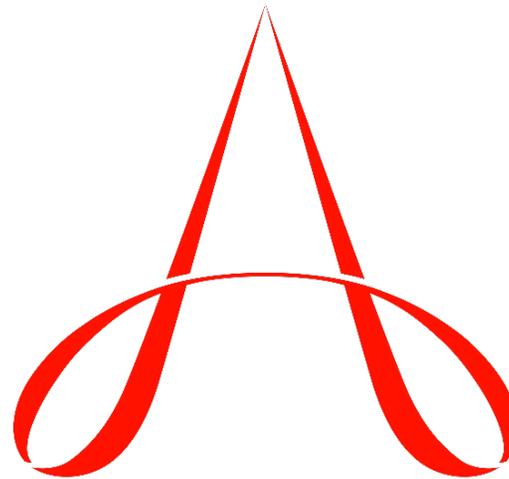




Supplemental Guide: Obstetric Anesthesiology



A C G M E

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TABLE OF CONTENTS

INTRODUCTION	3
PATIENT CARE	4
Technical Skills in Obstetric Anesthesiology.....	4
Triage and Coordination of Obstetric Anesthesia Care	6
Crisis Management for the Obstetric Patient	8
Antepartum Consultation, Assessment, and Peri-Anesthetic Care Planning	10
Point-of-Care Ultrasound for Obstetric Patients.....	12
MEDICAL KNOWLEDGE.....	14
Obstetric Anesthesiology	14
Obstetrics and Neonatology Knowledge Applied to Obstetric Anesthesiology.....	16
SYSTEMS-BASED PRACTICE	18
Patient Safety and Quality Improvement in Obstetric Anesthesiology.....	18
System Navigation for Patient-Centered Care in Obstetric Anesthesiology	20
Physician Role in Health Care Systems in Obstetric Anesthesiology.....	23
PRACTICE-BASED LEARNING AND IMPROVEMENT	25
Evidence-Based and Informed Practice in Obstetric Anesthesiology	25
Reflective Practice and Commitment to Personal Growth in Obstetric Anesthesiology	27
Mentorship and Teaching in Obstetric Anesthesiology.....	29
PROFESSIONALISM	30
Professional Behavior and Ethical Principles in Obstetric Anesthesiology.....	30
Accountability/Conscientiousness in Obstetric Anesthesiology	33
Well-Being in Obstetric Anesthesiology	35
INTERPERSONAL AND COMMUNICATION SKILLS.....	37
Patient- and Family-Centered Communication in Obstetric Anesthesiology	37
Patient Counseling in Obstetric Anesthesiology	39
Interprofessional and Team Communication in Obstetric Anesthesiology	40
Communication within Health Care Systems in Obstetric Anesthesiology.....	43
MAPPING OF 1.0 TO 2.0	46
MILESTONES RESOURCES.....	48

Milestones Supplemental Guide

This document provides additional guidance and examples for the Obstetric Anesthesiology Milestones. This is not designed to indicate any specific requirements for each level, but to provide insight into the thinking of the Milestone Work Group.

Included in this document is the intent of each Milestone and examples of what a Clinical Competency Committee (CCC) might expect to be observed/assessed at each level. Also included are suggested assessment models and tools for each subcompetency, references, and other useful information.

Review this guide with the CCC and faculty members. As the program develops a shared mental model of the Milestones, consider creating an individualized guide (Supplemental Guide Template available) with institution/program-specific examples, assessment tools used by the program, and curricular components.

Additional tools and references, including the Milestones Guidebook, Clinical Competency Committee Guidebook, and Milestones Guidebook for Residents and Fellows, are available on the [Resources](#) page of the Milestones section of the ACGME website.

Patient Care 1: Technical Skills in Obstetric Anesthesiology Overall Intent: To demonstrate critical thinking and judgment in the design and application of anesthetic care for obstetric patients	
Milestones	Examples
<p>Level 1 <i>Consistently, safely, and efficiently performs neuraxial anesthesia with minimal complications in low-risk patients</i></p> <p><i>Consistently, safely, and efficiently performs general anesthesia with minimal complications in low-risk patients and identifies patients who need modification of plan for general anesthesia</i></p>	<ul style="list-style-type: none"> ● Independently initiates neuraxial analgesia in a healthy laboring pregnant patient ● Designs a safe anesthetic plan for a low-risk parturient scheduled for repeat Cesarean delivery under general anesthesia for whom neuraxial anesthesia is contraindicated
<p>Level 2 <i>Troubleshoots and manages problems or complications associated with neuraxial anesthesia, with assistance (e.g., provides effective analgesia and anesthesia)</i></p> <p><i>Safely provides general anesthesia in emergent clinical situations</i></p>	<ul style="list-style-type: none"> ● Assesses and manages a poorly functioning epidural catheter to provide effective analgesia ● Identifies an epidural catheter that needs to be replaced ● Acts as the team leader for an emergent Cesarean delivery for umbilical cord prolapse in a healthy parturient
<p>Level 3 <i>Consistently, safely, and efficiently performs neuraxial anesthesia, including use of neuraxial ultrasound, in high-risk or complex patients and/or emergent situations</i></p> <p><i>Demonstrates advanced airway skills, including the management of a difficult airway</i></p>	<ul style="list-style-type: none"> ● Effectively uses neuraxial ultrasound to initiate neuraxial analgesia in a patient with scoliosis and morbid obesity ● Intubates a pregnant patient for an emergent Cesarean delivery after a failed first attempt to obtain an airway ● Demonstrates successful placement of an emergent front-of-neck airway in a simulation
<p>Level 4 <i>Independently troubleshoots and manages problems or complications associated with neuraxial anesthesia</i></p> <p><i>Consistently, safely, and efficiently performs general anesthesia with minimal complications in high-risk or complex patients, including airway management</i></p>	<ul style="list-style-type: none"> ● Provides rescue anesthesia for a failed extension of epidural analgesia to Cesarean anesthesia ● Effectively provides general anesthesia for patient whose pregnancy is complicated by hemolysis, elevated liver enzymes, low platelet count (HELLP) syndrome and morbid obesity

Obstetric Anesthesiology Supplemental Guide

<p>Level 5 Serves as a consultant for initiation, management, and troubleshooting of technically challenging neuraxial anesthesia</p> <p>Serves as a consultant for management of complex general anesthetics of a pregnant patient</p>	<ul style="list-style-type: none"> ● Supervises a learner initiating neuraxial analgesia in a patient with scoliosis and morbid obesity ● Leads team in developing and carrying out an anesthetic plan for a parturient with a brain tumor who presents in labor for repeat Cesarean delivery
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Case-based discussion ● Direct observation ● Objective structured clinical examination (OSCE) ● Simulation
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> ●
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● Apfelbaum JL, et al. 2022 American Society of Anesthesiologists practice guidelines for management of the difficult airway. <i>Anesthesiology</i> 2022; 136:31-81. ● Delgado C, Ring L, Mushambi MC. General anaesthesia in obstetrics. <i>BJA Educ.</i> 2020 Jun;20(6):201-207. ● Sadeghi A, Patel R, Carvalho JCA. Ultrasound-facilitated neuraxial anaesthesia in obstetrics. <i>BJA Educ.</i> 2021 Oct;21(10):369-375.

Patient Care 2: Triage and Coordination of Obstetric Anesthesia Care Overall Intent: To demonstrate clinical reasoning skills needed to triage and coordinate obstetric anesthesia care	
Milestones	Examples
<p>Level 1 <i>Identifies risk factors that may predispose patients to common medical or obstetric complications and develops a comprehensive anesthetic plan for patients requiring routine care</i></p> <p><i>Defines clinically appropriate priorities when caring for multiple obstetric patients and identifies limited resources</i></p>	<ul style="list-style-type: none"> ● Recognizes insulin-dependent diabetes as a risk factor for fetal macrosomia and incorporates labor epidural analgesia into the anesthetic delivery plan ● Prioritizes a parturient in advanced labor when caring for multiple patients requesting labor epidural analgesia
<p>Level 2 <i>Identifies risk factors that may predispose patients to complex or uncommon medical or obstetric complications and identifies the need for additional evaluation</i></p> <p><i>Coordinates and works cooperatively with other members of the obstetric anesthesia care team</i></p>	<ul style="list-style-type: none"> ● Recognizes cardiomyopathy of pregnancy as a potential risk factor for maternal hemodynamic decompensation and coordinates cardiology consultation ● Coordinates tasks with other members of the obstetric anesthesia team in the management of a parturient requiring emergency induction of general anesthesia
<p>Level 3 <i>Formulates and tailors anesthetic plans that include consideration of medical, obstetric, and anesthetic risk factors, as well as patient preference and available resources, for patients requiring complex care</i></p> <p><i>Directs resources to optimize care for multiple patients simultaneously</i></p>	<ul style="list-style-type: none"> ● Formulates, tailors, and coordinates the care of a patient with morbid obesity, opioid use disorder, and new onset preeclampsia with severe features ● Delegates the simultaneous care of patients requiring epidural labor analgesia and an urgent cesarean delivery
<p>Level 4 <i>Adapts the anesthetic plan to balance the ethical and other well-being considerations for the infant and the mother in complex clinical situations</i></p> <p><i>Proactively advocates for and directs resources to optimize care for multiple patients with complex needs simultaneously</i></p>	<ul style="list-style-type: none"> ● Accommodates a second support person in the operating room for a patient with an expected fetal demise ● Proactively coordinates and directs anesthesia coverage for the care of multiple patients requiring simultaneous cesarean deliveries

<p>Level 5 <i>Designs and implements multidisciplinary institutional protocols for efficient diagnosis and coordination of care for pregnant patients with specific high-risk conditions</i></p> <p><i>Develops policies and procedures with the interprofessional team to address high patient workload and other institutional barriers to care</i></p>	<ul style="list-style-type: none"> • Designs, implements, and coordinates an institutional protocol for post-partum hemorrhage • Actively participates on an interprofessional team to develop a policy on patient transfer in the setting of high patient census and acuity
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> • Case-based discussion • Direct observation • Simulation • Protocol development
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> •
<p>Notes or Resources</p>	<ul style="list-style-type: none"> • California Maternal Quality Care Collaborative. https://www.cmgcc.org/. Accessed 2022. • Centers for Medicare and Medicaid Services. Certification and compliance for the Emergency Medical Treatment and Labor Act (EMTALA). https://www.cms.gov/medicare/provider-enrollment-and-certification/certificationandcompliance/downloads/emtala.pdf. Accessed 2022. • No author. Levels of maternal care: obstetric care consensus no, 9. <i>Obstet Gynecol</i>. 2019 Aug;134(2):e41-e55. doi: 10.1097/AOG.0000000000003383. PMID: 31348224

