
    - Assessed with oral exam
Tips for Building an
Obstetric Anesthesia Fellowship Program

Michaela K. Farber MD MS
Assistant Professor, Harvard Medical School
Program Director, OB Anesthesia Fellowship
Associate Chief, Division of OB Anesthesia
Brigham and Women’s Hospital
Boston, MA USA

Disclosures: [None]
• In response to the high rate of US maternal morbidity and mortality:
  → Regionalized care centers
  → Demand for specialized staffing at high-volume centers

Gelber K et al. Anesth Analg 2018; 127(6):1445-7

<table>
<thead>
<tr>
<th>Level</th>
<th>Patient Type</th>
<th>Capabilities</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Low-risk</td>
<td>Ultrasound</td>
<td>Anesthesiologist supervising AA or CRNA, OB/midwife/family practice physician</td>
</tr>
<tr>
<td>Level 2</td>
<td>Moderate to high-risk</td>
<td>CT scan, MRI, echo</td>
<td>MFM available to consult Anesthesiologist available at all times</td>
</tr>
<tr>
<td>Level 3</td>
<td>Complex conditions</td>
<td>All blood components, MTP, Interventional radiology, ICU Acceptance of transfers</td>
<td>Director of OB anesthesia w/fellowship training or experience in OB anesthesia; all subspecialties</td>
</tr>
<tr>
<td>Level 4</td>
<td>Critically ill</td>
<td>OB ICU Perinatal leadership</td>
<td>OB anesthesiologist* Neurosurgery, cardiac surgery, transplant surgery</td>
</tr>
</tbody>
</table>

Level 4: board-certified anesthesiologist with obstetric anesthesia fellowship training or experience in obstetric anesthesia **physically present at all times.**
Benefits of having a fellowship program?
Continuously enhancing…

maternal safety
clinical care
research

Accreditation Council for Graduate Medical Education

Obstetric Anesthesiology Fellowship
• ACGME accreditation available since 2011
• 41 US programs have ACGME accreditation
• 66 Fellowship Positions
• Range of 1-5 fellows per program
ACGME Program Requirements for Graduate Medical Education in Obstetric Anesthesiology

- Oversight by the Institution
- Personnel: Core Faculty
- Criteria and number of fellows
- Curriculum / Scholarly Activity
- Evaluation processes
- The learning and working environment

Tip 1
Define your Core Faculty

Tip 2
Define Scholarly Activity

Tip 3
Build your Curriculum

Tip 4
Create a positive teaching and learning environment!
Tip 1
Define your Core Faculty

Tip 2
Define Scholarly Activity

Tip 3
Build your Curriculum

Tip 4
Create a positive teaching and learning environment!

<table>
<thead>
<tr>
<th>Program</th>
<th># Faculty</th>
<th>Deliveries/y</th>
<th>Fellowship positions</th>
<th>Faculty: Fellow ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwestern</td>
<td>14</td>
<td>12,000</td>
<td>4</td>
<td>3.5:1</td>
</tr>
<tr>
<td>MC Wisconsin</td>
<td>8</td>
<td>5,000</td>
<td>1</td>
<td>8:1</td>
</tr>
<tr>
<td>Cornell</td>
<td>12</td>
<td>5,500</td>
<td>1</td>
<td>12:1</td>
</tr>
<tr>
<td>Brigham &amp; Women's</td>
<td>18</td>
<td>6,500</td>
<td>5</td>
<td>3.5:1</td>
</tr>
</tbody>
</table>
II.B.2. Faculty members must:
II.B.2.a) be role models of professionalism; (Core)
II.B.2.b) demonstrate commitment to the delivery of safe, quality, cost-effective, patient-centered care; (Core)

II.B.2.c) demonstrate a strong interest in the education of fellows; (Core)
II.B.2.d) devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities; (Core)
II.B.2.e) administer and maintain an educational environment conducive to educating fellows; (Core)
II.B.2.f) regularly participate in organized clinical discussions, rounds, journal clubs, and conferences; (Core)
II.B.2.g) pursue faculty development designed to enhance their skills at least annually; (Core)
II.B.2.h) include physicians certified in obstetrics and gynecology, maternal-fetal medicine, and neonatology, must be available for consultations and the collaborative management of peripartum patients, as well as instruction and supervision of fellows; and, (Core)
II.B.2.i) include at least one individual who is certified in critical care medicine by a member board of the ABMS or AOA and who practices in an ICU that cares for obstetric patients. (Core)
Set your Core Faculty up for Success:
- Clarify your expectations
- Match their career goals to a relevant task:
  - Research projects
  - Quality Initiatives
  - Journal clubs
  - Fellow didactics
  - Fellow mentorship
  - Recruitment committee
  - Clinical competence committee/evaluations

