



**University of Colorado School of
Medicine**

Department of Anesthesiology

**RESIDENCY PROGRAM HANDBOOK
AND POLICY MANUAL
2020-2021**

University of Colorado School of Medicine
Anesthesiology Residency Program

Program Personnel and Contact Information

Program Director Name, Title

*Anthony Oliva, MD/PhD
 Residency Program Director
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Program Coordinator Name

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Faculty Listing and Clinical/Research Interests

<u>Faculty</u>	<u>Clinical / Research Interests</u>
Abrams, Ben Assistant Professor, UCH	Cardiac Anesthesiology Education
Abts, David Assistant Professor, DHMC Residency Recruitment	Trauma Anesthesiology Education
Ahlgren, Bryan Associate Professor, UCH Director of Cardiothoracic Rotation	Cardiac Anesthesiology Education Fellowship Program Director
Alber, Sarah Assistant Professor, UCH	Critical Care Medicine
Albertz, Megan Assistant Professor, CHCO	Edu
Arboleda, Nicole Assistant Professor, DHMC	Pediatric Anesthesiology Education
Armstrong, John Associate Professor, UCH	Regional Anesthesiology Ambulatory Anesthesiology
Azam, Fareed Associate Professor, UCH	Critical Care Medicine Solid Organ Transplant Anesthesiology Education
Bartels, Karsten Associate Professor, UCH	Cardiac Anesthesiology Critical Care Medicine Research
Basak, Jacob Assistant Professor, UCH	Critical Care Medicine
Beck, Daniel Associate Professor, VAMC Site Director for VAMC rotation	Cardiac Anesthesiology Education
Benish, Bethany Assistant Professor, DHMC Associate Residency Program Director Site Director for DHMC rotation	Trauma Anesthesiology Education
Bielsky, Alan Associate Professor, CHC	Pediatric Anesthesiology Regional Anesthesiology
Boucharel, Adria Associate Professor, CHC	Pediatric Anesthesiology Education
Bourland, Steven Instructor, DHMC	Education
Brainard, Alison Associate Professor, UCH Director of Wellness	Education Resilience and Burnout

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Director of Quality Improvement	
Brainard, Jason Associate Professor, UCH Director of STICU rotation	Critical Care Medicine Education Fellowship Program Director
Brockel, Megan Associate Professor, CHC	Pediatric Anesthesiology
Brooks-Peterson, Melissa Assistant Professor, CHC	Pediatric Anesthesiology
Bucklin, Brenda Professor, UCH Department Vice-Chair for Education	OB Anesthesiology Education
Carter, Charles Assistant Professor, CHC	Education
Chandler, Mark Associate Professor, DHMC	Preoperative Assessment Trauma Anesthesiology
Chatterjee, Debnath Associate Professor, CHC	Pediatric Anesthesiology Fellowship Program Director
Choi, Ray Assistant Professor, CHC	Education
Chowdhury, Samina Assistant Clinic Professor, CHC	Education
Ciarallo, Christopher Associate Professor, DHMC/CHC	Pediatric Anesthesiology Regional Anesthesia
Clark, Randall Professor, CHC	Pediatric Anesthesiology Cardiac Anesthesiology
Clavijo, Claudia Associate Professor, UCH	Neuroanesthesiology Education
Clendenen, Nathan Assistant Professor, UCH	Anesthesiology
Clopton, Rachel Assistant Professor, CHC	Pediatric Anesthesiology
Cohen, Mindy Assistant Professor, CHC	Pediatric Anesthesiology
Cohick, Paige Instructor, VAMC	Education
Coughlin, Patty Assistant Professor, CHC	Pediatric Anesthesiology
Crouch, Cara Assistant Professor, UCH	Anesthesiology
Daly, Jaime Assistant Professor, UCH	Anesthesiology
Dean, Karen Associate Professor, CHC	Pediatric Anesthesiology
Donnelly, Melanie Associate Professor, UCH Director of Quality Improvement	QI Education Regional Anesthesiology Ambulatory Anesthesiology
Douin, David Assistant Professor, UCH	Critical Care
Dressler, Morris Associate Professor, CHC	Pediatric Anesthesiology
Duggar, Brian Sr. Instructor, CHC	Education
Eckle Tobias Professor, UCH	Research
Eisdorfer, Seth Assistant Professor, CHC	Pediatric Anesthesiology
Evers, Jacob Assistant Professor, UCH	Anesthesiology
Faulk, Debra Associate Professor, CHC	Pediatric Anesthesiology Education

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Fernandez Ana Associate Professor, UCH	Solid Organ Transplant Anesthesiology Research
Fernandez, Patrick Associate Professor, CHC	Pediatric Anesthesiology Education
Ferrell, Janice Associate Professor, UCH	Education
Flores, Roland Assistant Professor, UCH	Regional Anesthesiology Education
Fuhr, Peter Associate Professor, CHC	Pediatric Anesthesiology
Gilliland, Sam Assistant Professor, UCH	Critical Care Medicine QI Education
Gordan, Diane Assistant Professor, CHC	Education
Grae, Lyndsey Assistant Professor, UCH	Cardiac Anesthesiology
Guffey, Patrick Associate Professor, CHC	Pediatric Anesthesiology Informatics
Gumidyala, Ramu Assistant Professor, UCH Director of Ambulatory Anesthesiology rotation	Ambulatory Anesthesiology Education
Hawkins, Joy Professor, UCH	OB Anesthesiology Education
Hendrickse, Adrian Associate Professor, UCH Director of Resident Simulation	Regional Anesthesiology Solid Organ Transplant Anesthesiology Education Simulation
Henthorn, Tom Professor, UCH Director of Resident Journal Club	Education Research
Hlaing, Maung Assistant Professor, UCH	Cardiac Anesthesiology Critical Care Medicine Ultrasound Education
Hoagland, Monica Assistant Professor, CHC Site Director for CHC rotation Residency Recruitment	Pediatric Anesthesiology Education
Ing, Richard Professor, CHC	Pediatric Anesthesiology Cardiac Anesthesiology
Jameson, Leslie Associate Professor, UCH	Neuroanesthesiology Fellowship Program Director
Janik, Dan Professor, UCH	Neuroanesthesiology
Janosy, Norah Associate Professor, CHC Director of Wellness	Pediatric Anesthesiology Resilience and Burnout
Juels, Alma Assistant Professor, DHMC	Trauma Anesthesiology Education
Kacmar, Rachel Associate Professor, UCH Co-Chair, Clinical Competency Committee Director of OB Anesthesiology rotation	OB Anesthesiology Education
Keech, Brian Associate Professor, DHMC	Trauma Anesthesiology Education
Kent, Sheryl Associate Professor, CHC	Education
Kluger, Samantha Assistant Professor, CHC	Education
Krause, Martin Assistant Professor, UCH	Critical Care Medicine Neuroanesthesiology
Kukreja, Naveen	Critical Care Medicine