Patient Care 3: Crisis Management for the Obstetric Patient Overall Intent: To demonstrate anticipation, mitigation, and performance of care for critical clinical events in obstetric patients, including leadership and coordination of the team	
Milestones	Examples
<p>Level 1 <i>Participates as a member of the crisis response team; constructs appropriately prioritized differential diagnoses that include the most likely etiologies for common, acute clinical deterioration; and initiates appropriate therapy</i></p> <p><i>Recognizes and initiates treatment of common anesthetic complications and adverse events</i></p>	<ul style="list-style-type: none"> ● Responds immediately to evaluate hypotension in a post-partum patient when called by the nurse; assesses for evidence of post-partum hemorrhage and initiates appropriate treatment ● Responds immediately to evaluate hypotension in a laboring patient when called by the nurse; examines the patient to rule out intrathecal catheter and treats with left uterine displacement, intravenous (IV) fluids, and vasopressors as needed
<p>Level 2 <i>Participates as a member of the crisis response team; constructs appropriately prioritized differential diagnoses that include the most likely etiologies for uncommon, acute clinical deterioration; and initiates appropriate therapy</i></p> <p><i>Recognizes major anesthetic complications, and participates in the multi-disciplinary management team</i></p>	<ul style="list-style-type: none"> ● Responds to a seizure in the laboring patient and immediately calls for help while providing appropriate care ● Recognizes high neuraxial block and immediately treats hypotension with fluids and vasopressors and evaluates respiratory depression; educates the nurses and obstetricians regarding implications of a high neuraxial block
<p>Level 3 <i>Develops and executes a plan to manage uncommon clinical crises in a patient with complex comorbidities</i></p> <p><i>Directs the management of major anesthetic complications</i></p>	<ul style="list-style-type: none"> ● Develops and executes a plan to manage respiratory compromise in a patient with myasthenia gravis ● Directs the successful management of failed tracheal intubation in a pregnant patient by using the difficult airway algorithm
<p>Level 4 <i>Assumes leadership of a crisis response team</i></p> <p><i>Organizes resources for interdisciplinary and interprofessional management of patient complications</i></p>	<ul style="list-style-type: none"> ● Assumes leadership role in the management of massive hemorrhage of patient with placenta accreta spectrum disorder (PAS) ● Organizes an interdisciplinary conference to coordinate the care of a patient with malignant hyperthermia and a contraindication to neuraxial anesthesia

<p>Level 5 <i>Serves as a consultant in critical situations, and is a resource to others in the care team</i></p> <p><i>Designs and implements institutional policies and protocols for the management of anesthetic complications and crises</i></p>	<ul style="list-style-type: none"> ● Serves as a consultant in a multidisciplinary approach to managing a Jehovah’s Witness patient with severe postpartum hemorrhage ● Designs and implements a multidisciplinary institutional protocol for the management of failed intubation in obstetric patients during general anesthesia for cesarean section
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Case-based discussion ● Direct observation ● Simulation
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> ●
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● Mushambi MC, et al. Obstetric Anaesthetists' Association and Difficult Airway Society guidelines for the management of difficult and failed tracheal intubation in obstetrics. <i>Anaesthesia</i>. 2015 Nov;70(11):1286-306. doi: 10.1111/anae.13260. PMID: 26449292

Patient Care 4: Antepartum Consultation, Assessment, and Peri-Anesthetic Care Planning	
Overall Intent: To demonstrate clinical assessment skills, clinical decision-making skills, and collaborative coordination of care for the obstetric patient	
Milestones	Examples
<p>Level 1 <i>Performs an assessment and formulates a plan for pregnant patients, including common issues that impact obstetric anesthesia care</i></p> <p><i>Describes the use of a consultation and lists useful resources</i></p>	<ul style="list-style-type: none"> ● Evaluates a parturient with morbid obesity; formulates a plan of care for labor and delivery ● Describes comorbidities that warrant an antepartum obstetric anesthesiology consultation
<p>Level 2 <i>Performs an assessment and formulates an anesthetic plan for complex pregnant patients</i></p> <p><i>For simple consultations, delineates the clinical question, obtains additional clinical information, can access available resources, recommends next steps, and completes documentation, with assistance</i></p>	<ul style="list-style-type: none"> ● Evaluates a parturient with morbid obesity with cardiomyopathy; formulates a plan of care for labor and delivery ● Performs an antepartum consultation in a patient with mitral stenosis; obtains relevant imaging and laboratory evaluation; formulates a plan for antepartum optimization and peripartum anesthetic care
<p>Level 3 <i>Performs an assessment and formulates an anesthetic plan for critically ill pregnant patients</i></p> <p><i>For complex consultations, delineates the clinical question, obtains additional clinical information, applies relevant resources, and recommends next steps with assistance; manages simple consultations independently</i></p>	<ul style="list-style-type: none"> ● Evaluates a parturient with mitral stenosis with decompensated heart failure and formulates an anesthetic care plan for delivery ● Performs an antepartum consultation in a patient who uses IV drugs and has a vegetative valvular lesion and severe mitral regurgitation; obtains relevant imaging and laboratory evaluation; formulates a plan for antepartum optimization and peripartum anesthetic care
<p>Level 4 <i>Advises the multidisciplinary team and integrates the anesthetic plans into the care of medically complex and critically ill obstetric patients</i></p> <p><i>Manages complex consultations independently, including addressing conflicting management goals with</i></p>	<ul style="list-style-type: none"> ● Discusses the anesthetic considerations for a parturient on venovenous extracorporeal membrane oxygenation (VV ECMO) with consultants and formulates anesthetic plan with consideration for competing priorities of care ● Documents discussion of various considerations and evidence for recommendations, including contingency plans for evolving changes in maternal clinical status

Obstetric Anesthesiology Supplemental Guide

<i>comprehensive, timely documentation of findings and recommendations</i>	
Level 5 <i>Coordinates the multidisciplinary team involved in the care of medically complex and critically ill obstetric patients</i>	<ul style="list-style-type: none"> • Coordinates with the multidisciplinary consultants to ensure integration of the anesthetic plan with the obstetric and medical care plans for a parturient with cystic fibrosis complicated by worsening pulmonary status
<i>Is recognized as an expert in providing comprehensive consultations</i>	<ul style="list-style-type: none"> • Is recognized by multidisciplinary team members as an expert consultant in obstetric anesthesiology
Assessment Models or Tools	<ul style="list-style-type: none"> • Case-based discussions • Direct observation • Medical record (chart) review
Curriculum Mapping	<ul style="list-style-type: none"> •
Notes or Resources	<ul style="list-style-type: none"> • American College of Obstetricians and Gynecologists (ACOG). Practice Bulletin No. 209: Obstetric analgesia and anesthesia. <i>Obstetrics & Gynecology</i> March 2019, 133(3):e208-e225. • American Society of Anesthesiologists (ASA). Practice guidelines for obstetric anesthesia: an updated report by the American Society of Anesthesiologists Task Force on Obstetric Anesthesia and the Society for Obstetric Anesthesia and Perinatology Anesthesiology. <i>Anesthesiology</i> 2016 February 124: 270-300.

Patient Care 5: Point-of-Care Ultrasound for Obstetric Patients	
Overall Intent: To demonstrate application of point-of-care ultrasound to enhance assessment and care of the obstetric patient	
Milestones	Examples
<p>Level 1 <i>Independently selects proper ultrasound equipment and settings for indicated scenarios and conducts and interprets point-of-care ultrasound</i></p> <p><i>Identifies neuraxial anatomy on ultrasound</i></p>	<ul style="list-style-type: none"> ● Independently selects proper ultrasound equipment (e.g., ultrasound probe) and settings (e.g., depth, gain, contrast) for ultrasound guided truncal and neuraxial blocks ● Identifies sonoanatomy for ultrasound guided truncal and neuraxial blocks
<p>Level 2 <i>Uses point-of-care ultrasound to identify common problems</i></p> <p><i>Uses ultrasound to identify interspinous spaces and the midline in patients with uncomplicated neuraxial anatomy</i></p> <p><i>Uses ultrasound for performance of truncal blocks in patients with uncomplicated anatomy</i></p>	<ul style="list-style-type: none"> ● Uses point of care ultrasound to diagnose pulmonary edema in a patient with preeclampsia ● Uses ultrasound to identify the interspinous spaces in both the horizontal and sagittal plane and identifies midline in a patient with uncomplicated neuraxial anatomy ● Successfully performs ultrasound guided transversus abdominus plane (TAP) block in a patient with uncomplicated anatomy
<p>Level 3 <i>Uses point-of-care ultrasound to assess clinically complex situations</i></p> <p><i>Uses ultrasound to identify interspinous spaces and the midline in patients with complex neuraxial anatomy</i></p> <p><i>Uses ultrasound for performance of truncal blocks in patients with complex anatomy</i></p>	<ul style="list-style-type: none"> ● Uses point-of-care ultrasound to assess the etiology of hypotension in a postpartum patient with preeclampsia ● Uses ultrasound to identify the interspinous spaces in both the horizontal and sagittal plane and identifies midline in a patient with scoliosis ● Uses ultrasound for performance of a bilateral TAP block in a patient with morbid obesity
<p>Level 4 <i>Expertly uses point-of-care ultrasound to diagnose and develop a management plan</i></p>	<ul style="list-style-type: none"> ● Expertly uses point-of-care ultrasound to evaluate a patient with known cardiomyopathy to guide fluid management and manage changes in cardiac function throughout their labor course

<p><i>Expertly uses ultrasound to identify interspinous spaces and the midline in patients with complex neuraxial anatomy</i></p>	<ul style="list-style-type: none"> ● Expertly uses ultrasound to identify interspinous spaces and midline and places a functioning labor epidural catheter in a patient with Harrington rods
<p><i>Expertly uses ultrasound for performance of truncal blocks in patients with complex anatomy</i></p>	<ul style="list-style-type: none"> ● Expertly uses ultrasound for performance of bilateral TAP blocks in a patient with achondroplasia
<p>Level 5 <i>Participates in the development of institutional protocols for point-of-care ultrasound</i></p> <p><i>Promotes the use of neuraxial ultrasound for new and emerging indications</i></p>	<ul style="list-style-type: none"> ● Participates in the development of institutional protocols for point-of-care ultrasound in obstetric anesthesia ● Teaches colleagues to use of neuraxial ultrasound
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Direct observation ● Image portfolio ● Simulation
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> ●
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● King CH, Palmer LJ. Point-of-care ultrasound for obstetric anesthesia. <i>Int Anesthesiol Clin</i>. 2021 Jul 1;59(3):60-77. doi: 10.1097/AIA.0000000000000330. PMID: 34054061. ● Zieleskiewicz L, Bouvet L, Einav S, Duclos G, Leone M. Diagnostic point-of-care ultrasound: applications in obstetric anaesthetic management. <i>Anaesthesia</i>. 2018 Oct;73(10):1265-1279. doi: 10.1111/anae.14354. Epub 2018 Jul 26. PMID: 30047997.