Determine the clinical experience you want to provide, then organize the timing and length of rotations. United States example:

<table>
<thead>
<tr>
<th>L&amp;D:</th>
<th>7 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research:</td>
<td>3 months</td>
</tr>
<tr>
<td>MFM:</td>
<td>2 weeks</td>
</tr>
<tr>
<td>NICU:</td>
<td>2 weeks</td>
</tr>
<tr>
<td>Elective time:</td>
<td>1 month</td>
</tr>
</tbody>
</table>

Duration of Each Rotation (months)
Tip 1
Define your Core Faculty

Tip 2
Define Scholarly Activity

Tip 3
Build your Curriculum

Tip 4
Create a positive teaching and learning environment!

Scholarly Activity: Common Concerns

- It’s difficult to get research started and meet scholarly activity goals
- As a new faculty, I know I need scholarly projects to advance in the academic world; I would like to help fellows, but that requires doing something scholarly myself.
- I don’t have the time or expertise to do research
Tip 1
Define your Core Faculty

Tip 2
Define Scholarly Activity

Tip 3
Build your Curriculum

Tip 4
Create a positive teaching and learning environment!

Faculty Scholarly Activity

Among their scholarly activity, programs must demonstrate accomplishments in at least three of the following domains:

- Research in basic science, education, translational science, patient care, or population health
- Peer-reviewed grants
- Quality improvement and/or patient safety initiatives
- Systematic reviews, meta-analyses, review articles, chapters in medical textbooks, or case reports
- Creation of curricula, evaluation tools, didactic educational activities, or electronic educational materials
- Contribution to professional committees, educational organizations, or editorial boards
- Innovations in education
Didactics – Variable across Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Gr. rounds</th>
<th>Journal club</th>
<th>Lectures?</th>
<th>Multidisciplinary teaching</th>
<th>Simulation?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwestern</td>
<td>weekly</td>
<td>3-4/mo</td>
<td>In person</td>
<td>Yes – with OB</td>
<td>yes, fellow-led</td>
</tr>
<tr>
<td>MC Wisconsin</td>
<td>not scheduled</td>
<td>not every month</td>
<td>Online</td>
<td>Not reported</td>
<td>yes, fellow-specific</td>
</tr>
<tr>
<td>Cornell</td>
<td>weekly</td>
<td>6 per month</td>
<td>In person</td>
<td>NICU case conference</td>
<td>yes, scheduled</td>
</tr>
<tr>
<td>Brigham &amp; Women’s</td>
<td>weekly</td>
<td>1 per month</td>
<td>In person</td>
<td>OB, NICU, congenital heart, hemorrhage risk</td>
<td>1 day at sim center, 2x/month in situ</td>
</tr>
</tbody>
</table>

Didactics – Common Concerns

- It’s challenging to find opportunity for fellowship research, QI projects, and keep fellow didactics updated.
- It’s difficult to arrange individual fellow lectures for a small fellowship program
- I would like to hear how others are providing OB anesthesia didactics to their fellows.
- I’m interested in learning effective ways to provide didactics to fellows – how should they be structured?
Tip 1
Define your Core Faculty

Tip 2
Define Scholarly Activity

Tip 3
Build your Curriculum

Tip 4
Create a positive teaching and learning environment!

Teaching and Learning Environment

- Quality improvement
- Supervision
- Accountability and Professionalism
- Well-being, Fatigue Mitigation
- Clinical responsibilities
- Transitions of care
- Teamwork
- Clinical experience and education
- Patient safety
Thank you!
mfarber@bwh.harvard.edu
SOAP Centers of Excellence (COE) for Anesthesia Care of Obstetric Patients

Brendan Carvalho MBBCh, FRCA, MDCH
Professor, Chief of Obstetric Anesthesia Division
Stanford University School of Medicine

- Recognize programs that demonstrate excellence
- Set a benchmark level of care to improve the standard nationally
- Surrogate quality metric for institutions
- Promote sub-specialty of obstetric anesthesia

https://soap.org/grants/center-of-excellence/
To advance and advocate for the health of pregnant women and their babies through research, education, and best practices in obstetric anesthesia care