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Assistant Professor, UCH	Solid Organ Transplant Anesthesiology
Kumar, Sunil Associate Professor, DHMC	Trauma Anesthesiology Education
Lace, Chris Associate Professor, UCH	Ambulatory Anesthesiology Education
Laterza, Ryan Assistant Professor, DHMC	Trauma Anesthesiology Education
Lemley, MG Associate Professor, UCH	Education
Lippert, Benjamin Instructor, DHMC	Education
Ly, Quen Assistant Professor, CHC	Pediatric Anesthesiology
Lyman, Matt Assistant Professor, UCH	Regional Anesthesiology Education
Majcher, Thomas Professor, CHC Pediatric Anesthesiology Section Chief	Pediatric Anesthesiology
Malhotra, Nisha Instructor, VAMC	Education
Mandler, Tessa Associate Professor, CHC	Pediatric Anesthesiology
Markowitz, Scott Associate Professor, CHC	Pediatric Anesthesiology
Marshall, Kyle Assistant Professor, UCH Associate Residency Program Director	Regional Anesthesiology Education
Masaracchia, Melissa Assistant Professor, CHC	Education
Mayes, Lena Associate Professor, CHC	Pediatric Anesthesiology Education
Merkow, Justin Assistant Professor, UCH	Pain Medicine
Miller, Howard Associate Professor, DHMC	Trauma Anesthesiology Education
Mohanram, Arvind Associate Professor, CHC	Pediatric Anesthesiology Education
Morabito, Joseph Assistant Professor, UCH	Cardiac Anesthesiology
Morrissey, Tyler Sr. Instructor, CHC	Education
Murray, Aaron Assistant Professor, DHMC	Trauma Anesthesiology Education
Nelson, Eric Associate Professor, UCH	Trauma Anesthesiology Education
Nguyen, Thanh Assistant Professor, CHC	Education
Nichols, Christopher Associate Professor, CHC	Pediatric Anesthesiology Simulation Education
Notides, Thomas Associate Professor, CHC	Pediatric Anesthesiology Education
Papazian, Jason Assistant Professor, UCH Director CA1 Lecture Series Director PBLD Lecture Series Residency Recruitment	OB Anesthesiology Education
Peterson, Melissa Associate Professor	Education
Pian, Phillip Assistant Professor, VAMC	Education

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Prin, Meghan Assistant Professor, UCH	Critical Care Medicine
Riggert, Ami Assistant Professor, DHMC	Trauma Anesthesiology Education
Riley, Cara Assistant Professor, CHC	Education
Roberts, Matthew Associate Professor, DHMC	Trauma Anesthesiology Education
Romano, Olivia Associate Professor, UCH Director of Regional Anesthesiology rotation	Regional Anesthesiology Online education Fellowship Program Director
Rzasa Lynn, Racheal Associate Professor, UCH Director of Chronic Pain rotation	Interventional Pain Medicine Education
Schiffer, Dominique Assistant Professor, UCH	Pain Medicine
Schwartz, Larry Associate Professor, CHC	Pediatric Anesthesiology Education
Scott, Ben Associate Professor, UCH	Critical Care Medicine Neuroanesthesiology
Selzer, Angela Associate Professor, UCH Director, PPS clinic	Pre-procedural services Education
Seres, Tamas Associate Professor, UCH Director of TEE curriculum	Cardiac Anesthesiology TEE education
Sharma, Tushar Assistant Professor, UCH	Interventional Pain
Shindell, Marina Associate Professor, UCH	Education
Simmons, Colby Assistant Professor, UCH Director of Global Health Anesthesiology	Neuroanesthesiology Global Health QI
Slover, Robin Associate Professor, CHC	Education
Somerset, William Assistant Professor, DHMC	Trauma Anesthesiology Education
Soong, Wayne Assistant Professor, VAMC	Education
Stein, Lee Assistant Professor, DHMC	Trauma Anesthesiology Education
Stenquist, Scott Associate Professor, CHC	Pediatric Anesthesiology Education
Steward, Laurie Assistant Professor, CHC	Pediatric Anesthesiology Education
Stewart, Lanette (Jane) Instructor, DHMC	Education
Strong, Joan Assistant Professor, CHC	Education
Strupp, Kim Associate Professor, CHC	Pediatric Anesthesiology Education
Sullivan, Breandan Associate Professor, DHMC	Cardiac Anesthesiology Critical Care Medicine
Tamm-Daniels, Inge Assistant Professor, UCH Director of PACU rotation	Regional Anesthesiology Simulation Education
Tan, Gee Mei Associate Professor, CHC	Pediatric Anesthesiology Simulation
Thomas, James Assistant Professor, CHC	Pediatric Anesthesiology Education
Todorovic, Vesna Professor, UCH	Research