<p align="center">Medical Knowledge 1: Obstetric Anesthesiology</p> <p>Overall Intent: To apply knowledge of obstetric anesthesiology to the preparation and care of obstetric patients</p>	
Milestones	Examples
<p>Level 1 <i>Demonstrates knowledge of the implications of altered maternal anatomy and physiology for the anesthetic care of healthy patients</i></p> <p><i>Demonstrates knowledge of obstetric management, including indications for delivery and expected complications, in healthy, low-risk patients</i></p>	<ul style="list-style-type: none"> ● Appropriately titrates minute ventilate during general anesthesia so that the end-tidal CO₂ concentration is 30-35 mmHg ● Maintains systolic blood pressure greater than 90 percent of baseline in women undergoing Cesarean delivery ● Explains the labor curve and its relationship to labor pain ● Explains the major surgical components of cesarean delivery and their relationship to intra-operative anesthesia management
<p>Level 2 <i>Demonstrates knowledge of the anesthetic implications of altered maternal anatomy and physiology for the care of patients with coexisting medical conditions (e.g., human immunodeficiency virus (HIV), cardiac disease, pulmonary hypertension)</i></p> <p><i>Demonstrates knowledge of obstetric management, including indications for delivery and expected complications, in patients with complex comorbidities</i></p>	<ul style="list-style-type: none"> ● Develops a peripartum management plan for a patient with preeclampsia with severe features ● Explains drug contraindications in parturients with HIV managed with reverse transcriptase inhibitors ● Explains the indications for delivery in women with preeclampsia ● Explains the indications for prophylactic anticoagulation in patients at risk for thromboembolism in pregnancy
<p>Level 3 <i>Demonstrates knowledge of the evidence base that underpins anesthetic management of common and complex conditions</i></p> <p><i>Demonstrates knowledge of the evidence base that underpins obstetric management of common and complex conditions</i></p>	<ul style="list-style-type: none"> ● Recites the literature regarding the anesthetic management of pregnant women undergoing external cephalic version ● Recites the literature exploring modes of maintaining epidural labor analgesia (continuous infusion, patient-controlled epidural analgesia, programmed intermittent epidural bolus) ● Explains the obstetric literature supporting the practice of trial of labor after cesarean delivery ● Explains the obstetric literature supporting the practice of administering prophylactic antibiotics

<p>Level 4 <i>Integrates knowledge of maternal anatomy, physiology, and the obstetric management plan to develop an anesthetic management plan for a patient with coexisting disease and obstetric comorbidities</i></p>	<ul style="list-style-type: none"> ● Develops a peripartum anesthetic management plan for a patient with Eisenmenger's syndrome ● Develop an anesthetic management plan for a patient in the mid-trimester who requires a craniotomy for an enlarging intracranial mass
<p>Level 5 <i>Integrates knowledge of maternal anatomy, physiology, and the obstetric management plan to serve as a consultant in obstetric anesthesiology</i></p>	<ul style="list-style-type: none"> ● Discusses the anesthesia concerns with the maternal-fetal medicine and critical care medicine teams regarding the care of a patient in the early third trimester with severe COVID-19 pneumonia
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Case-based discussion ● Direct observation ● Journal club ● Teaching presentation evaluation
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> ●
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● Chestnut DH, Wong CA, Tsen LC, Ngan Kee WD, Beilin Y, Mhyre JM, Bateman BT, eds., <i>Chestnut's Obstetric Anesthesia Principles and Practice</i>. 6th ed. Philadelphia: Elsevier; 2020.

Medical Knowledge 2: Obstetrics and Neonatology Knowledge Applied to Obstetric Anesthesiology Overall Intent: To apply knowledge of obstetrics and neonatology to the practice of obstetric anesthesiology	
Milestones	Examples
<p>Level 1 <i>Demonstrates basic knowledge of normal newborn physiology</i></p> <p><i>Demonstrates knowledge of the impact of anesthesia on the mother and fetus</i></p> <p><i>Demonstrates knowledge of basic fetal heart rate patterns</i></p>	<ul style="list-style-type: none"> ● Performs normal newborn assessment, including determination of Apgar scores ● Communicates with pediatricians when maternal intravenous agents are administered prior to delivery of the infant ● Distinguishes between the National Institute of Child Health and Human Development (NICHD) category 1, 2, and 3 fetal heart rate tracings
<p>Level 2 <i>Demonstrates basic knowledge of abnormal newborn physiology</i></p> <p><i>Demonstrates knowledge of the medically complex neonate and how it impacts the anesthetic plan</i></p> <p><i>Demonstrates knowledge of measures of fetal well-being (e.g., biophysical profile)</i></p>	<ul style="list-style-type: none"> ● Achieves certification in the American Academy of Pediatrics and American Heart Association Neonatal Resuscitation Program (NRP) ● Describes maternal hemodynamic goals for the mother whose fetus is found to have intrauterine growth restriction and absent end diastolic flow ● Summarizes indications for non-stress testing, biophysical profile assessment, and umbilical arterial velocimetry
<p>Level 3 <i>Demonstrates comprehensive knowledge of normal and abnormal newborn physiology</i></p> <p><i>Integrates knowledge of the medically complex neonate into the development of the anesthetic plan</i></p> <p><i>Demonstrates knowledge of how fetal well-being data impacts delivery planning</i></p>	<ul style="list-style-type: none"> ● Teaches residents and medical students about normal perinatal physiology ● Develops a tailored anesthetic plan for Cesarean anesthesia for the mother whose fetus was found to have intrauterine growth restriction and absent end-diastolic flow ● Expedites Cesarean birth for the fetus with NICHD category 3 fetal heart rate tracing
<p>Level 4 <i>Demonstrates knowledge of how newborn physiology impacts delivery planning</i></p>	<ul style="list-style-type: none"> ● Describes normal fetal lung development and the evidence-based strategies to optimize neonatal outcomes

Obstetric Anesthesiology Supplemental Guide

<p><i>Works collaboratively with the multidisciplinary team to prioritize anesthetic, obstetric, and neonatal considerations of the medically complex mother-fetal dyad</i></p> <p><i>Incorporates data about fetal well-being in the development of an anesthetic plan</i></p>	<ul style="list-style-type: none"> ● Participates with the multidisciplinary team to coordinate delivery for a patient with placenta accreta syndrome and vaginal bleeding at 28 weeks' gestational age ● Develops and implements an appropriate anesthetic plan for maternal cholecystectomy at 22 weeks' gestational age
<p>Level 5 Exhibits detailed and up-to-date knowledge of current research in obstetrics and neonatology</p> <p><i>Serves as a consultant for fetal surgery</i></p> <p><i>Serves as a consultant in the development of an anesthetic plan for fetal well-being</i></p>	<ul style="list-style-type: none"> ● Presents a comprehensive evidence-based argument to unit leadership to raise the operating room temperature in obstetric operating rooms ● Serves as a consultant for transversus abdominus plane (EXIT) procedures
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Case discussions ● Direct observation ● Medical record review ● Multisource feedback ● NRP certification
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> ●
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● Macones GA, Hankins GD, Spong CY, Hauth J, Moore. The 2008 National Institute of Child Health and Human Development workshop report on electronic fetal monitoring: update on definitions, interpretation, and research guidelines. <i>Obstet Gynecol.</i> 2008 Sep;112(3):661-6. doi: 10.1097/AOG.0b013e3181841395.PMID: 18757666

Systems-Based Practice 1: Patient Safety and Quality Improvement (QI) in Obstetric Anesthesiology Overall Intent: To engage in the analysis and management of patient safety events, including relevant communication with patients, families, and health care professionals; to conduct a QI project	
Milestones	Examples
<p>Level 1 <i>Demonstrates knowledge of common events that impact patient safety</i></p> <p><i>Demonstrates knowledge of how to report patient safety events</i></p> <p><i>Demonstrates knowledge of basic quality improvement methodologies and metrics</i></p>	<ul style="list-style-type: none"> ● Lists patient misidentification or medication errors as common patient safety events ● Explains how to report errors in own health system ● Describes fishbone tool
<p>Level 2 <i>Identifies system factors that lead to patient safety events</i></p> <p><i>Reports patient safety events through institutional reporting systems (simulated or actual)</i></p> <p><i>Describes departmental quality improvement initiatives</i></p>	<ul style="list-style-type: none"> ● Identifies a recent change to the transfusion requisition form that did not include space for two-person verification to avoid an error ● Identifies that a regional anesthesia consent form does not include laterality ● Reports lack of compliance with antibiotic administration through departmental or institutional reporting systems ● Summarizes protocols to decrease surgical site infections
<p>Level 3 <i>Participates in analysis of patient safety events (simulated or actual)</i></p> <p><i>Participates in disclosure of patient safety events to patients and patients' families (simulated or actual)</i></p> <p><i>Participates in department quality improvement initiatives</i></p>	<ul style="list-style-type: none"> ● Assimilates patient data, evaluates the root cause, and presents the findings of a patient safety event ● Through simulation, communicates with patients/families about a medication administration error ● Participates in a root cause analysis of duplicate acetaminophen administration in post-anesthesia care unit (PACU)
<p>Level 4 <i>Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)</i></p>	<ul style="list-style-type: none"> ● Collaborates with a team to conduct the analysis of intra-operative antibiotic administration errors and presents suggested policy and electronic health record (EHR) design changes at a department meeting