**SOAP COE for Anesthesia Care of Obstetric Patients**

**Criteria**

- **Domains:**
  - Personnel and Staffing
  - Equipment, Protocols, Policies
  - Cesarean Delivery Management
  - Labor Analgesia
  - Recommendations and Guidelines Implementation
  - Quality Assurance and Patient Follow-up

- **Requirements:**
  - All ‘essential’ criteria highlighted (with *)
  - Majority of other criteria

SOAP COE for Anesthesia Care of Obstetric Patients

Metrics

General Anesthesia for Cesarean Delivery
• < 5% overall
• Ongoing quality assurance review

Labor epidural block replacement rate
• Ideally 3-6%

“Wet tap” rate
• < 2%
• Ongoing quality assurance review

https://soap.org/grants/center-of-excellence/

SOAP Centers of Excellence for Anesthesia Care of Obstetric Patients Designation

70 institutions
62 in USA

• Academic and private/community practices
• Deliveries per year
<1,000 to >15,000
2018/2019 Center of Excellence Designees

- Stanford University
- Northwestern University Feinberg School of Medicine
- Columbia University
- University of New Mexico
- Colorado Fetal Care Center, Children’s Hospital Colorado
- North Shore University Hospital
- Johns Hopkins Hospital
- Saddleback Memorial Medical Center
- Albany Medical Center
- University of North Carolina, Chapel Hill
- New York Presbyterian - Weill Cornell
- Tufts Medical Center
- Icahn School of Medicine at Mount Sinai
- Beth Israel Deaconess Medical Center
- Overlook Medical Center
- University of Minnesota
- Sparrow Hospital
- Ochsner Hospital
- NYU School of Medicine
- University of California San Francisco
- Wake Forest University Health Sciences
- Juntendo University Hospital
- Massachusetts General Hospital
- Mount Sinai West
- Magee-Womens Hospital of UPMC
- University of Washington
- Sharp Mary Birch Hospital for Women and Newborns
- Washington University School of Medicine
- Victoria Hospital
- Brigham and Women’s Hospital
- Zuckerberg San Francisco General Hospital and Trauma Center
- Texas Children’s Hospital - Pavilion for Women
- Mercy Hospital St. Louis
- Hospital e Maternidade Santa Joana
- Regional One Health
- Cedars-Sinai Medical Center
- Washington Hospital Center
- Penn Medicine Princeton Health
- Duke University

2019/2020 Center of Excellence Designees

- University of Michigan - Michigan Medicine
- Kaiser Permanente - Roseville Women & Children’s Hospital
- University of Maryland Medical Center
- Virtua Voorhees Hospital - West Jersey Anesthesia Associates
- UAMS College of Medicine
- Vanderbilt University
- Missouri Baptist Medical Center
- BC Women’s Hospital
- Hospital of the University of Pennsylvania
- Hackensack University Medical Center
- Froedtert Hospital Birth Center - The Froedtert & the Medical College of Wisconsin
- Mayo Clinic
- Miller Women’s and Children’s Hospital
- University of Utah
2020/2021 Center of Excellence Designees

- Clínica Universitaria Bolivariana (Pontifical Bolivarian University)
- George Washington School of Medicine
- Hamad Medical Corporation
- Hoag Memorial Hospital Presbyterian
- Loma Linda University
- Long Island Jewish Medical Center
- Minneapolis Anesthesia Partners
- National Center for Child Health and Development
- Ohio State Univ. Wexner Medical Center
- Sidra Medical & Research Center
- Stony Brook University
- Sutter Medical Center
- UC Davis Medical Center
- University of Alabama at Birmingham
- University of Chicago
- Virginia Commonwealth University Health System
- Yale New Haven Hospital - York Street Campus

SOAP COE for Anesthesia Care of Obstetric Patients

Benefits

**Prestige:**
- Quality indicator with national recognition

**Direct Benefit:**
- Provides incentive and justification to implement best practices
- Marketing tool for hospital, delivery unit, anesthesiology group
- Join a COE network

**Indirect Benefit:**
- Recruitment: anesthesiologists, residents, fellows
- Facilitates recognition as ACOG Level III/IV Maternal Care Center

**Cost Savings:**
- Potential risk management and malpractice insurance reduction

**Income Benefit:**
- Useful designation in negotiations with payors and hospital

https://soap.org/grants/center-of-excellence/
Zuckerberg San Francisco General Hospital

**UCSF and ZSFG Receive Center of Excellence Designation from the Society for Obstetric Anesthesia and Perinatology (SOAP)**

“The SOAP COE criteria provided the basis for us to further round out our clinical care, refine our policies, and transform our practice to meet the needs of our increasingly complex patient population.”