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Department Chair	
Tran, Tim Assistant Professor, UCH Director of Point-of-care Ultrasound curriculum	Critical Care Medicine Solid Organ Transplant Anesthesiology Ultrasound Education
Twite, Mark Professor, CHC	Pediatric Anesthesiology Cardiac Anesthesiology
Varhabhatla, Narayana Assistance Professor, UCH	Interventional Pain
Verduzco, Luis Assistant Professor, DHMC	Education
Villasenor, Mario Assistant Professor, UCH Associate Residency Program Director Director of Residency Recruitment	Education
Vitter, Jillian Assistant Professor, UCH Director of CA1 Core Curriculum	Regional anesthesiology Simulation Education
Vogel, Scott Assistant Professor, UCH Director, CA1 lecture series	Neuroanesthesiology Education
Vogeli, Jo Assistant Professor, UCH	Clinical psychologist
Walha, Sukhi Assistant Professor, UCH Director of NORA rotation	Ambulatory Anesthesiology Education
Wallen, Brett Associate Professor, CHC	Education
Wallen, Jennifer Associate Professor, CHC	Education
Webb, Leah Assistant Professor, CHC	Education
Weigers, Kim Associate Professor, CHC	Pediatric Anesthesiology
Weitzel, Nate Associate Professor, UCH	Cardiac Anesthesiology
Whitney, Gina Associate Professor, CHC	Pediatric Anesthesiology QI
Wiktor, Mariisa Assistant Professor, CHC	Pediatric Anesthesiology
Wilder, Matthew Assistant Professor, CHC	Education
Wilkey, Barbara Associate Professor, UCH	Cardiac Anesthesiology Solid Organ Transplant Anesthesiology Fellowship Program Director
Wolf, Scott Associate Professor, UCH	Critical Care Medicine Solid Organ Transplant Anesthesiology
Wood, Cristina Associate Professor, UCH	OB Anesthesiology Education
Yastor, Myron Professor, CHC	Education
Zeichner, Steve Assistant Professor, UCH Director of Practice Management Curriculum	Practice Management Education
Zeig, Jennifer Associate Professor, CHC	Pediatric Anesthesiology

Program Aims

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- Educate residents to be excellent practitioners of medically directed anesthesiology in an anesthesia care team model.
- Educate residents to be excellent practitioners of anesthesiology in physician delivered care.
- Prepare trainees to obtain competitive fellowship positions.
- Produce leaders and educators in medicine, both in the community and in academics.
- Produce compassionate and caring anesthesiologists.

Program Curriculum

SECTION OUTLINE

- Overall Educational Program Goals
- Goals and Objectives for Each Educational Year
- Didactics and Conferences
- Research and Scholarly Activities
- Electives

OVERALL EDUCATIONAL PROGRAM GOALS

1. All residents, upon graduation, will provide high quality perioperative patient care in a compassionate and professional manner.
2. All residents, upon graduation, will successfully pass written and oral portions of the examinations of the American Board of Anesthesiology on the first attempt.
3. The curriculum consists of experience in basic anesthesia training, subspecialty training, and advanced anesthesia training. It is a graded curriculum of increasing difficulty and learning that is progressively more challenging of the resident's intellect and technical skills.

GOALS AND OBJECTIVES BY YEAR

CLINICAL ANESTHESIA 1 (PGY 2)

1. The Clinical Anesthesia (CA) I year is devoted to basic anesthesia training. It will emphasize basic and fundamental aspects of anesthesia such as airway management, vascular access, pharmacology of anesthetic agents, perioperative management of co-existing medical problems, and acute pain management. This is accomplished during a broad range of general operating room cases and recovery room care.
2. All CA-I residents are required to have ACLS certification. Refresher courses are offered several times throughout the year.

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3. All CA-I residents will take the three Anesthesia Knowledge Tests (AKT 0, 1, and 6) upon entry into the program, after one month, and after six months of training. Additionally, residents will take the annual In-Training Exam (ITE) and a score greater than the 25th percentile is expected. Residents performing at a level lower than the 10th percentile will be required to meet with the Director of Resident Remediation to formulate a study plan.

END OF FIRST 6 MONTHS, CA1 YEAR

Knowledge

- Understand basic anesthesia machine and routine monitors (pulse oximetry, capnography, circuits, oscillometric blood pressure cuffs, electrocardiogram)
- Understand basics of neuromuscular blockade (relaxants, train-of-four monitoring, reversal)
- Understand use of routine vasoactive drugs
- Understand the indication for commonly used anesthetic drugs
- Understand major hemodynamic and respiratory effects of routine anesthetic agents and their indications
- Understand comprehensive examination and classification of the airway
- Understand key preoperative findings in history, physical, and laboratory work
- Understand application of "Universal Precautions" and aseptic technique
- Advanced Cardiac Life Support certification

Case Management

- Manage ASA physical status 1 patients with minimal assistance for uncomplicated surgery, including induction, maintenance, emergence, and transport to the post anesthesia care unit
- Accurately estimate fluid (blood/colloid/crystalloid) requirements in routine cases
- Identify basic intraoperative problems (hyper-/hypotension, hypoxia, hypercapnia, arrhythmias, anuria, acidosis, laryngospasm) and formulate differential diagnosis and treatment plans

Technical Skills

- Set up a case in reasonable time (machine check, drugs, airway equipment)
- Ventilate lungs via mask, and intubate trachea of patients with easy to moderately difficult airways
- Place peripheral intravenous and arterial catheters with minimal assistance
- Keep accurate intra-, pre-, and postoperative records, either written or EMR
- Operate basic technical monitors and pressure transducers and trouble-shoot simple technical malfunctions

Oral Skills

- Communicate effectively with patients
- Deliver concise, organized case presentation to staff that includes important pre-anesthetic concerns

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- Formulate and describe in detail a plan for anesthetic management of ASA physical status 1-3 patients including anticipated problems and their solutions

END OF CA1 YEAR

Knowledge

- Understand physiology of significant cardiovascular events (compression of vena cava by surgeons, hypovolemia, hypervolemia, pulmonary embolism, ischemia, myocardial depression)
- Understand aspects of neuroanesthesia (management of increased intracranial pressure for craniotomy), vascular anesthesia (changes with aortic cross clamp), and orthopedic anesthesia (fat emboli)
- Understand choice of regional versus general anesthesia and need for selective invasive monitoring
- Understand how to obtain and apply information from a pulmonary artery catheter

