The Obstetric Anesthesiology Milestone Project

A Joint Initiative of

The Accreditation Council for Graduate Medical Education

The American Board of Anesthesiology





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The Milestones are designed only for use in evaluation of the fellow in the context of their participation in ACGME-accredited residency or fellowship programs. The Milestones provide a framework for assessment of the development of the fellow in key dimensions of the elements of physician competency in a specialty or subspecialty. They neither represent the entirety of the dimensions of the six domains of physician competency, nor are they designed to be relevant in any other context.

Obstetric Anesthesiology Milestones

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Milestone Reporting

This document presents Milestones designed for programs to use in semi-annual review of fellow performance and reporting to the ACGME. Milestones are knowledge, skills, attitudes, and other attributes for each of the ACGME competencies organized in a developmental framework from less to more advanced. They are descriptors and targets for fellow performance as a fellow moves from entry into fellowship through graduation. In the initial years of implementation, the Review Committee will examine Milestone performance data for each program's fellows as one element in the Next Accreditation System (NAS) to determine whether fellows overall are progressing.

For each period, review and reporting will involve selecting milestone levels that best describe a fellow's current performance and attributes. Milestones are arranged into numbered levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert in the subspecialty.

Selection of a level implies that the fellow substantially demonstrates the milestones in that level, as well as those in lower levels (see the diagram on page v).

- Level 1: The fellow demonstrates milestones expected of an incoming fellow.
- Level 2: The fellow is advancing and demonstrates additional milestones, but is not yet performing at a mid-fellowship level.
- **Level 3:** The fellow continues to advance and demonstrate additional milestones, consistently including the majority of milestones targeted for fellowship.
- Level 4: The fellow has advanced so that he or she now substantially demonstrates the milestones targeted for fellowship. This level is designed as the graduation target.
- **Level 5:** The fellow has advanced beyond performance targets set for fellowship and is demonstrating "aspirational" goals which might describe the performance of someone who has been in practice for several years. It is expected that only a few exceptional fellows will reach this level.

Additional Notes

Level 4 is designed as the graduation *target* and *does not* represent a graduation *requirement*. Making decisions about readiness for graduation is the purview of the fellowship program director. Study of Milestone performance data will be required before the ACGME and its partners will be able to determine whether milestones in the first four levels appropriately represent the developmental framework, and whether Milestone data are of sufficient quality to be used for high-stakes decisions.

Examples are provided with some milestones. Please note that the examples are not the required element or outcome; they are provided as a way to share the intent of the element.

Some milestone descriptions include statements about performing independently. These activities must occur in conformity to the ACGME supervision guidelines, as well as institutional and program policies. For example, a fellow who performs a procedure independently must, at a minimum, be supervised through oversight.

Answers to Frequently Asked Questions about Milestones are available on the Milestones web page: <u>http://www.acgme.org/acgmeweb/Portals/0/MilestonesFAQ.pdf</u>.

The diagram below presents an example set of milestones for one sub-competency in the same format as the ACGME Report Worksheet. For each reporting period, a fellow's performance on the milestones for each sub-competency will be indicated by selecting the level of milestones that best describes that fellow's performance in relation to those milestones