<p><i>Discloses patient safety events to patients and patients' families (simulated or actual)</i></p> <p><i>Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project</i></p>	<ul style="list-style-type: none"> ● Discusses with patient (family) an inadvertent double-dose of acetaminophen administration given to them due to hand-off error ● Initiates and develops a fellow quality improvement project to reduce rates of general anesthesia, including tracking base line rates and change over time, and presents findings to the department
<p>Level 5 <i>Actively engages teams and processes to modify systems to prevent patient safety events</i></p> <p><i>Acts as a role model or mentors others in the disclosure of patient safety events</i></p> <p><i>Creates, implements, and assesses quality improvement initiatives at the institutional level or above</i></p>	<ul style="list-style-type: none"> ● Assumes a leadership role at the departmental or institutional level for patient safety ● Leads a simulation session to train others on how to disclose patient safety events ● Initiates and completes a QI project to improve disclosure of serious adverse events to patients and families and shares results with stakeholders
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Direct observation ● E-module multiple choice tests ● Multisource feedback ● Portfolio ● OSCE ● Reflection ● Simulation
<p>Curriculum Mapping</p>	
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● Anesthesia Patient Safety Foundation. Patient Safety Initiatives. https://www.apsf.org/patient-safety-initiatives/. Accessed 2020. ● Institute of Healthcare Improvement. http://www.ihl.org/Pages/default.aspx. Accessed 2020.

Systems-Based Practice 2: System Navigation for Patient-Centered Care in Obstetric Anesthesiology Overall Intent: To effectively navigate the health care system, including the interdisciplinary team and other care providers; to adapt care to a specific patient population to ensure high-quality patient outcomes	
Milestones	Examples
<p>Level 1 <i>Demonstrates knowledge of care coordination</i></p> <p><i>Identifies and performs key elements for safe and effective transitions of care and hand-offs</i></p> <p><i>Demonstrates knowledge of population and community health needs and inequities</i></p>	<ul style="list-style-type: none"> ● For a routine obstetric patient, identifies the obstetricians, anesthesiologists, and nurses as members of the care team ● Lists the essential components of a standardized tool for sign-out, care transition, and hand-offs ● Articulates risk factors for maternal adverse events related to health disparities
<p>Level 2 <i>Coordinates care of patients in routine clinical situations effectively using the roles of interprofessional team members</i></p> <p><i>Identifies and performs safe and effective transitions of care/hand-offs in routine clinical situations</i></p> <p><i>Identifies specific population and community health needs and inequities for the local population</i></p>	<ul style="list-style-type: none"> ● Coordinates care with the PACU and primary medical team on arrival to PACU after cesarean delivery ● Coordinates care with nursing staff and obstetricians for laboring patients ● Routinely uses a standardized tool for a stable patient during sign-out ● Identifies challenges in communicating with patients with communication barriers (e.g., non-English-speaking patients and families; hearing, visual, or cognitive impairment) leading to poor medical care
<p>Level 3 <i>Coordinates care of patients in complex clinical situations effectively using the roles of interprofessional team members</i></p> <p><i>Performs safe and effective transitions of care/hand-offs in complex clinical situations</i></p> <p><i>Uses institutional resources effectively to meet the needs of a patient population and community</i></p>	<ul style="list-style-type: none"> ● Works with the patient, family members, obstetricians, and specialty consulting services to coordinate the labor and delivery care of a pregnant patient with cardiac disease ● Routinely uses a standardized tool when transferring a patient to and from the intensive care unit (ICU) ● Follows institutional guidelines to provide safe care for a pregnant patient with placenta accreta spectrum disorder

<p>Level 4 <i>Role models effective coordination of patient-centered care among different disciplines and specialties</i></p> <p><i>Role models and advocates for safe and effective transitions of care/hand-offs within and across health care delivery systems</i></p> <p><i>Participates in changing and adapting practice to provide for the needs of specific populations</i></p>	<ul style="list-style-type: none"> ● Leads team in discussions with maternal-fetal medicine consultants to review cases/recommendations ● Coordinates information dissemination concerning peri-operative planning for a pregnant patient with placenta accreta spectrum disorder ● Assists in the design of protocols for discussing and managing care of patients who refuse blood products
<p>Level 5 <i>Analyzes the process of care coordination and participates in the design and implementation of improvements</i></p> <p><i>Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes</i></p> <p><i>Advocates for populations and communities with health care inequities in the peri-operative setting</i></p>	<ul style="list-style-type: none"> ● Develops and implements a program for in person pre-delivery consultation for pregnant patients with high-risk conditions ● Devises a protocol to improve transitions from the labor floor/operating room to the ICU for obstetric patients ● Partners with the multidisciplinary health care team to create an innovative approach to support pregnant patients that require ICU level care ● Engages community partners to improve experience of care for women in underserved communities, such as language barrier, cultural bias, and delays in care
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Direct observation ● Medical record (chart) audit ● Multisource feedback ● OSCE ● Quality metrics and goals mined from EHRs ● Review of sign-out tools, use and review of checklists
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> ●
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● ACOG. Committee Opinion No. 649: racial and ethnic disparities in obstetrics and gynecology. <i>Obstet Gynecol.</i> 2015 Dec;126(6):e130-e134. doi: 10.1097/AOG.0000000000001213. PMID: 26595584. ● CDC. Population Health Training in Place Program (PH-TIPP). https://www.cdc.gov/pophealthtraining/whatis.html. Accessed 2020.

- Howell EA, et al. Reduction of peripartum racial and ethnic disparities: a conceptual framework and maternal safety consensus bundle. *Obstet Gynecol*. 2018 May;131(5):770-782. doi: 10.1097/AOG.0000000000002475. PMID: 29683895Kaplan KJ. In pursuit of patient-centered care. *Tissue Pathology.com*. March 2016. <http://tissuepathology.com/2016/03/29/in-pursuit-of-patient-centered-care/#axzz5e7nSsAns>. Accessed 2020.
- Skochelak SE, Hawkins RE, Lawson LE, Starr SR, Borkan JM, Gonzalo JD. *AMA Education Consortium: Health Systems Science*. 1st ed. Philadelphia, PA: Elsevier; 2016.
- Toledo P, Sun J, Grobman WA, Wong CA, Feinglass J, Hasnain-Wynia R. Racial and ethnic disparities in neuraxial labor analgesia. *Anesth Analg*. 2012 Jan;114(1):172-8. doi: 10.1213/ANE.0b013e318239dc7c. PMID: 22075013

Systems-Based Practice 3: Physician Role in Health Care Systems in Obstetric Anesthesiology Overall Intent: To understand the physician's role in the complex health system and how to optimize the system to improve patient care and the health system's performance	
Milestones	Examples
<p>Level 1 <i>Identifies key components of the complex health care system (e.g., hospital, finance, personnel, technology)</i></p> <p><i>States factors impacting the costs of anesthetic care</i></p>	<ul style="list-style-type: none"> ● Articulates differences between birth center and inpatient hospital facilities ● Identifies the differences in “Maternal Levels of Care” ● Identifies that notes and records must meet billing and coding requirements ● Explains relative cost of anesthetic medications, monitors, and supplies
<p>Level 2 <i>Describes how components of a complex health care system are interrelated, and how they impact patient care</i></p> <p><i>Documents anesthetic detail to facilitate accurate billing and reimbursement</i></p>	<ul style="list-style-type: none"> ● Explains the local and regional system for escalated levels of care ● Ensures anesthetic procedure documentation accurately reflects procedure performed and anesthetic care provided
<p>Level 3 <i>Discusses how individual practice affects the broader system (e.g., length of stay, readmission rates, clinical efficiency)</i></p> <p><i>Explains the impact of documentation on billing and reimbursement</i></p>	<ul style="list-style-type: none"> ● Ensures that patients at risk for post-dural puncture headache receive timely anesthesia follow-up and treatment ● Discusses the necessity of including the ultrasound image for an ultrasound guided procedure to receive reimbursement ● Ensures that faculty are physically present for key portions of a procedure for the attestation documentation in the medical record
<p>Level 4 <i>Manages various components of the complex maternal health care system to provide efficient and effective patient care and transitions of care</i></p> <p><i>Practices and advocates for cost-effective maternal patient care</i></p>	<ul style="list-style-type: none"> ● Effectively works with the care team to ensure interpretive services are accessible for non-English-speaking patients throughout the perinatal period ● Effectively plans and implements an anesthetic that promotes enhanced recovery and rapid discharge
<p>Level 5 <i>Advocates for or leads systems change that enhances high-value, efficient, and effective maternal-fetal care</i></p>	<ul style="list-style-type: none"> ● Works with peri-operative teams to develop and implement protocols for enhanced recovery after Cesarean deliveries

<p><i>Engages in external activities related to advocacy for cost-effective maternal care</i></p>	<ul style="list-style-type: none"> ● Discusses opportunities to expand state-based health coverage for the first-year post-partum with a state legislator
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Direct observation ● Medical record (chart) audit ● Patient satisfaction data ● Portfolio
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> ●
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● Agency for Healthcare Research and Quality (AHRQ). Measuring the Quality of Physician Care. https://www.ahrq.gov/talkingquality/measures/setting/physician/index.html. Accessed 2020. ● AHRQ. Major Physician Measurement Sets. https://www.ahrq.gov/talkingquality/measures/setting/physician/measurement-sets.html. Accessed 2020. ● Dzau VJ, McClellan M, Burke S, et al. Vital directions for health and health care: priorities from a National Academy of Medicine Initiative. <i>NAM Perspectives</i>. Discussion Paper, National Academy of Medicine, Washington, DC. https://nam.edu/vital-directions-for-health-health-care-priorities-from-a-national-academy-of-medicine-initiative/. Accessed 2020. ● Teja BJ, Sutherland TN, Barnett SR, Talmor DS. Cost-effectiveness research in anesthesiology. <i>Anesth Analg</i>. 2018;127(5):1196-1201. https://pubmed.ncbi.nlm.nih.gov/29570150/.