John Markley

*Academic Center with 1200 deliveries per year*

---

Sharp Mary Birch Hospital for Women & Newborns

“Apart from the intrinsic benefits of COE designation in terms of patient care it is also a great way to improve your department’s profile within a hospital and it gains the respect and trust of your obstetric colleagues.”

David Gambling

*Community practice with 8400 births per year*
SOAP COE for Anesthesia Care of Obstetric Patients

Logistics

• Annual Application Cycle: August 2021
• Certificate: Valid for 4 years
• Cost (Application $500; Certification $2000)
• Information: SOAP website, town hall webinar, consultations
• SOAP COE Committee: 1 chair and 11 members
• Rigorous review process

https://soap.org/grants/center-of-excellence/

Save the Date

54th Annual Meeting
May 11-15, 2022
Hilton Chicago Hotel
Chicago, Illinois
Provision of SOAP Centers of Excellence in Japan

JUNTENDO UNIVERSITY HOSPITAL
HIROYUKI SUMIKURA

Juntendo University Hospital
Describe the type of institution.
- Academic/university affiliated

How many deliveries are there at your institution?
- 1300 per year

What is the current cesarean delivery rate at your institution?
- 30%

What is your institution’s general anesthesia rate for cesarean delivery?
- For scheduled/elective cesarean delivery: 2%
- For unplanned/intrapartum cesarean delivery: 2%

What percentage of laboring women at your institution receive neuraxial analgesia?
- 90%

What is your institution’s “wet-tap” rate in the obstetric setting?
- 1%

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

How many operating rooms are in your obstetric unit?
- 1 room
Staffing for your obstetric anesthesia service

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

Daytime
Attending physician: 1, Fellows: 1, Residents: 1, CRNA/CAAs: 0

Night-time/weekends:
Attending physician: 0, Fellows: 1, Residents: 0, CRNA/CAAs: 0

Personnel: Leadership

The lead is a board-certified physician anesthesiologist that has completed an ACGME-accredited OB anesthesia fellowship and/or has equivalent expertise in OB anesthesia. Please provide the curriculum vitae of the lead.

- JSA Board Certified Anesthesiologist
- Section Editor of Journal of Anesthesia since 2004.
- Editorial Advisory Board of IJOA since 2010.
**Personnel: Faculty Members**

The core faculty members are **SOAP members** and show evidence of ongoing participation in continuing medical education relevant to the practice of OB anesthesia.

- Attendance at a SOAP conference or equivalent meeting at least every other year.
- How about JSA, JSOAP, and JAPA?

**Dedicated coverage & Backup**

**In-house (24/7) coverage** of obstetric patients, by at least one board-certified (or equivalent) physician anesthesiologist who is dedicated to covering the obstetric service **without additional responsibilities for non-obstetric patients**.

Ability to mobilize **additional anesthesia personnel** (within a reasonable timeframe: 30–60 minute) in case of **obstetric emergencies**.
Equipment, Protocols and Policies

Obstetric hemorrhage management

Hemorrhage risk stratification algorithm and management protocol instituted.

- Availability of a massive transfusion protocol with O-negative blood
- Point-of-care equipment to assess coagulation.
- Availability of intraoperative cell salvage
- Rapid-infuser device to assist with massive resuscitation
Equipment, Protocols and Policies

Airway management

**Difficult airway cart** immediately available on the OB unit.
- Laryngoscopes and Endotracheal tubes
- Rescue airway devices (e.g. supraglottic airway device)
- Video-laryngoscope, and surgical airway equipment

Means to deliver **positive pressure ventilation**

In-house (24/7) backup of personnel with **surgical airway skills**.

Other emergency resources

**Lipid emulsion**, appropriate supplies and protocols to LAST
- Available

**Dantrolene** and sterile water vials, along with other supplies to allow a timely response to malignant hyperthermia.
- Not Available
Equipment, Protocols and Policies
Multidisciplinary team-based approach

- Place to ensure inter-professional communication
- Sign-out at each shift change
- Pre-procedural timeouts
- Post-procedural briefings

**Daily multidisciplinary rounds or huddles**
Equipment, Protocols and Policies

Multidisciplinary team-based approach

- A system in place to screen and identify all high-risk patients.
- Multidisciplinary evaluation of cardiac and other high-risk obstetric patients.
- Availability (24/7) of surgical backup, ideally in-house.
- Protocol or pathway to activate interventional radiology.
- Intensive care unit available to receive obstetric patients.