Level1	Level 2	Level 3		Level4	Level5
Coordinates other	Advocates for appropriate	Manages the an	esthesia	Formulates and tailors	Designs and implements
members of the obstetric	care setting and	care team in the	labor	anesthetic plans that	multidisciplinary
anesthesia care team	disposition	suite to insure th	hat cases	include consideration of	institutional protocols for
		are prioritized		medical, obstetric, and	efficient diagnosis and
Defines clinically	Identifies limited	appropriately		anesthetic risk factors, as	coordination of care for
appropriate priorities	resources that may impact			well as patient preference	pregnant patients with a
when caring for multiple	the delivery of care to one	Serves as a cons		and available resources for	specific high risk condition
obstetricpatients	or more patients	the multidisciplin		patients requiring complex	(e.g., hemorrhage risk,
		team regarding		care	emergent cesarean
Identifies risk factors that	Consults obstetric,	management, a			delivery)
may predispose patients	neonatal, and nursing	disposition of th		Serves as a consultant to	
to medical or obstetric	colleagues to define	ill obstetric patie		the multidisciplinary care	
complications (e.g. risk	priorities when resources	direct supervisio	on	team regarding evaluation,	
factors for PPH	are limited			management, and	
				disposition of the critically-	
				ill obstetric patient with	
				conditional independence	
				Directs resources to	
				optimize care for multiple	
				patients simultaneously	
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Comments:					
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Selecting a respon	ise box in the middle o	fa	Selec	cting a response box o	n the line in between l
				e .	
level implies that	milestones in that leve	and	Indic	ates that milestones in	n lower levels have bee
in lower levels have	e been substantially		subs	tantially demonstrated	d as well as some miles
demonstrated.	· · · · · · · · · · · · · · · · · · ·			e higher level(s).	
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Performs spinal, epidural, and combined spinal/epidural blocks in obstetric patients, with conditional independencedConsistently performs neuraxial anesthesiaWith minimal assistance, manages problems or complications associated with neuraxial anesthesiaWith conditional independence, manages problems or complications associated with neuraxial anesthesiaServes as a consultant for initiation and managementDemonstrates advanced airway management techniques in the obstetric patient (e.g., awake intubation, video laryngoscopy)Identifies and manages a poorly functioning neuraxial anesthesia in complex patients (e.g., those with spinal instrumentation or with morbid obesity)With minimal assistance, manages problems or complications associated anesthesiaWith conditional independence, manages problems or complications associated with neuraxial analgesia for laborWith conditional independenceServes as a consultant for initiation and management technically challenging neuraxial anesthesia of neuraxial anesthesia in complex patients (e.g., those with spinal instrumentation or with morbid obesity)With minimal assistance, meuraxial analgesia for laborWith neuraxial analgesia for land combined spinal/epidural blocks to residents and other members of the care teamSupervises and provides consultation to other members of the care teamObtains vascular access in nordificult obstetric situations with conditional independenceObtains vascular access in in performing routine spinal, epidural, and combined spinal/epidural blocks in obstetric patientsWith conditional independenceWith conditional independence <th>Level 1</th> <th>Level 2</th> <th>Level 3</th> <th>Level 4</th> <th>Level 5</th>	Level 1	Level 2	Level 3	Level 4	Level 5
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Supervises junior residents in performing routine spinal, epidural, and combined spinal/epidural					
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in performing routine spinal, epidural, and combined spinal/epidural		Supervises junior residents			
spinal, epidural, and combined spinal/epidural					
combined spinal/epidural					

		Level 3	Level 4	Level 5
oordinates other	Advocates for appropriate	Manages the anesthesia	Formulates and tailors	Designs and implements
nembers of the obstetric	care setting and	care team in the labor	anesthetic plans that	multidisciplinary
nesthesia care team	disposition	suite to ensure that cases	include consideration of	institutional protocols for
		are prioritized	medical, obstetric, and	efficient diagnosis and
efines clinically-	Identifies limited	appropriately	anesthetic risk factors, as	coordination of care for
ppropriate priorities	resources that may		well as patient preference	pregnant patients with a
hen caring for multiple	impact the delivery of	With direct supervision,	and available resources,	specific high-risk
bstetric patients	care to one or more	serves as a consultant to	for patients requiring	conditions (e.g.,
	patients	the multidisciplinary care	complex care	hemorrhage, emergent
lentifies risk factors that		team regarding		cesarean delivery)
nay predispose patients	Consults obstetric,	evaluation, management,	With conditional	
o medical or obstetric	neonatal, and nursing	and disposition of the	independence, serves as a	
omplications (e.g., risk	colleagues to define	critically-ill obstetric	consultant to the	
actors for post-partum	priorities when resources	patient	multidisciplinary care	
emorrhage [PPH])	are limited		team regarding	
			evaluation, management,	
			and disposition of the	
			critically-ill obstetric	
			patient	
			Directs resources to	
			optimize care for multiple	
			patients simultaneously	