Practice-Based Learning and Improvement 1: Evidence-Based and Informed Practice in Obstetric Anesthesiology Overall Intent: To incorporate evidence and patient values into clinical practice	
Milestones	Examples
<p>Level 1 <i>Completes assigned/ recommended readings and reviews literature related to specific patient problems</i></p> <p><i>Participates in journal clubs, morbidity and mortality conferences, and other educational activities</i></p>	<ul style="list-style-type: none"> • Reviews the most recent Society for Obstetric Anesthesia and Perinatology (SOAP) Consensus Statement on Neuraxial Procedures in Obstetric Patients with Thrombocytopenia and applies it in discussions with colleagues and informed consent discussions with patients
<p>Level 2 <i>Critically evaluates the scientific literature and understands limitations in addressing clinical issues</i></p> <p><i>Uses self-directed literature review to modify patient care</i></p>	<ul style="list-style-type: none"> • In a patient with preeclampsia and thrombocytopenia, discusses relevant obstetric, medical, and anesthetic risks, and elicits patient’s priorities regarding peri-operative care • Researches hemostatic management for the patient with Type 2B von Willebrand disease
<p>Level 3 <i>Independently integrates evidence-based practices into clinical care</i></p> <p><i>Participates in scholarly activity related to the subspecialty</i></p>	<ul style="list-style-type: none"> • Presents the results of a newly published meta-analysis on iron infusions for ante-natal anemia, and effectively identifies recommendations for changes in clinical practice • With faculty member support, designs an impact study of the frequency of maternal anemia on admission to the labor and delivery unit before and after implementation of an ante-natal iron infusion protocol
<p>Level 4 <i>Participates in development of evidence-based clinical protocols and guidelines</i></p> <p><i>Disseminates scholarly activity (e.g., abstract presentation, manuscript submission)</i></p>	<ul style="list-style-type: none"> • Works within a multidisciplinary team to apply results from a newly published meta-analysis of pre-procedural blood sampling to revise institutional testing and blood product preparation guidelines for women planning Cesarean birth • Publishes institutional experience before and after implementation of a clinical protocol change of an iron infusion program for patients with antenatal anemia
<p>Level 5 <i>Participates in editorial reviews and other scholarly activity for peer-reviewed medical journals</i></p>	<ul style="list-style-type: none"> • Serves as a consultant to other members of the department for research design, implementation, and dissemination

Obstetric Anesthesiology Supplemental Guide

<p><i>Participates in and leads professional society and other activities to advance scholarship</i></p>	<ul style="list-style-type: none"> • Serves on a national advisory panel to establish professional guidelines for maternal blood management
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> • Direct observation • Oral or written examinations • Oral presentations • Research and quality improvement projects
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> •
<p>Notes or Resources</p>	<ul style="list-style-type: none"> • Bauer ME, et al. The Society for Obstetric Anesthesia and Perinatology interdisciplinary consensus statement on neuraxial procedures in obstetric patients with thrombocytopenia. <i>Anesth Analg</i> 2021 Jun 1;132(6):1531-1544. doi: 10.1213/ANE.0000000000005355.PMID: 33861047. • Shaylor R, et al. National and international guidelines for patient blood management in obstetrics: a qualitative review. <i>Anesth Analg</i> 2017 Jan;124(1):216-232. doi: 10.1213/ANE.0000000000001473. • US National Library of Medicine. PubMed Online Training. https://www.nlm.nih.gov/bsd/disted/pubmedtutorial/cover.html. Accessed 2020.

Practice-Based Learning and Improvement 2: Reflective Practice and Commitment to Personal Growth in Obstetric Anesthesiology Overall Intent: To seek clinical performance information with the intent to improve care; to reflect on all domains of practice, personal interactions, and behaviors, and their impact on colleagues and patients (reflective mindfulness); to develop clear objectives and goals for improvement in some form of a learning plan	
Milestones	Examples
<p>Level 1 <i>Accepts responsibility for personal and professional development by establishing goals</i></p> <p><i>Identifies the factors that contribute to performance deficits</i></p> <p><i>Actively seeks opportunities to improve</i></p>	<ul style="list-style-type: none"> ● Completes self-reflective goals prior to meeting with the program director ● Identifies that fatigue, stressors, and perceived life-work imbalance contribute to performance deficits ● Asks for feedback from patients, families, and patient care team members ● Uses institutional provided resources to balance personal/professional commitments and obligations
<p>Level 2 <i>Demonstrates openness to performance data (feedback and other input) to inform goals</i></p> <p><i>Analyzes and acknowledges the factors that contribute to performance deficits</i></p> <p><i>Designs and implements a learning plan, with prompting</i></p>	<ul style="list-style-type: none"> ● Integrates feedback to adjust peri-operative management of patients with history of post-operative nausea and vomiting ● Assesses personal time management skills and how it impacts the efficiency of labor floor management ● When prompted, develops individual education plan to improve their evaluation of patients with a history of failed labor epidural analgesia
<p>Level 3 <i>Seeks performance data episodically, with adaptability and humility</i></p> <p><i>Institutes behavioral change(s) to improve performance</i></p> <p><i>Independently creates and implements a learning plan</i></p>	<ul style="list-style-type: none"> ● Periodically obtains medical record data to determine incidence of failed labor epidural analgesia in own patients ● Completes focused literature review before providing anesthesia for a patient with congenital heart disease ● Implements strategies that improve behaviors such as trust, interdependence, genuineness, empathy, risk, team building, and success
<p>Level 4 <i>Intentionally seeks performance data consistently, with adaptability and humility</i></p>	<ul style="list-style-type: none"> ● Obtains a quarterly audit to determine incidence of failed labor epidural analgesia in own patients

<p><i>Considers alternatives to improve performance</i></p>	<ul style="list-style-type: none"> • After patient encounter, debriefs with the attending and other patient care team members to optimize future collaboration in the care of the patient and family
<p><i>Integrates performance data to adapt the learning plan</i></p>	<ul style="list-style-type: none"> • Based on audit of incidence of failed labor epidural analgesia in own patients, identifies knowledge gaps and reads current practice guidelines to improve care
<p>Level 5 <i>Role models consistently seeking performance data with adaptability and humility</i></p> <p><i>Models reflective practice</i></p> <p><i>Facilitates the design and implementation of learning plans for others</i></p>	<ul style="list-style-type: none"> • Shares instances of near misses with more junior learners • Shares own performance gaps and adapted plan with other learners • Identifies and shares strategies to decrease the rate surgical site infections • Assists more junior learners in developing their individualized learning plans
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> • Direct observation • Review of learning plan
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> •
<p>Notes or Resources</p>	<ul style="list-style-type: none"> • Burke AE, Benson B, Englander R, Carraccio C, Hicks PJ. Domain of competence: practice-based learning and improvement. <i>Acad Pediatr.</i> 2014;14:S38-S54. https://pubmed.ncbi.nlm.nih.gov/24602636/. • Hojat M, Veloski JJ, Gonnella JS. Measurement and correlates of physicians' lifelong learning. <i>Academic Medicine.</i> 2009;84(8):1066-1074. https://journals.lww.com/academicmedicine/fulltext/2009/08000/Measurement_and_Correlates_of_Physicians_Lifelong.21.aspx. • Lockspeiser TM, Schmitter PA, Lane JL, Hanson JL, Rosenberg AA, Park YS. Assessing residents' written learning goals and goal writing skill: validity evidence for the learning goal scoring rubric. <i>Academic Medicine.</i> 2013;88(10):1558-1563. https://journals.lww.com/academicmedicine/fulltext/2013/10000/Assessing_Residents_Written_Learning_Goals_and.39.aspx. • Reed S, Lockspeiser TM, Burke A, et al. Practical suggestions for the creation and use of meaningful learning goals in graduate medical education. <i>Academic Pediatrics.</i> 2016;16(1):20-24. https://www.academicpedsjnl.net/article/S1876-2859(15)00333-2/pdf.

Practice-Based Learning and Improvement 3: Mentorship and Teaching in Obstetric Anesthesiology	
Overall Intent: To seek clinical performance information with the intent to improve care; to reflect on all domains of practice, personal interactions, and behaviors, and their impact on colleagues and patients (reflective mindfulness); to develop clear objectives and goals for improvement in some form of a learning plan	
Milestones	Examples
Level 1 <i>Demonstrates self-awareness and identifies gaps in knowledge, skills, and experience; incorporates feedback</i>	<ul style="list-style-type: none"> ● Describes current skills and/or knowledge gaps ● Incorporates feedback from one procedure to future procedures
Level 2 <i>Teaches medical students, residents, and patients in informal settings; seeks faculty mentorship for self</i>	<ul style="list-style-type: none"> ● Requests mentorship of faculty for specific project and/or seeks professional guidance ● Prepares and teaches an informal “chalk talk” to residents and/or medical students
Level 3 <i>Teaches health professionals in formal settings (e.g., nursing in-service training, residency teaching conference); mentors medical students</i>	<ul style="list-style-type: none"> ● Delivers a formal presentation to department or division which is scheduled during usual conference time ● Assists a medical student or resident in drafting and submitting a case report to a professional society annual meeting
Level 4 <i>Organizes educational activities at the program level; mentors residents and other health care professionals</i>	<ul style="list-style-type: none"> ● Creates and hosts an educational series such as a journal club, including determining topics and inviting speakers
Level 5 <i>Designs and implements clinical rotations, curricula, or learning and assessment tools; models and teaches mentoring to others</i>	<ul style="list-style-type: none"> ● Creates and participates in a new rotation ● Designs and teaches a new point-of-care ultrasound curriculum to residents during their obstetric anesthesia rotation
Assessment Models or Tools	<ul style="list-style-type: none"> ● Direct observation ● Multisource feedback
Curriculum Mapping	<ul style="list-style-type: none"> ●
Notes or Resources	<ul style="list-style-type: none"> ●