Institutional resources

- Ability to provide anesthesia care for
  - postpartum tubal ligation procedures within 24 hours of delivery
  - urgent cerclage placement within 12 hours of surgical request.
Cesarean Delivery Management:

Prophylaxis of PDPH
Routine utilization of a pencil-point needle (25G) for SAB.

Prophylaxis of PONV.
Antiemetic agent routinely administered.

Prophylaxis of post operative pain
100mcg intrathecal morphine or 3 mg epidural morphine
Multimodal oral analgesics (NSAIDs and acetaminophen)
Effort to limit the number of opioid tablets
Not applicable

Labor Analgesia

Low concentration local anesthetic solutions for administering neuraxial labor analgesia
- Levobupivacaine: 0.08%
- Fentanyl: 2mcg/ml

Standardized epidural solutions used by all providers.
Ideally, pharmacy-provided pre-mixed epidural solutions.
Labor Analgesia

Neuraxial techniques

CSEA available/offered in addition to standard labor epidural analgesia.

- In 2017, CSEA 90%, EDB 8%, and DPE 2%.
- In 2021, CSEA 20%, EDB 5%, and DPE 75%.

PCEA and ideally PIEB utilized for the provision of neuraxial labor analgesia.

- PCEA: Available
- PIEB: Not available

Special thanks to

Shoko Okahara
Yoshifumi Suga
Junnosuke Kimura
Yumiko Kadokura
Yuichi Iwano
Takumi Yamamoto
Rie Inoue
Hisako Okada
The Society for Obstetric Anesthesia and Perinatology
Center of Excellence
Designation in 2020

National Center for Child Health and Development, Tokyo
Clinical Director, Department of Critical Care and Anesthesia
Reiko Ohara, M.D., PhD.

National Center for Child Health and Development

- Largest National hospital for children and mothers
- Combined the National Research Institute
Obstetric Anesthesia Team

- Reproductive Surgery
- Fetal Surgery
- Cesarean Delivery
- Labor Analgesia
- Obstetric emergency from other hospitals

fetal surgery

- Fetal laser photocoagulation
- Thoraco-amnio shunt
- Radio-Frequency ablation
- Fetoscopic surgery
Number of deliveries

- CD: 30% of deliveries
- Labor Analgesia: 70% of V.D.
- Natural Labor: 30% of V.D.

Our mission

- High quality and dedicated care
- Keep improving our standards internationally
- Nuture OB anesthesiologists
- Provide proper information for parturients
- Provide educational programs for midwives
米国周産期麻酔学会
Center of Excellence 認定施設として
国立成育医療研究センター 手術・集中治療部 手術室診療部長 大原 玲子

• 日本で最も大規模なこどもと母親のためのナショナルセンター
• 研究施設併設
• 手術・集中治療部は小児麻酔-産科麻酔-ICUの部門から成る
• 周産期麻酔管理: 産科麻酔部門専従チーム / 24時間365日

不育・不妊科の手術
胎児治療
帝王切開
無痛分娩
母体搬送症例

年間分娩件数: 2000例前後
予定剖腹: 全分娩の30% (600-650例)
自然分娩: 経産分娩の30% (500-600例)
無痛分娩: 経産分娩の70% (900-1000例)
年間胎児治療麻酔: 40-60例
私たちの考え
水準の高い産科麻酔医療を提供するには、産科麻酔科学に特化した部門が必要で、産科医療の安全性を高めるために次世代の育成を続ける

私たちの使命
• 高品質で専門的な医療を提供する
• 医療のスタンダードを国際レベルで向上させる
• 産科麻酔科医師を育成する
• 的確な情報を産婦に提供する
• 助産師・看護師の教育プログラムを提供する

見学のご希望承ります。ご清聴ありがとうございました。

SOAP
Society for Obstetric Anesthesia and Perinatology
SAVE THE DATE

54th Annual Meeting
Hilton Chicago Hotel
Chicago, Illinois
May 11-15, 2022

55th Annual Meeting
Sheraton New Orleans Hotel
New Orleans, La.
May 3-7, 2023
SOAP/Japanese Symposium
Advancing Obstetric Anesthesia in Japan & Beyond
May 21-22, 2021 (US)
May 22-23, 2021 (Japan)

日本周産期麻酔学会
Japanese Association for Perinatal Anesthesiology

The Japanese Association for Labor Analgesia