Level 1	Level 2	Level 3	Level 4	Level 5
Constructs appropriately-	With direct supervision,	With minimal supervision,	With conditional	Serves as a consultant in
prioritized differential	participates as a member	identifies and manages	independence, assumes	critical situations, and is a
diagnoses that include the	of the crisis response	uncommon clinical crises	leadership of crisis	resource to others in the
most likely etiologies for	team for the obstetric	appropriately for the	response team for the	care team
acute clinical	patient	obstetric patient	obstetric patient	
deterioration, and				Designs and implements
initiates appropriate	With supervision,	With minimal supervision,	With conditional	institutional policies and
therapy in the obstetric	recognizes major	directs the management	independence, organizes	protocols for the
patient (e.g., hypotension,	anesthetic or obstetric	of major anesthetic	resources for	management of obstetric
bronchospasm)	complications, and	complications	interdisciplinary and	crises and the
	participates in the multi-		interprofessional	management of
Recognizes and initiates	disciplinary management	With minimal supervision,	management of patient	complications
treatment of common	team	participates in the multi-	complications	
complications and		disciplinary management		
adverse events attributed		of obstetric complications		
to neuraxial anesthesia				

Level 1	Level 2	Level 3	Level 4	Level 5
Performs assessment of	Performs assessment of	Obtains appropriate	Advises the	Coordinates the
pregnant patients,	complex or critically-ill	multidisciplinary	multidisciplinary team	multidisciplinary team
including of common	pregnant patients,	consultation for	involved in the care of the	involved in the care of the
issues that impact	including ordering	management of the	medically-complex	medically-complex
obstetric anesthesia care	laboratory and diagnostic	medically-complex	obstetric patients on	obstetric patients
	studies	pregnant patient	anesthetic issues	
Obtains appropriate				Uses pre-operative
informed consent specific	Obtains appropriate	Writes concise and clear	Appropriately addresses	processes to optimize
to the pregnant patient	informed consent in	summaries of formal	conflicting goals of	subject accrual into
	patients with medical	anesthesia consultations	management in medically-	clinical investigations
Formulates anesthetic	complications and	for complicated obstetric	complex obstetric	
plans that include	challenging social	patients	patients	
consideration of common	situations, including the			
underlying clinical	emancipated minor			
conditions, past medical				
history, fetal status, and	Formulates anesthetic			
medical or surgical risk	plan that includes post-			
	delivery pain			
	management for			
	medically-complex			
	obstetric patients			

Medical Knowledge: Obste	tric Anesthesiology			
Level 1	Level 2	Level 3	Level 4	Level 5
Describes the implications	Demonstrates knowledge	Describes the complex	Synthesizes detailed and	Functions as a consultant
of altered maternal	of the anesthetic	interactions of maternal	up-to-date knowledge of	in obstetric
anatomy and physiology	implications of altered	coexisting disease and	current research and	anesthesiology
to the anesthetic care of	maternal anatomy and	obstetric comorbidities	controversies in obstetric	
healthy patients	physiology to the care of		anesthesiology	Demonstrates knowledge
	patients with coexisting	Demonstrates knowledge		for obtaining grant
Describes the implications	medical conditions (e.g.,	of current controversies in	Demonstrates a working	support and conducting
of altered maternal	HIV, cardiac disease,	anesthetic management	knowledge of the	quality research
anatomy and physiology	pulmonary hypertension)	(e.g., comparison of	institutional review board	
to the anesthetic care of		combined spinal-epidural	and statistical analysis as	
patients with common	Describes the rationale	compared and epidural	applies to research in	
maternal and fetal	for prioritizing the	labor analgesia, effect of	obstetric anesthesia	
comorbidities (e.g.,	simultaneous care of	neuraxial labor analgesia		
preeclampsia, diabetes,	multiple patients with	on the progress of labor,	Demonstrates the	
preterm labor, postdates,	various comorbidities	neurotoxic effects of	knowledge necessary to	
multiple gestation)		anesthetic agents on the	educate residents,	
	Describes the implications	developing brain)	obstetricians, and	
	of anesthetic		generalist	
	interventions at various	Demonstrates knowledge	anesthesiologists on high-	
	stages of pregnancy for	of regulatory implications	risk obstetric	
	non-obstetric surgery	of managing a labor and	anesthesiology	
		delivery unit		
Comments:				