Case Management

- Manage, under supervision, patients with difficult airways who are undergoing elective surgery
- Perform emergency airway management with reasonable skill (rapid sequence vs. awake intubation) in the operating room and the intensive care unit
- Manage ASA physical status 3 patients for uncomplicated surgery with assistance
- Initiate management of trauma cases and other emergencies in proper sequence (airway, intravenous access, monitoring)
- Recognize key anatomic landmarks, indications/contraindications, and potential complications of regional blocks (spinal, epidural, axillary, intravenous regional)
- Manage patients in the post anesthesia care unit with assistance (assure adequacy of airway or adjust ventilation; manage pain, hemodynamics and fluids, and determine readiness for discharge)
- Develop and implement a rational plan for tracheal intubation of patients in the intensive care unit

Technical Skills

- Insert central and arterial catheters with minimal assistance
- Insert a pulmonary artery catheter with direction
- Perform aforementioned regional blocks on suitable patients with assistance
- Perform spinal and lumbar epidural anesthesia without assistance in most patients
- Perform asleep or awake fiberoptic intubation with assistance

Oral Skills

- Cogently discuss management plan with anesthesiology staff or surgeon for ASA physical status 3 patients
- Defend choice of monitoring

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- Defend choice of anesthetic technique and drugs used with discussion of options
- Recognize when to proceed, investigate further, or cancel a case
- Participate actively in teaching medical students

CLINICAL ANESTHESIA 2 (PGY 3)

1. The Clinical Anesthesia (CA) II year emphasizes subspecialty anesthesia training accentuating the theoretical background, subject material and practice of subspecialties of anesthesiology. These subspecialty areas include obstetric anesthesia, pediatric anesthesia, cardiothoracic anesthesia, neuroanesthesia, pain management, transplant anesthesia, and critical care in the form of concentrated subspecialty rotations.
2. During general operating room rotations, additional training will occur in outpatient anesthesia, advanced airway management, regional anesthetic techniques, and techniques of sedation and anesthesia for diagnostic and therapeutic procedures outside the operating room.

END OF CA2 YEAR

Knowledge

- Understand physiology and anesthetic concerns associated with pediatric anesthesia
- Understand obstetric syndromes and their anesthetic implications
- Understand routine open-heart procedures, including pre-bypass, and separation from cardiopulmonary bypass
- Understand pharmacology of a variety of vasoactive and anesthetic drugs in depth
- Know how to perform emergency airway maneuvers, including cricothyrotomy
- Understand basics of obstetric anesthesia (physiologic changes of pregnancy, techniques for analgesia and cesarean section)

Case Management

- Manage medical disease in complex surgical patients (pulmonary, cardiovascular, hepatorenal, endocrine)
- Manage routine pediatric, vascular, thoracic, and neurosurgical cases with assistance
- Manage neuraxial labor analgesia and cesarean section by general or regional anesthesia with assistance.

Technical Skills

- Perform spinal and lumbar epidural anesthesia in patients with extremes of body habitus
- Insert peripheral intravenous catheters in pediatric patients older than 2 years of age

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- Perform a variety of regional blocks with frequent success
- Insert a pulmonary artery catheter with minimal assistance
- Assemble and calibrate transducers without assistance
- Manage acute postoperative pain (patient-controlled analgesia, continuous infusions of epidural opioids and/or local anesthetics)

Oral Skills

- Cogently discuss management plan with attending and surgeon for ASA physical status 4 patients
- Review literature and participate in discussion for all lecture settings
- Perform reasonably on oral board-style examination
- Lecture to faculty and residents at teaching conferences
- Actively teach medical students

CLINICAL ANESTHESIA 3 (PGY 4)

1. The Clinical Anesthesia 3 year may include the more difficult or complex anesthetic procedures and care of the most seriously ill patients so that you exhibit sound clinical judgment in a wide variety of clinical situations and can function as a leader of perioperative care teams.

END OF CA3 YEAR

Knowledge

- Understand principles of all major subspecialties (ambulatory, cardiac, critical care, endocrine, neurosurgical, obstetrics, pediatrics, acute and chronic pain, thoracic, trauma, vascular) in depth
- Know and address important articles in recent literature

Case Management

- Manage independently, with staff availability:
- ASA physical status 4 patients with multisystem diseases for complex elective and emergency surgery
- Acute and chronic pain
- Recovery room care

Technical Skills

- Perform all aforementioned anesthetic and invasive monitoring procedures independently

Oral Skills

- Attain the qualities and attributes fundamental to performance as a consultant anesthesiologist (according to the American Board of Anesthesiology)
- Ability to organize and express thoughts clearly
- Sound judgment in decision-making and application
- Ability to apply basic science principles to clinical problems
- Adaptability to rapidly changing clinical conditions

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- Supervise and mentor medical students
- Participate actively in teaching fellow residents

DIDACTICS AND CONFERENCES

Weekly Schedule

DAY/TIME	TOPIC
MONDAY 6:45-7:45 am	Grand Rounds
Wednesday 3:00-4:00 pm 4:00-4:30 pm 4:30-5:00 pm	Oral Boards/written exam or Senior Lecture, Journal Club, PBLD CA1 Lecture ITE Lecture or M&M
FRIDAY 6:30-7:00 am	Cardiac Lecture Series (Every Friday – attendance is mandatory for Residents rotating on the cardiothoracic service.)

Attendance at Grand Rounds, ITE Resident Lectures, Resident Chair/Journal Club and Clinical Case Conferences is **mandatory** if you are rotating at University of Colorado Hospital. If you are rotating at our satellite locations (DHMC, VAMC), they are teleconferenced in the assigned conference room location(s). You are expected to sign in.

A. CORE LECTURE SERIES

During July and August a series of Core Lectures are offered which are especially oriented to the needs of new anesthesiology residents. Such topics as preoperative evaluation, anesthesia equipment, monitoring techniques, blood transfusion, and basic pharmacology of anesthetic drugs are included. The lecture schedule is included in orientation materials.

B. ANESTHESIOLOGY LECTURE SCHEDULE

The skeleton schedule for the overall didactic program of the anesthesia department is shown above. Please refer to this schedule for all regularly scheduled didactic conferences. It is expected that all residents participate in these didactic offerings.