Professionalism 1: Professional Behavior and Ethical Principles in Obstetric Anesthesiology Overall Intent: To recognize and address lapses in ethical and professional behavior, demonstrate ethical and professional behaviors, and use appropriate resources for managing ethical and professional dilemmas	
Milestones	Examples
<p>Level 1 <i>Identifies potential triggers for professionalism lapses</i></p> <p><i>Describes when and how to report lapses in professionalism</i></p> <p><i>Demonstrates knowledge of the ethical principles underlying patient care</i></p>	<ul style="list-style-type: none"> ● Describes the impact of fatigue on clinical performance ● Recognizes that personal “bias” may interfere with professionalism ● Describes institutional safety reporting systems to report a near miss, a process problem or patient event, or concern for impaired provider ● Articulates how the principle of “do no harm” applies to a patient who may not need a labor epidural even though the learning opportunity exists ● Identifies and defines basic principles of ethical care (e.g., autonomy, beneficence, non-maleficence, veracity, confidentiality, and social responsibility and justice, among others)
<p>Level 2 <i>Demonstrates insight into professional behavior in routine situations</i></p> <p><i>Takes responsibility for one’s own professionalism lapses</i></p> <p><i>Analyzes straightforward situations using ethical principles</i></p>	<ul style="list-style-type: none"> ● Respectfully approaches a resident who is late to call shift about the importance of being on time ● Maintains patient confidentiality in public situations ● Notifies appropriate supervisor in a timely way when unable to fulfill a responsibility ● After being overheard “venting” about a challenging patient situation, apologizes for their behavior and is more careful with reflecting on such situations ● Identifies and applies ethical principles involved in the informed consent process ● Identifies surrogate for impaired patients
<p>Level 3 <i>Demonstrates professional behavior in complex or stressful situations</i></p> <p><i>Recognizes need to seek help in managing and resolving complex interpersonal situations</i></p> <p><i>Analyzes complex situations using ethical principles</i></p>	<ul style="list-style-type: none"> ● Appropriately responds to an upset family member following a peri-partum complication ● Appropriately handles conversations in the operating room during stressful situations such as acute blood loss and hemodynamic instability ● After noticing a colleague’s inappropriate social media post, reviews policies related to posting of content and seeks guidance ● Seeks faculty input on handling conflict in the operating room ● Offers appropriate anesthetic care options to a patient whose fetus has a non-survivable condition, while recognizing own biases, while providing patient-centered care

	<ul style="list-style-type: none"> ● Reviews institutional policies regarding blood refusal and offers options for peri-partum management
<p>Level 4 <i>Recognizes situations that may trigger professionalism lapses and intervenes to prevent lapses in oneself</i></p> <p><i>Actively solicits help and acts on recommendations to resolve complex interpersonal situations</i></p> <p><i>Recognizes and uses resources for managing and resolving ethical dilemmas</i></p>	<ul style="list-style-type: none"> ● Actively solicits the perspectives of others ● Models respect for patients and promotes the same from colleagues, when a patient has been waiting an excessively long time for their epidural placement ● Demonstrates mindfulness by identifying and sharing situations where the fellow may be vulnerable to professionalism lapses (e.g., fatigued, under stress, difficult prior interactions with team members), thus behaving as a role model to others ● Recognizes and uses ethics consults, literature, and/or risk-management/legal counsel to resolve ethical dilemmas ● Recognizes and manages situations of medical futility ● Reaches out to a local or hospital ethics expert for guidance on an ethically challenging patient case
<p>Level 5 <i>Coaches others when their behavior fails to meet professional expectations</i></p> <p><i>Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution</i></p>	<ul style="list-style-type: none"> ● Coaches others when their behavior fails to meet professional expectations and creates a performance improvement plan to prevent recurrence ● Reflects on a resident's professionalism lapse and offers mature and sound guidance to address the lapse as well as prevent it in the future ● Participates in system-level projects to enhance health equity, thus upholding the principle of social responsibility and justice ● Identifies and seeks to address system-wide factors or barriers to promoting a culture of ethical behavior through participation in a work group, committee, or taskforce (e.g., ethics committee or an ethics subcommittee, risk management committee, root cause analysis review, patient safety or satisfaction committee, professionalism work group, Institutional Review Board, resident grievance committee)
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Direct observation ● Global evaluation ● Multisource feedback ● Oral or written self-reflection ● OSCE ● Simulation

Curriculum Mapping	<ul style="list-style-type: none"> •
Notes or Resources	<ul style="list-style-type: none"> • ASA. ASA Code of Ethics. https://www.asanet.org/code-ethics. Accessed 2020. • American Medical Association. Ethics. https://www.ama-assn.org/delivering-care/ama-code-medical-ethics. Accessed 2020. • Byyny RL, Papadakis MA, Paauw DS. <i>Medical Professionalism Best Practices</i>. Menlo Park, CA: Alpha Omega Alpha Medical Society; 2015. https://alphaomegalpha.org/pdfs/2015MedicalProfessionalism.pdf. Accessed 2019. • Domen RE, Johnson K, Conran RM, et al. Professionalism in pathology: a case-based approach as a potential education tool. <i>Arch Pathol Lab Med</i>. 2017; 141:215-219. https://pubmed.ncbi.nlm.nih.gov/27763788/. • Levinson W, Ginsburg S, Hafferty FW, Lucey CR. <i>Understanding Medical Professionalism</i>. 1st ed. New York, NY: McGraw-Hill Education; 2014.

Professionalism 2: Accountability/Conscientiousness in Obstetric Anesthesiology Overall Intent: To take responsibility for one’s own actions and the impact on patients and other members of the health care team	
Milestones	Examples
Level 1 <i>Responds promptly to requests or reminders to complete tasks</i> <i>Takes responsibility for failure to complete tasks</i>	<ul style="list-style-type: none"> ● Responds promptly to reminders from program administrator to complete work hour logs ● Attends conferences and other educational activities on time ● Apologizes to team member(s) for unprofessional behavior without prompting
Level 2 <i>Performs tasks and responsibilities in a timely manner</i> <i>Recognizes situations that may impact one’s own ability to complete tasks and responsibilities in a timely manner</i>	<ul style="list-style-type: none"> ● Completes administrative tasks, safety modules, and licensing requirements before deadlines ● Before leaving town, completes tasks in anticipation of lack of computer access/internet while traveling
Level 3 <i>Performs tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations</i> <i>Takes responsibility for tasks not completed in a timely manner and identifies strategies to prevent recurrence</i>	<ul style="list-style-type: none"> ● Notifies attending of multiple competing demands on call, appropriately triages tasks, and asks for assistance from other residents or faculty members as needed ● Appropriately notifies residents and fellows on day service about overnight call events during transition of care or hand-off to avoid lapses in patient safety ● Apologizes to team member(s) for unprofessional behavior without prompting and offers restitution
Level 4 <i>Prioritizes tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations</i> <i>Proactively implements strategies to ensure that the needs of patients, teams, and systems are met</i>	<ul style="list-style-type: none"> ● Takes responsibility for inadvertently omitting key patient information during hand-off ● Discusses lapse in care with the patient, patient’s family, and interprofessional team in a timely and professional manner ● Follows up with a patient who had unplanned conversion to general anesthesia during cesarean delivery
Level 5 <i>Designs and implements an institutional systems approach to ensure timely task completion and shared responsibility</i>	<ul style="list-style-type: none"> ● Coordinates a multidisciplinary team to facilitate obstetric ICU care ● Leads multidisciplinary team in peri-operative root cause analysis to improve system practices around surgical site infection
Assessment Models or Tools	<ul style="list-style-type: none"> ● Compliance with deadlines and timelines ● Direct observation

Obstetric Anesthesiology Supplemental Guide

	<ul style="list-style-type: none">• Global evaluations• Multisource feedback• Self-evaluations and reflective tools• Simulation
Curriculum Mapping	<ul style="list-style-type: none">•
Notes or Resources	<ul style="list-style-type: none">• ASA. ASA Code of Ethics. https://www.asanet.org/code-ethics. Accessed 2020.• Code of conduct from fellow/resident institutional manual• Expectations of fellowship program regarding accountability and professionalism

Professionalism 3: Well-Being in Obstetric Anesthesiology Overall Intent: To identify, use, manage, improve, and seek help for personal and professional well-being for self and others	
Milestones	Examples
Level 1 <i>Recognizes the importance of addressing personal and professional well-being</i>	<ul style="list-style-type: none"> ● Acknowledges own response to a patient with intrauterine fetal demise ● Discusses with the program director well-being concerns that might affect performance
Level 2 <i>Lists available resources for personal and professional well-being</i> <i>Describes institutional resources that are meant to promote well-being</i>	<ul style="list-style-type: none"> ● Identifies the employee assistance program (EAP) as a resource for dealing with personal stressors ● Identifies resources to manage personal response to a medical error ● Completes e-learning modules (or other modality) related to fatigue management and sleep deprivation ● Demonstrates how to access an institutional crisis line ● Independently identifies the stress of relationship issues, difficult patients, and financial pressures, and seeks appropriate help
Level 3 <i>With assistance, proposes a plan to promote personal and professional well-being</i> <i>Recognizes which institutional factors affect well-being</i>	<ul style="list-style-type: none"> ● With faculty assistance, develops a reflective response to deal with personal impact of difficult patient encounters and disclosures ● Identifies inefficiencies with the EHR system and how it contributes to burnout
Level 4 <i>Independently develops a plan to promote personal and professional well-being</i> <i>Describes institutional factors that positively and/or negatively affect well-being</i>	<ul style="list-style-type: none"> ● Independently identifies ways to manage personal stress ● Understands how shift assignment and shift schedules can impact well-being
Level 5 <i>Creates institutional-level interventions that promote colleagues' well-being</i> <i>Describes institutional programs designed to examine systemic contributors to burnout</i>	<ul style="list-style-type: none"> ● Assists in organizational efforts to address clinician well-being after adverse outcome ● Develops an institutional mindfulness program aimed at all team members ● Participates in a program to study the root cause of physician burn out
Assessment Models or Tools	<ul style="list-style-type: none"> ● Direct observation ● Group interview or discussions for team activities ● Individual interview ● Institutional online training modules