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge	Demonstrates knowledge of the	Demonstrates knowledge of	Demonstrates knowledge	Exhibits detailed and up-
of basic fetal heart rate	obstetric and fetal implications	American College of	of current controversies in	to-date knowledge of
patterns and categories	of Category 2 and 3 fetal heart	Obstetricians and Gynecologists	obstetric management	current research in
	rate tracings	(ACOG) Committee Opinions	(e.g., magnesium therapy	obstetrics and
Demonstrates knowledge		and Practice Bulletins, Society	for cerebral palsy	neonatology
of the effects of routine	Describes Biophysical Profile	of Maternal-Fetal Medicine and	prophylaxis, comparison	
anesthesia care on the	assessment of the fetus	Association of Women's Health,	of induction of labor and	
fetus and neonate		Obstetric, and Neonatal Nurses	expectant management at	
	Achieves Neonatal	Guidelines that pertain to	term, use of fetal pulse	
Demonstrates knowledge	Resuscitation Provider (NRP)	obstetric anesthesia care	oximetry)	
of routine neonatal	certification			
assessment (e.g., Apgar		Exhibits advanced knowledge of	Demonstrates knowledge	
scores)	Demonstrates basic knowledge	the pathophysiology of	of current controversies in	
	of obstetric diseases and	obstetric diseases (e.g.,	neonatal resuscitation	
Demonstrates basic	conditions (e.g., preeclampsia,	preeclampsia, preterm labor)	(e.g., FIO ₂ used for	
knowledge of normal	gestational diabetes,		resuscitation)	
newborn physiology	management of preterm labor,	Demonstrates comprehensive		
	postdates pregnancy, multiple	knowledge of normal and		
	gestation)	abnormal newborn physiology		
	Demonstrates basic knowledge	Demonstrates in-depth		
	of abnormal newborn	knowledge of the fetal and		
	physiology	neonatal implications of		
	prijelelegj	anesthesia		

Level 1	Level 2	Level 3	Level 4	Level 5
With direct supervision,	With indirect supervision,	With indirect supervision,	With conditional	Develops methods to
effectively collaborates as	effectively collaborates as	manages the	independence, leads the	optimize and coordinate
a member of the	a member of an	interprofessional care	interprofessional care	care throughout the
interprofessional team	interprofessional care	team for all clinical	team for all clinical	continuum
within the health care	team during routine care	situations within and	situations	
system	within the health care	between health care		Serves as a role model
	system	systems	With conditional	and teacher in
With direct supervision,			independence,	demonstrating effective
effectively transitions care	With direct supervision,	With direct supervision,	coordinates transitions of	methods for coordinatio
of patients within the	effectively collaborates in	coordinates transitions of	care for all clinical	of care during transitions
health care system	complex clinical situations	care for all clinical	situations	across health care
	(e.g., emergencies) within	situations within and		systems
	the health care system	between health care	Exhibits knowledge of the	
		delivery systems	advantages and	
	With indirect supervision,		disadvantages of different	
	manages transitions of		types of transitions of	
	care within the health		care (e.g., face-to-face,	
	care system		verbal, written,	
			electronic-supported)	