C. GRAND ROUNDS

Grand Rounds is the featured lecture of the week, and it is organized around a system of “blocks,” or rotating themes. Each block of lectures lasts several weeks,

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and the blocks are rotated on a 2-3 year basis to ensure coverage of most of the topics in the Content Outline of the Joint Council on In-training Examinations. The speakers at Grand Rounds include outside visiting professors, departmental faculty, UC faculty from other departments, and senior residents giving their senior lecture.

D. CLINICAL CASE CONFERENCES

Clinical Case Conferences are discussions of patient cases involving interesting management problems in anesthesiology. Often the cases presented involve morbidity or mortality, so the conference is sometimes called “M&M.” Residents present these cases predominantly. These cases can be about unexpected (or expected) difficulties encountered or just about interesting patient management problems. The goal is a spirited discussion between the moderator, presenters, and attendees that educates everyone. Since these conferences also review events surrounding complications and deaths that required UCH peer review, trends and patterns discovered through the peer review process will also be discussed. Discussions are aimed at developing strategies that will lead to successful problem management. These conferences emphasize complete discussion of alternate methods of care and the suitability of those methods for specific cases.

E. ITE RESIDENT LECTURE/PBLDs

Conferences designed to complement Grand Rounds by covering additional aspects of the Content Outline are presented on Wednesday afternoon (3- 5 pm). These sessions are facilitated by multiple faculty. The format ranges from lectures to workshops, and is typically interactive in nature. Sometimes specific board preparation sessions are conducted in this time slot as well, consisting of multiple choice question review or practice oral examinations.

F. JOURNAL CLUB

Journal Club is held monthly and is organized and facilitated by Drs. Henthorn and Clendenen. Residents dissect selected articles and facilitated discussions occur on study design, statistical analysis, and interpretation of results.

G. SENIOR LECTURES

Senior residents are required to prepare a formal lecture. These lectures are given during Grand Rounds. Residents participate in choosing their topics and choose a faculty advisor to assist them as needed in preparing this presentation.

H. RESIDENT/CHAIR FORUM

The Resident/Chair Forum is held monthly, provided time for residents to discuss program issues with Drs. Todorovic and Oliva. If there is a particular subject you wish to have discussed, please contact Dr. Todorovic, Dr. Oliva or one of the Chief Residents. Topics can also be suggested by email to any of these individuals.

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J. RESEARCH CONFERENCE

A departmental research conference is conducted weekly. Various faculty members from within and outside the department present current research topics at this conference. Ongoing projects are discussed in a brainstorming and/or didactic format. Residents are encouraged to attend when interested.

K. CARDIAC LECTURE

A cardiothoracic anesthesia conference is held from 6:30 to 7:00 am on Friday mornings. This conference is led by a faculty member from the cardiothoracic anesthesia team and includes a variety of cardiac anesthesia, thoracic anesthesia, and transesophageal echocardiography topics. Residents on the cardiothoracic anesthesia rotation are expected to attend. Others are welcome as well. The cardiac anesthesia team also conducts a monthly journal club.

L. CONFERENCES AT VA, DHMC AND CHC

These hospitals also have their own didactic conferences. At DH, there is a conference on Wednesday through Friday at 6:30 am that includes a resident presentation (Wednesday) and assigned attending anesthesiologist conferences on Thursday and Friday. CHC has its own comprehensive conference calendar designed to cover the important topics in pediatric anesthesia on a rotating basis. Conferences are conducted on Tuesdays through Fridays from 6:45 to 7:15 am, and there is a morbidity and mortality conference on Mondays from 7:15 to 8:00 am.

M. RESIDENT ATTENDANCE AT CONFERENCES

Resident attendance at Grand Rounds, Clinical Case, ITE Resident Lecture, Resident Chair, and Journal Club conferences is expected unless on leave (e.g. vacation, parental, medical), geographic issues (e.g., rotation at Denver Health), clinical duties in the operating rooms, or post-call status precludes it. Consequently, resident attendance at conferences is monitored and those who are not present at conferences without an apparent rationale will often receive a notice from the program director, and unsatisfactory attendance will be reflected in evaluations of resident performance. The Accreditation Council for Graduate Medical Education requires that attendance records be kept for residents. Electronic sign-in is present for each conference; it is the responsibility of each resident to sign in.

Please note: Residents are allowed an optional 5 days per academic year for educational travel with approval from the Program Director and Vice-chair of Education. As a department, we feel it is inconsistent to allow a resident to travel away from the department to attend an educational meeting if he/she does not avail him/herself of the departmental conferences. The attendance record of each resident at departmental conferences is taken into consideration when deciding if an application for educational travel should be honored. Importantly, during the coronavirus pandemic, restrictions on travel by the CUSOM will be followed.

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RESEARCH AND SCHOLARLY ACTIVITIES

1. All residents are required to pursue scholarly efforts of some kind. At a minimum, active participation in our QI curriculum is expected.
2. Residents interested in research must notify the program director to facilitate mentorship and to determine the need for protected research time. Before elective research time is granted, submission of the project proposal is required.
3. Residents are strongly encouraged to submit at least one abstract for a poster presentation at a national conference during their time in our program.

ELECTIVES

1. All senior residents are afforded the opportunity to individualize their residency training based on their career goals and personal interests.
2. Up to six months during CA3 year may be used for elective rotations.
3. Electives include additional training in core anesthesiology areas as well as areas outside of anesthesiology. Electives outside of our core curriculum include UCH ambulatory anesthesiology, DH anesthesia-in-charge, research time, department-sponsored global health, ASA-sponsored rotations, palliative care, and bioinformatics, among others.

Program Manual Statement

The training program complies with Accreditation Council for Graduate Medical Education (ACGME) and CUSOM Graduate Medical Education (GME) policies, procedures and processes that are available on the [GME website](#). In addition, direct access is available by clicking the hyperlinks below. The program reviews all GME and program policies, procedures and processes at least annually with residents/fellows.

GME Policies

Additional Pay for Additional Work Policy

- [Additional Pay for Additional Work Form](#) This document is found in MedHub → GME Resources and Documents → Finance Forms.