	<ul style="list-style-type: none"> • Self-assessment and personal learning plan
Curriculum Mapping	<ul style="list-style-type: none"> •
Notes or Resources	<ul style="list-style-type: none"> • This subcompetency is not intended to evaluate a fellow’s well-being, but to ensure each fellow has the fundamental knowledge of factors that impact well-being, the mechanisms by which those factors impact well-being, and available resources and tools to improve well-being. • ACGME. Well-Being Tools and Resources. https://dl.acgme.org/pages/well-being-tools-resources. Accessed 2022. • Hicks PJ, Schumacher D, Guralnick S, Carraccio C, Burke AE. Domain of competence: personal and professional development. <i>Acad Pediatr</i>. 2014;14(2 Suppl):S80-97. https://linkinghub.elsevier.com/retrieve/pii/S1876-2859(13)00332-X. • Local resources, including the employee assistance program (EAP)

Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication in Obstetric Anesthesiology Overall Intent: To deliberately use language and behaviors to form constructive relationships with patients, to identify communication barriers including self-reflection on personal biases, and minimize them in the doctor-patient relationships; to organize and lead communication around shared decision making	
Milestones	Examples
<p>Level 1 <i>Communicates with patients and their families in an understandable and respectful manner</i></p> <p><i>Provides timely updates to patients and patients' families</i></p>	<ul style="list-style-type: none"> ● Introduces self and faculty member including roles, identifies patient and others in the room, and engages all parties in health care discussion ● Provides updates to the family after an unanticipated ICU admission
<p>Level 2 <i>Customizes communication in the setting of personal biases and barriers with patients and patients' families</i></p> <p><i>Actively listens to patients and patients' families to elicit patient preferences and expectations</i></p>	<ul style="list-style-type: none"> ● Avoids medical jargon and restates patient perspective when discussing general versus regional anesthesia ● Actively listens to patients and patients' families to elicit patient preferences and expectations for labor analgesia
<p>Level 3 <i>Explains complex and difficult information to patients and patients' families</i></p> <p><i>Uses shared decision-making to make a personalized care plan</i></p>	<ul style="list-style-type: none"> ● Explains potential need for conversion from regional to general anesthesia for cesarean delivery ● Following a discussion of the risks and benefits, develops treatment plan for patient with post-dural puncture headache
<p>Level 4 <i>Facilitates difficult discussions with patients and patients' families</i></p> <p><i>Effectively negotiates and manages conflict among patients, patients' families, and the health care team</i></p>	<ul style="list-style-type: none"> ● Explains complication or unanticipated clinical condition requiring ICU admission, including expected clinical course ● Explains to a patient and their family medical reasoning behind limiting presence of family in the delivery or operating room ● Manages conflict arising from a patient or family who is dissatisfied with the anesthetic care for labor analgesia ● Manages conflict arising from unavoidable delay in care
<p>Level 5 <i>Mentors others in the facilitation of crucial conversations</i></p> <p><i>Mentors others in conflict resolution</i></p>	<ul style="list-style-type: none"> ● Leads a discussion group on personal experience of moral distress ● Develops a residency simulation on conflict resolution

Assessment Models or Tools	<ul style="list-style-type: none"> ● Direct observation ● Self-assessment including self-reflection exercises ● Case-based discussions
Curriculum Mapping	<ul style="list-style-type: none"> ●
Notes or Resources	<ul style="list-style-type: none"> ● Laidlaw A, Hart J. Communication skills: an essential component of medical curricula. Part I: Assessment of clinical communication: AMEE Guide No. 51. <i>Med Teach</i>. 2011;33(1):6-8. https://www.tandfonline.com/doi/full/10.3109/0142159X.2011.531170. ● Makoul G. Essential elements of communication in medical encounters: The Kalamazoo consensus statement. <i>Acad Med</i>. 2001;76:390-393. https://pubmed.ncbi.nlm.nih.gov/11299158/. ● Makoul G. The SEGUE Framework for teaching and assessing communication skills. <i>Patient Educ Couns</i>. 2001;45(1):23-34. https://pubmed.ncbi.nlm.nih.gov/11602365/. ● Symons AB, Swanson A, McGuigan D, Orrange S, Akl EA. A tool for self-assessment of communication skills and professionalism in residents. <i>BMC Med Educ</i>. 2009;9:1. https://bmcmmededuc.biomedcentral.com/articles/10.1186/1472-6920-9-1.

Interpersonal and Communication Skills 2: Patient Counseling in Obstetric Anesthesiology Overall Intent: To provide complete, accurate information to patients and family members in a manner that allows clear understanding and collaborative decision making	
Milestones	Examples
Level 1 <i>Demonstrates understanding of the informed consent process</i>	<ul style="list-style-type: none"> Obtains informed consent for uncomplicated patients for labor analgesia, and for Cesarean delivery, including transfusion
Level 2 <i>Answers questions about treatment plans and seeks guidance when appropriate</i>	<ul style="list-style-type: none"> Answers questions about anesthetic care for labor analgesia, Cesarean delivery, and other obstetric procedures
Level 3 <i>Counsels patients through the decision-making process, including answering questions, for simple clinical problems</i>	<ul style="list-style-type: none"> Discusses the anesthetic options with a patient for external cephalic version
Level 4 <i>Counsels patients through the decision-making process, including answering questions, for complex clinical problems</i>	<ul style="list-style-type: none"> Discusses the anesthetic options with a patient with placenta percreta for Cesarean delivery
Level 5 <i>Counsels patients through the decision-making process, including answering questions, for uncommon clinical problems</i>	<ul style="list-style-type: none"> Discusses the anesthetic options with a patient with complex cardiac disease (e.g., vaginal delivery with passive second stage, use of invasive monitoring)
Assessment Models or Tools	<ul style="list-style-type: none"> Case-based discussions Direct observation
Curriculum Mapping	<ul style="list-style-type: none">
Notes or Resources	<ul style="list-style-type: none"> Waisel DB and Truog RD. Informed Consent. <i>Anesthesiology</i>, 87(4):968-978, 1997.

Interpersonal and Communication Skills 3: Interprofessional and Team Communication in Obstetric Anesthesiology Overall Intent: To effectively communicate with the health care team, including consultants, in both straightforward and complex situations	
Milestones	Examples
<p>Level 1 <i>Respectfully requests or receives consultations</i></p> <p><i>Uses language that values all members of the health care team</i></p> <p><i>Respectfully receives feedback from the health care team</i></p>	<ul style="list-style-type: none"> ● Responds promptly and politely to a request for help with a difficult IV placement ● Receives a consult from maternal-fetal medicine) for a high-risk obstetric patient with preeclampsia and limited exercise capacity for labor analgesia and relays the alteration in the pain management plan to the obstetric team ● Receives a labor pain consult request on a parturient with a prior history of back surgery, asks clarifying questions politely, and expresses appreciation for the motivation behind the consult request ● Acknowledges the contribution of each member of the patient care team to the patient
<p>Level 2 <i>Clearly, concisely, and promptly requests or responds to a request for consultation</i></p> <p><i>Communicates information effectively with all health care team members</i></p> <p><i>Solicits feedback on performance as a member of the health care team</i></p>	<ul style="list-style-type: none"> ● Communicates pre-operative plans and treatment modifications with the attending anesthesiologist concisely in a timely manner ● Communicates intra-operative events to the surgical staff and attending anesthesiologist clearly and concisely in an organized and timely manner ● Conducts post-operative visits and discusses patient complications with supervising attending while reflecting on personal role in the patient’s care
<p>Level 3 <i>Uses closed-loop communication to verify understanding</i></p> <p><i>Adapts communication style to fit team needs</i></p> <p><i>Communicates concerns and provides feedback to peers and learners</i></p>	<ul style="list-style-type: none"> ● While leading an intra-operative maternal resuscitation, clearly delegates tasks and asks if team members understand their roles ● Asks other members of the health care team to repeat back recommendations to ensure understanding ● When receiving treatment recommendations from an attending physician in an intra-operative resuscitation, repeats back the plan to ensure understanding ● Provides constructive feedback to a medical student, and/or resident during neuraxial insertion

<p>Level 4 <i>Coordinates recommendations from different members of the health care team to optimize patient care</i></p> <p><i>Maintains effective communication in crisis situations</i></p> <p><i>Communicates constructive feedback to superiors</i></p>	<ul style="list-style-type: none"> ● Collaborates with surgical colleagues to plan for post-operative analgesia in a patient on buprenorphine ● Explains rationale for institution of the massive transfusion protocol during intra-operative post-partum hemorrhage ● Alerts to a breach in sterility in neuraxial placement by a faculty member ● Cautions faculty member about an imminent medication administration error
<p>Level 5 <i>Role models flexible communication strategies that value input from all health care team members, resolving conflict when needed</i></p> <p><i>Leads an after-event debrief of the health care team</i></p> <p><i>Facilitates regular health care team-based feedback in complex situations</i></p>	<ul style="list-style-type: none"> ● Mediates a conflict resolution between different members of the health care team ● Leads a post-code team debriefing ● Prompts a post-case sign-out after a case requiring a massive transfusion and ICU care
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> ● Direct observation ● Global assessment ● Medical record (chart) audit ● Multisource feedback ● Simulation
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> ●
<p>Notes or Resources</p>	<ul style="list-style-type: none"> ● AHRQ. Curriculum Materials. https://www.ahrq.gov/teamstepps/curriculum-materials.html. Accessed 2020. ● Dehon E, Simpson K, Fowler D, Jones A. Development of the faculty 360. <i>MedEdPORTAL</i>. 2015;11:10174. https://www.mededportal.org/publication/10174/. 2020. ● Green M, Parrott T, Cook G., Improving your communication skills. <i>BMJ</i>. 2012;344:e357. https://www.bmj.com/content/344/bmj.e357. ● Henry SG, Holmboe ES, Frankel RM. Evidence-based competencies for improving communication skills in graduate medical education: a review with suggestions for implementation. <i>Med Teach</i>. 2013;35(5):395-403. https://www.tandfonline.com/doi/full/10.3109/0142159X.2013.769677.