Level 1	Level 2	Level 3	Level 4	Level 5
With prompting,	Identifies common causes	Identifies opportunities	Substantially participates	Leads a patient safety or
incorporates patient	of clinical errors and	and activities to optimize	in a patient safety or	quality improvement
safety principles into	medical device-related	patient safety and quality	quality improvement	initiative
clinical practice	hazards and	of care, and initiates	project	
	complications, and	quality improvement		Ensures appropriate
With prompting,	communicates them to	processes to address	Identifies opportunities to	follow-up or
incorporates principles of	faculty and staff members	them	improve practice to	implementation of safety
continuous quality			optimize patient care	and quality initiatives
improvement into clinical	Reports near misses and	Collaborates with		
practice	complications associated	colleagues to identify	Utilizes data about clinical	
	with clinical care using	ways to reduce the	practice to define	
	incident reporting system	occurrence of near misses	opportunities to improve	
		and complications	patient care	
		Participates in root cause		
		analyses and sentinel		
		event reviews		

Level 1	Level 2	Level 3	Level 4	Level 5
With prompting, considers costs of medications, devices, tests, and procedures when making clinical decisions	Understands general concepts related to the economics of clinical practice, including the costs of care, cost vs. charge relationships, and cost-benefit implications, when selecting medications, devices, tests, and procedures	Consistently integrates cost-awareness and cost- benefit analysis into clinical practice Distinguishes between billing for obstetric analgesia services and operating room anesthesia services	Substantially contributes to programs to reduce costs and improve efficiency of clinical care Identifies opportunities to reduce total costs of care without compromising patient outcomes	Leads a team or teams to determine the most cost- effective strategies for all aspects of a procedure Substantially contributes to structured improvement processes (e.g., LEAN, Define, Measure, Analyze, Improve and Control [DMAIC], Six Sigma) to improve clinical care and reduce costs

Level 1	Level 2	Level 3	Level 4	Level 5
Completes	Critically evaluates the	Independently integrates	Participates in	Participates in editorial
assigned/recommended	scientific literature and	evidence-based practices	development of evidence-	reviews and other
readings, and reviews	understands limitations in	into clinical care	based clinical protocols	scholarly activity for peer-
literature related to	addressing clinical issues		and guidelines	reviewed medical journals
specific patient problems		Participates in clinical		
	Uses self-directed	research projects within	Identifies opportunities to	Participates in
Participates in journal	literature review to	the subspecialty	improve personal clinical	professional society and
clubs, morbidity and	modify patient care		practices and learning	other activities to
mortality conferences, and		Identifies resources to	from multiple sources	advance scholarship
other educational		facilitate critical appraisal		
activities		of the literature (e.g., data	Designs and implements a	Presents an abstract at a
		analysis, statistics, and	clinical research study	peer-reviewed forum
		research design)	based on appropriate	
			research design with the	Submits a manuscript to a
			intent to present and	peer-reviewed journal
			publish	

Level 1	Level 2	Level 3	Level 4	Level 5
Understands the value of disseminating educational information to medical students, residents, and other health care team members	With indirect supervision, effectively explains clinical decision making and its rationale to other members of the health care team	Seeks opportunities to provide thoughtful and relevant communication to other members of the health care team in the clinical setting and in	Actively promotes education of all team members and other providers regarding clinical practice and optimizing patient care	Develops patient-oriented educational materials to optimize communication with patients and families Develops an educational
With prompting, communicates plans for care, and their rationale, to other health care providers	Effectively presents relevant information at educational conferences	presentations at educational conferences Coordinates conferences and case discussions	Disseminates educational research through presentations and/or publications	curriculum for members of the health care team to optimize understanding of clinical issues and quality of care
				Serves as a role model for teaching and mentoring

Level 1	Level 2	Level 3	Level 4	Level 5
Complies with	Serves as a role model to	Serves as a role model and	Participates in divisional,	Participates in regional
institutional policies and	other learners on the	responsible representative	departmental, and	or national committees
regulations, including	importance of	of the division/program/	institutional committees	chairs institutional,
those pertaining to duty	professionalism in clinical	department		regional, or national
hours	practice		Serves as a resource to	committees
		Demonstrates an	medical students and	
Acts as a reliable and		appreciation of the	residents in addressing	
trustworthy team		importance of effective	professional practice and	
member (e.g., honest in		communication at all levels	its impact on well-being	
all communications,				
volunteers to assist		Understands the	Supports colleagues after	
colleagues, when		importance of and practices	adverse clinical	
appropriate, to cover		respectful and culturally-	outcomes	
illnesses/absences)		sensitive interactions with		
		colleagues		
Completes requested				
evaluations (e.g., faculty				
member, program, peers,				
ACGME Resident Survey)				
in a timely manner				
Consistently attended and				
Consistently attends and				
participates in divisional				
and departmental				
activities				