Concern/Complaint Policy

Remediation and Disciplinary Action Policy

Clinical & Educational Work Hours Policy

Eligibility and Selection Policy

Evaluation and Promotion Policy

Grievance Policy

International Residency Rotations Policy

Leave Policy

Medical Records Policy

Moonlighting Policy

- [Moonlighting Approval Form](#) This document is found in MedHub → GME Resources and Documents → Finance Forms.

Non-Compete Policy

Physician Well-Being & Impairment Policy

Prescriptions: Residents Writing for Staff, Family & Friends Policy

Professionalism Policy

Quality Improvement and Patient Safety Policy

Supervision Policy

Transitions of Care (Structured Patient Hand-off) Policy

USMLE, COMLEX, & LLMC Examinations Policy

Work and Learning Environment Policy

Key University of Colorado Policies

Disability Accommodation Policy

HIPAA Compliance

Sexual Misconduct Policy

PROGRAM-SPECIFIC POLICIES

Additional Pay for Additional Work Policy

Additional Pay for Additional Work Policy

In addition to complying with the GME [Additional Pay for Additional Work Policy](#), ([Additional Pay for Additional Work Form](#) **This document is found in MedHub → GME Resources and Documents → Finance Forms.**) the Anesthesiology Residency program's policies and procedures are:

1. Additional pay can be earned by volunteering for available shifts in the UCH general OR, the UCH Cardiothoracic Service, the UCH Acute Pain Service, and the UCH critical care units. Only residents in good academic and clinical standing are eligible to cover shifts. Priority for shifts goes to CA3 residents and residents on rotations with limited call responsibilities.
2. Two set shifts per week are available for the UCH general OR: Friday from 11pm to Saturday 11pm (R2-24hr) and Sunday from 7am to 11pm (R2-16hr). Holiday R2 shifts are also additional pay shifts. The shift is home call and if the resident is needed, then the charge nurse will contact the assigned resident. The resident must be within 30 minutes of UCH. The 24-hour shift pays \$1,000 and the 16-hour shift pays \$500. The Chief residents solicit for requests each month and interested residents can submit their request for shifts through QGenda, our scheduling website. CA1 residents in their first six months of training are ineligible to cover these shifts.
3. The UCH CT3 shift is 24-hour home call and is geared for holidays only. This resident is the third CT call resident, meaning both the first and second call residents are involved in cases. The resident must be within one hour of UCH. Residents must complete at least one month on the CT service to be eligible. The shift pays \$250.
4. Occasionally, shifts need to be covered on the Acute Pain Service for night or weekend coverage. When available, the Chief residents solicit for requests. Residents must complete both the rounding and block portions of the APS rotations to be eligible. The pay is \$50/hour.
5. Occasionally, shifts need to be covered in either the STICU or CTICU. When available, the Chief residents solicit for requests. Residents must have experience on the unit to be eligible. The shift pays \$75/hour.

Concern/Complaint Policy

Concern/Complaint Policy

In addition to complying with the GME [Concern/Complaint Policy](#), the Anesthesiology Residency program's policies and procedures are:

Residents who wish to communicate complaints or resolve issues within the program or department may bring them up at our monthly Resident/Chair Forum or meet with their Faculty Advisor, the Residency Director or the Chairman at any time.

Eligibility and Selection Policy

Eligibility and Selection Policy

In addition to complying with GME [Eligibility and Selection Policy](#), the Anesthesiology Residency Program's policies and procedures are:

The Department of Anesthesiology has both advanced and categorical positions. Therefore, applicants may need to complete a PGY 1 year prior to entering the program. The PGY 1 year must be in direct patient care in accordance with RRC specifications (review the ACGME website for more information, www.acgme.org).

SELECTION CRITERIA

1. We look for ability, aptitude, academic credentials, communication skills, and personal qualities such as motivation and integrity, and the ability to function within parameters expected of a practitioner in the specialty.
2. We will review and select applicants in a manner consistent with provisions of equal opportunity employment and will not discriminate with regard to sex, race, age, religion, color, national origin, disability or any other applicable legally protected status.
3. We participate in the National Resident Matching Program (NRMP).
4. The application deadline, except for the MSPE letter, is September 20th. Interviews are scheduled from late October through January.

Evaluation and Promotion Policy

Evaluation and Promotion Policy

Criteria for Promotion & Graduation

In addition to complying with the GME [Evaluation and Promotion Policy](#), the Anesthesiology Residency Program policies and procedures are:

Twice a year, in January and July, a Record of Training Report on each resident is submitted to the American Board of Anesthesiology (ABA). The information used to complete these reports comes from the recommendations of the Clinical Competence Committee. The ABA uses these reports as the basis for granting credit toward its Clinical Anesthesia training requirements.

EVALUATION OF RESIDENTS AND FACULTY

Evaluation of residents and faculty are done monthly through the online evaluation program, MedHub. Residents can view their evaluations online at any time. Residents are encouraged to discuss their evaluations frequently with their advisors (at least semi-annually). In addition, residents are required to complete evaluations on faculty members they have worked with during the month. These evaluations are anonymous. Similarly, faculty members are required to complete monthly evaluations on each resident they work with during the month. They can view their evaluations online but cannot see which resident completed the evaluation.

MULTI-SOURCE EVALUATION

Perioperative non-physician personnel on some rotations evaluate residents. These evaluations are completed through MedHub or by paper submission.

ROTATION EVALUATION

At the end of each rotation an email is sent requesting the resident to complete a rotation evaluation form. This evaluation form is accessed through MedHub.

PROGRAM EVALUATION

Once a year in May, you are asked to complete a program evaluation/program survey. This evaluation/survey is completed through Survey Monkey, an online survey tool.

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Clinical Competency Committee

The Anesthesiology Residency Program **Clinical Competency Committee (CCC)**, is appointed by the program director and meets semi-annually, at the midpoint and end of the academic year. The CCC reviews all resident evaluations, determines each resident's progress on achievement of the specialty-specific Milestones, and advises the program director regarding each resident's progress.