- Roth CG, Eldin KW, Padmanabhan V, Freidman EM. Twelve tips for the introduction of emotional intelligence in medical education. *Med Teach*. 2018:1-4.
<https://www.tandfonline.com/doi/full/10.1080/0142159X.2018.1481499>.
- Tait AR, Teig MK, Voepel-Lewis T. Informed consent for anesthesia: A review of practice and strategies for optimizing the consent process. *Can J Anaesth*. 2014;61(9):832-842.
<https://pubmed.ncbi.nlm.nih.gov/24898765/>.

Interpersonal and Communication Skills 4: Communication within Health Care Systems in Obstetric Anesthesiology Overall Intent: To effectively communicate using a variety of methods	
Milestones	Examples
<p>Level 1 <i>Accurately records information in the patient record; demonstrates judicious use of documentation shortcuts</i></p> <p><i>Safeguards patients' personal health information</i></p> <p><i>Communicates through appropriate channels as required by institutional policy</i></p>	<ul style="list-style-type: none"> ● Creates accurate documentation but it may include extraneous information ● Avoids talking about patients in the elevator, public spaces, or on social media ● Identifies institutional and departmental communication hierarchy for concerns and safety issues ● Only uses secure communication modalities when sharing protected health information
<p>Level 2 <i>Accurately records information in the anesthetic record for non-complex cases</i></p> <p><i>Documents required data in formats specified by institutional policy</i></p> <p><i>Respectfully communicates concerns about the system</i></p>	<ul style="list-style-type: none"> ● Completes all components of the intra-operative record in a timely manner with modifications ● Completes neuraxial insertion note for a complex parturient using the appropriate template and correct elements ● Correctly uses the institutional system to file a report of a safety issue ● Recognizes that a communication breakdown has happened and respectfully brings the breakdown to the attention of the faculty member
<p>Level 3 <i>Accurately records information in the anesthetic record and communicates complex care decisions for complex cases</i></p> <p><i>Appropriately selects direct and indirect forms of communication based on context</i></p> <p><i>Respectfully communicates concerns about the system and contributes to solutions</i></p>	<ul style="list-style-type: none"> ● Documents critical event notes in the medical record concisely and in a timely manner ● Follows up and appropriately manages a patient in person regarding a difficult labor epidural catheter insertion complicated by post-dural puncture headache with follow-up ● Provides a written handout on risks of sugammadex and contraception ● Knows when to direct concerns locally, departmentally, or institutionally, i.e., appropriate escalation

<p>Level 4 <i>Uses medical record functionality to highlight challenges in anesthetic care to facilitate future peri-operative management</i></p> <p><i>Models exemplary written or verbal communication</i></p> <p><i>Uses appropriate channels to offer clear and constructive suggestions to improve the system</i></p>	<ul style="list-style-type: none"> • Creates consistently accurate, organized, and concise documentation, frequently incorporating anticipatory guidance • Creates exemplary pre-operative assessments that are used by a more senior fellow or faculty to teach others • Talks directly to an obstetrician and/or maternal fetal medicine physician (or anesthesia colleague) about breakdowns in communication to prevent recurrence
<p>Level 5 <i>Explores innovative uses of the medical record to facilitate peri-operative management</i></p> <p><i>Guides departmental or institutional policies and procedures around communication</i></p> <p><i>Initiates difficult conversations with appropriate stakeholders to improve the system</i></p>	<ul style="list-style-type: none"> • Leads a task force established by the hospital QI committee to develop a plan to improve house staff hand-offs • Actively participates in a committee to develop a pandemic disaster response plan in obstetrics • Contacts hospital leadership to discuss ways to improve resident and fellow well-being
<p>Assessment Models or Tools</p>	<ul style="list-style-type: none"> • Direct observation • Medical record (chart) audit • Multisource feedback • OSCE • Simulation
<p>Curriculum Mapping</p>	<ul style="list-style-type: none"> •
<p>Notes or Resources</p>	<ul style="list-style-type: none"> • APSF. Improving Post Anesthesia Care Unit (PACU) Handoff by Implementing a Succinct Checklist. https://lhatrustfunds.com/wp-content/uploads/2015/07/PACU-handoff.pdf. Accessed 2020. • Bierman JA, Hufmeyer KK, Liss DT, Weaver AC, Heiman HL. Promoting responsible electronic documentation: validity evidence for a checklist to assess progress notes in the electronic health record. <i>Teach Learn Med.</i> 2017;29(4):420-432. https://www.tandfonline.com/doi/full/10.1080/10401334.2017.1303385. • Haig KM, Sutton S, Whittington J. SBAR: a shared mental model for improving communication between clinicians. <i>Jt Comm J Qual Patient Saf.</i> 2006;32(3):167-175. https://www.jointcommissionjournal.com/article/S1553-7250(06)32022-3/fulltext.

- Starmer AJ, et al. I-pass, a mnemonic to standardize verbal handoffs. *Pediatrics*. 2012;129(2):201-204.
https://pediatrics.aappublications.org/content/129/2/201?sso=1&sso_redirect_count=1&nfstatus=401&nftoken=00000000-0000-0000-0000-000000000000&nfstatusdescription=ERROR%3a+No+local+token.

To help programs transition to the new version of the Milestones, the ACGME has mapped the original Milestones 1.0 to the new Milestones 2.0. Indicated below are where the subcompetencies are similar between versions. These are not exact matches but are areas that include similar elements. Not all subcompetencies map between versions. Inclusion or exclusion of any subcompetency does not change the educational value or impact on curriculum or assessment.

Milestones 1.0	Milestones 2.0
PC1: Technical Skills	PC1: Technical Skills in Obstetric Anesthesiology
PC2: Triage and Coordination of Obstetric Anesthesia Care	PC2: Triage and Coordination of Obstetric Anesthesia Care
PC3: Crisis Management and Management Complications	PC3: Crisis Management for the Obstetric Patient
PC4: Pre-operative Assessment and Peri-anesthetic Care Planning	PC4: Ante-partum Consultation, Assessment, and Peri-anesthetic Care planning
	PC5: Point-of-Care Ultrasound for Obstetric Patients
MK1: Obstetric Anesthesiology	MK1: Obstetric Anesthesiology
MK2: Obstetrics and Neonatology Knowledge Applied to Obstetric Anesthesiology	MK2: Obstetrics and Neonatology Knowledge Applied to Obstetric Anesthesiology
SBP1: Interprofessional and Transitions of Care	SBP2: System Navigation for Patient-Centered Care in Obstetric Anesthesiology
SBP2: Incorporation of Patient Safety and Quality Improvement into Clinical Practice	SBP1: Patient Safety and Quality Improvement in Obstetric Anesthesiology
SBP3: Understanding of Health Care Economics: Cost-awareness and Cost-benefit analysis	SBP3: Physician Role in Health Care Systems in Obstetric Anesthesiology
PBL1: Self-directed Learning and Scholarly Activity	PBL1: Evidence-Based Practice and Scholarship in Obstetric Anesthesiology PBL2: Reflective Practice and Commitment to Personal Growth in Obstetric Anesthesiology
PBL2: Education of Team Members and Other Health Care Providers	PBL3: Mentorship and Teaching in Obstetric Anesthesiology
PROF1: Commitment to Institution, Department, and Colleagues	PROF1: Professional Behavior and Ethical Principles in Obstetric Anesthesiology PROF2: Accountability/Conscientiousness in Obstetric Anesthesiology
PROF2: Receiving and Giving Feedback	PBL2: Reflective Practice and Commitment to Personal Growth in Obstetric Anesthesiology

Obstetric Anesthesiology Supplemental Guide

	ICS3: Interprofessional and Team Communication in Obstetric Anesthesiology
PROF3: Responsibility to Maintain Personal, Emotional, Physical, and Mental Health	PROF3: Well-Being in Obstetric Anesthesiology
ICS1: Communication with Patients and Families	ICS1: Patient- and Family-Centered Communication in Obstetric Anesthesiology
	ICS2: Patient Counseling in Obstetric Anesthesiology
	ICS4: Communication within Health Care Systems in Obstetric Anesthesiology

Available Milestones Resources

Milestones 2.0: Assessment, Implementation, and Clinical Competency Committees Supplement, 2021 - <https://meridian.allenpress.com/jgme/issue/13/2s>

Milestones Guidebooks: <https://www.acgme.org/milestones/resources/>

- *Assessment Guidebook*
- *Clinical Competency Committee Guidebook*
- *Clinical Competency Committee Guidebook Executive Summaries*
- *Implementation Guidebook*
- *Milestones Guidebook*

Milestones Guidebook for Residents and Fellows: <https://www.acgme.org/residents-and-fellows/the-acgme-for-residents-and-fellows/>

- *Milestones Guidebook for Residents and Fellows*
- *Milestones Guidebook for Residents and Fellows Presentation*
- *Milestones 2.0 Guide Sheet for Residents and Fellows*

Milestones Research and Reports: <https://www.acgme.org/milestones/research/>

- *Milestones National Report*, updated each fall
- *Milestones Predictive Probability Report*, updated each fall
- *Milestones Bibliography*, updated twice each year

Developing Faculty Competencies in Assessment courses - <https://www.acgme.org/meetings-and-educational-activities/courses-and-workshops/developing-faculty-competencies-in-assessment/>

Assessment Tool: Direct Observation of Clinical Care (DOCC) - <https://dl.acgme.org/pages/assessment>

Assessment Tool: Teamwork Effectiveness Assessment Module (TEAM) - <https://team.acgme.org/>

Improving Assessment Using Direct Observation Toolkit - <https://dl.acgme.org/pages/acgme-faculty-development-toolkit-improving-assessment-using-direct-observation>

Remediation Toolkit - <https://dl.acgme.org/courses/acgme-remediation-toolkit>

Learn at ACGME has several courses on Assessment and Milestones - <https://dl.acgme.org/>