Level 1	Level 2	Level 3	Level 4	Level 5
Seeks constructive feedback from faculty members and colleagues	Provides constructive feedback in a tactful and supportive way to residents and medical students Accepts feedback from faculty members, and incorporates suggestions into practice	Consistently seeks feedback from patients, family members, and other members of the care team (i.e., multisource feedback) Correlates feedback with self-reflection, and incorporates it into lifelong learning to enhance patient care	Provides constructive feedback in a tactful and supportive way to physician and non- physician members of the care team to enhance patient care	Effectively seeks and provides constructive feedback in challenging situations (e.g., when there is resistance, there are adverse outcomes, or an experienced practitioner is involved)

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates basic	Demonstrates the ability	Reports concerns about	Teaches residents and	Serves as a resource for
professional responsibilities,	to balance personal,	the health or well-being	medical students the	the development of
such as reporting for work	institutional, and	of colleagues to a more	need to balance patient,	organizational policies
rested and prepared with	societal goals with	experienced individual	personal, institutional,	and procedures regarding
appropriate professional	professional		and societal needs when	professional
attire and grooming	responsibilities	Reinforces to residents the importance of	providing health care	responsibilities
Demonstrates knowledge of	Identifies departmental	compliance with systems	Serves as a resource to	Assists with or leads
basic requirements related	and institutional	to prevent physician	medical students and	intervention for suspected
to fatigue management,	resources available to	impairment	residents in addressing	impaired colleagues
sleep deprivation, and	address issues related to		professional practice and	
principles of physician well-	personal well-being in	Recognizes the impact of	its impact on well-being	Serves as resource for
being	self and others	adverse patient outcomes		colleagues returning from
		on one's personal well-		treatment for impairment
Recognizes the need to		being, and seeks		
balance patient, personal,		assistance in addressing it		Serves on institutional
institutional, and societal				physician wellness
needs when providing				committee
health care				

evel 1	Level 2	Level 3	Level 4	Level 5
Effectively communicates	Effectively uses	With minimal supervision,	With conditional	Consistently ensures that
outine information to both	appropriate resources	manages patient and	independence, manages	effective communication
nother and her support	(e.g., translator, patient	family conflicts in complex	patient and family	and resolution of
ndividuals in a respectful	representative) to	situations (e.g.,	conflicts in complex	concerns occurs with
and culturally-sensitive	optimize	maternal/fetal conflict,	situations	patients and/or families
nanner	communication	cultural factors, end-of-		
		life issues, custodial	With indirect supervision,	Independently manages
Obtains informed	Identifies situations	issues), including in	discloses medical errors	patient and family
consent/assent for routine	where patient and	communication with	or complications to	conflicts in all situations
procedures using language	family conflicts exist,	persons of different	patients and/or families	
appropriate to the patient's	and appropriately seeks	socioeconomic and		Independently, or with
and family's level of	assistance with	cultural backgrounds		other members of the
understanding	resolution			health care team,
C		Understands the		discloses medical errors
Recognizes situations where	Manages simple patient	importance of disclosing		or medical complications
communication of	and family conflicts	medical errors or		to patients and/or
nformation requires the		complications to patients		families
assistance of another		and/or families		
ndividual and asks for help				Models cross-cultural
		Effectively participates in		communication and
Recognizes that institutional		multidisciplinary		establishes therapeutic
esources are available to		communication		relationships with person
assist with disclosure of				of diverse socioeconomic
nedical errors		Consults appropriate		and cultural backgrounds
		institutional resources		
		(e.g., Risk Management,		
		Bioethics Committee)		
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