CCC Membership includes:

Dr. Rachel Kacmar, CCC Co-Chair, Core Faculty, UCH OB
Dr. Inge Tamm-Daniels, CCC Co-Chair, UCH APS
Dr. Vesna Todorovic, Department Chair
Dr. Tony Oliva, Program Director, Core Faculty
Dr. Beth Benish, Associate Program Director, Core Faculty, DHMC
Dr. Kyle Marshall, Associate Program Director, Core Faculty, UCH APS
Dr. Mario Villaseñor, Associate Program Director, Core Faculty, UCH PPS
Dr. Bryan Ahlgren, Core Faculty, UCH CT
Dr. Dan Beck, Core Faculty, VA Site Director
Dr. Jason Brainard, Core Faculty, UCH STICU
Dr. Sam Gilliland, UCH CTICU
Dr. Melissa Massarachia, CHC Site Director
Dr. Leslie Jameson, UCH Neuro
Dr. Jason Papazian, UCH OB
Dr. Ramu Gumidyala, UCH PPS
Dr. Tim Tran, UCH CTICU/LT
Dr. Jillian Vitter, UCH APS/Sim

Any additional members must be faculty members from the same program or other programs, or other health professionals who have extensive contact and experience with the program's residents. Chief residents also serve on the CCC.

The CCC follows the [GME Evaluations & Promotion policy](#). Sources of assessment data reviewed by the CCC include, but are not limited to:

- Multi-source evaluations (peers, staff, self, patient, students, faculty)
- Procedural observations
- In-Training Exam and Anesthesia Knowledge Test Scores
- Mock Orals Board performance
- Case Logs
- Conference attendance and participation
- Research and scholarly activity
- Quality Improvement and Patient Safety projects
- Compliance with duty hour requirements

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The program director, or their designee, meets with the Resident semi-annually to review their performance, progress along the milestones, and case logs. For residents in need of a learning or practice improvement plan, one will be designed to their strengths and areas of needed growth. For residents failing to progress, the program director develops a plan according to the [Remediation and Disciplinary Action](#) policy. Minutes for the CCC are taken and kept on file.

Leave Policy

Leave Policy

In addition to complying with the GME [Leave Policy](#), the Anesthesiology Residency program's policies and procedures are:

The policy of the American Board of Anesthesiology regarding absence from training states:

The ABA has established certain training requirements for a candidate to enter its examination system. The following outlines permissible absences that will not result in delay in a candidate being eligible to enter the examination system:

- Without prior approval from the ABA, a candidate may be absent from training up to a total of 60 working days (12 weeks) during the CA 1-3 years of training. This includes vacation.
- Attendance at scientific meetings, not to exceed five working days per year, shall be considered part of the training program and not count toward the absence calculation.
- The ABA will consider requests for up to 40 additional days (8 weeks) away from training (over and above the 60 working days). Such additional leave of absence time must be approved by the ABA as follows:
 - Any request for such leave must be received by the ABA within four weeks of the resident's resumption of the residency program.
 - The request shall be in writing from the program director, countersigned by the department chair (if that person is different than the program director), and the resident.
 - The request must include: (1) the reason for the absence training request (as an example, serious medical illness, parental or family leave that are covered under the Family and Medical Leave Act would be reasons acceptable to the ABA) and (2) documentation about how all clinical experiences and educational objectives will be met.

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Absences in excess of those described above will require lengthening of the total training time to compensate for the additional absences from training. The additional training days required will be equal to the total number of working days missed beyond (1) the 60 working days (without need for ABA approval); and (2) the additional 40 working days (approved by the ABA).

Residents who have their residency extended may sit for the Summer ADVANCED examination if they complete all requirements by Sept. 30 of the same year. They may sit for the Winter ADVANCED examination if they complete all requirements by March 30 of the same year.

A lengthy interruption in training may have a deleterious effect upon the resident's knowledge or clinical competence. Therefore, when there is an absence for a period more than six months, the ABA Credentials Committee shall determine the number of months of training the resident must complete subsequent to resumption of the residency program to satisfy the training required for admission to the ABA examination system.

Moonlighting Policy

Moonlighting Policy

In addition to complying with the GME [Moonlighting Policy](#), and the ([Moonlighting Approval Form](#) –(found in MedHub → GME Resources and Documents → Finance Forms) the Anesthesiology Residency program's policies and procedures are:

Residents must meet the following requirements:

1. The individual wishing to moonlight must obtain annually, prior written approval to perform specific duties/procedures in a moonlighting environment from the Program Director. (Complete the Approval for Resident Moonlighting request form and return to the GME office).
2. The individual seeking permission to moonlight must possess a valid license to practice medicine in the State of Colorado. A "Physician Training License" does not meet this requirement. For additional information see Colorado Revised Statutes Article 36, also known as the Medical Practice Act.
3. The individual seeking permission to moonlight must secure professional liability (malpractice) insurance coverage apart from that provided to residents as part of the formal academic training program. Coverage provided to residents as referred to in the residency contract do not include activities occurring as part of a moonlighting experience.

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3. Residents moonlighting at either UCH or Children's Hospital Colorado (CHCO) must be appointed a GME Instructor/Fellow through the Faculty Affairs Office.
4. Time spent by residents in Internal and External Moonlighting must be counted toward the 80-hour Maximum Weekly Hour Limit as required by ACGME and GME.
5. PGY-1 residents are not permitted to moonlight.
6. Individuals possessing a J-1 visa are not eligible to moonlight.
7. The resident must be in good standing (not on Focused Review nor Probation nor having significant performance issues).
8. Residents with prior permission to moonlight will have that permission revoked by the Program Director if academic performance is determined to no longer be at a satisfactory level, e.g., probation or other major concerns arise.
9. Residents continuing to moonlight following revocation of permission can be dismissed from the program. This notice must be contained in documentation placing the resident on probation.
10. The obligation to notify an outside employer is the responsibility of the resident who established that employment relationship, not the responsibility of the University or training program.

Physician Well-Being & Impairment Policy

Physician Well-Being & Impairment Policy

In addition to complying with the [GME Physician Well-Being & Impairment Policy](#), the Anesthesiology Residency program's policies and procedures are:

Programs and policies are in place to encourage optimal resident and faculty member well-being. Our Wellness curriculum for residents is longitudinal and includes protected time for didactics, workshops, retreats, and other activities. Faculty and residents have access to a department employed Clinical Psychologist. We encourage residents to schedule appointments for medical, dental, and mental health purposes as needed. With advanced notice, coverage of clinical duties to attend appointments is ensured.

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The program educates faculty members and residents in the identification of the symptoms of burnout, depression, and substance abuse, in themselves and others, including methods to assist those who experience these conditions by at least one annual Grand Rounds presentation.

If another resident, fellow, or faculty member may be displaying signs of burnout, depression, substance abuse, suicidal ideation, or potential for violence, this must be reported to the Program Director, the Wellness physician champions Drs. Brainard and Janosy, or to our Departmental Chair.

Professionalism Policy

Professionalism Policy

The program complies with the [GME Professionalism Policy](#) and provides a professional, respectful, and civil environment that is free from mistreatment, abuse, or coercion of students, residents, faculty, and staff. Residents and faculty are educated regarding unprofessional behavior and are provided with a confidential process for reporting, investigating, and addressing such concerns.

The program director provides a culture of professionalism that supports patient safety and personal responsibility. Residents/Fellows and faculty members are educated on sleep deprivation and fatigue to ensure they understand the obligation to be appropriately rested and fit to provide the care required by patients. This is accomplished through an appropriate blend of supervised patient care responsibilities, clinical teaching, didactic educational events, and/or modules.

Monitoring Resident and Faculty Professionalism

The program director monitors resident and faculty compliance with professional standards through direct observation, from verbal and written communication with parties involved in alleged unprofessional conduct, and from notification from the Office of Professionalism.

Program Evaluation

Program Evaluation Committee

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The Anesthesiology Residency **Program Evaluation Committee (PEC)** is appointed by the Program Director and conducts & documents the Annual Program Evaluation (APE) as part of the program's continuous improvement process. The PEC follows the [GME Evaluations & Promotion policy](#).

PEC Membership:

Dr. Tony Oliva, Chair, Program Director, Core Faculty
Dr. Vesna Todorovic, Department Chair
Dr. Brenda Bucklin, Vice-Chair of Education, Core Faculty
Dr. Beth Benish, Associate Program Director, Core Faculty, DHMC
Dr. Kyle Marshall, Associate Program Director, Core Faculty, UCH APS
Dr. Mario Villasenor, Associate Program Director, Core Faculty, UCH
Dr. Bryan Ahlgren, Core Faculty, UCH CT
Dr. Angela Selzer, Core Faculty, Director of PPS
Dr. Olivia Romano, Core Faculty, UCH APS
Dr. Dan Beck, Core Faculty, VA Site Director
Dr. Alison Brainard, Director of Wellness, Core Faculty, UCH
Dr. Jason Brainard, Core Faculty, UCH STICU
Dr. Mark Chandler, Core Faculty, DHMC
Dr. Christopher Ciarallo, Core Faculty, DHMC
Dr. Nicole Arboleda, DHMC
Dr. Sam Gilliland, UCH CTICU, Co-Director of Resident QI
Dr. Martin Krause, UCH CTICU
Dr. Ramu Gumidyala, Core Faculty, UCH PPS
Dr. Joy Hawkins, Core Faculty, UCH OB
Dr. Melissa Massarachia, CHC Site Director
Dr. Rachel Kacmar, Core Faculty, UCH OB
Dr. Leslie Jameson, UCH Neuro
Dr. Jason Papazian, UCH OB
Dr. Tim Tran, UCH CTICU/LT
Dr. Jillian Vitter, UCH APS/Sim
Dr. Jane Stewart, Current Resident, PGY4
Dr. Diana Heringer, Current Resident, PGY4
Dr. Nick Alvey, Current Resident, PGY3
Dr. Adrian Klein, Current Resident, PGY3
Dr. Ted Timothy, Current Resident, PGY3
Dr. Cyndi Williams, Current Resident, PGY3
Dr. Kenji Tanabe, Current Resident, PGY3
Dr. Jake Entin, Current Resident, PGY3
Dr. Stephanie Nill, Current Resident, PGY2

PEC Responsibilities include, but are not limited to:

Acting as an advisor to the program director through

- Program oversight;
- Review of the program's self-determined goals and progress toward meeting them;

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- Guiding ongoing program improvement, including development of new goals, based upon outcomes; and
- Review of the current operating environment to identify strengths, challenges, opportunities, and threats as related to the program's mission and aims.

At a minimum, the PEC considers the following elements in its assessment of the program:

- Curriculum
- Outcomes from prior Annual Program Evaluations
- ACGME letters of notification, including citations, Areas for Improvement, and comments
- Quality and safety of patient care

Aggregate resident and faculty

- Well-being
- Recruitment and retention
- Workforce diversity
- Engagement in quality improvement and patient safety
- Scholarly activity
- ACGME Resident and Faculty Surveys
- Written evaluations of the program

Aggregate resident

- Achievement of the Milestones
- In-training examinations (where applicable)
- Board pass and certification rates
- Graduate performance

Aggregate faculty

- Evaluation
- Professional development

The PEC prepares an Action Plan documenting initiatives to improve the program, as well as how the initiatives are monitored & measured. The APE Template serves as the minutes for the PEC. The annual review, including the action plan is distributed to and discussed with the members of the teaching faculty and the residents, and is submitted to the DIO.

Quality Improvement/Patient Safety Policy

Quality Improvement and Patient Safety Policy

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In addition to complying with the GME [Quality Improvement and Patient Safety Policy](#), the Anesthesiology Residency program's policies and procedures are:

The program provides formal educational activities that promote *patient safety* related goals, tools, and techniques.

Residents must participate as team members in real and/or simulated interprofessional clinical patient safety activities, such as root cause analyses or other activities that include analysis, as well as formulation and implementation of actions. Such experiences include group Quality Improvement projects and Morbidity and Mortality conferences.

Residents have the opportunity to participate in annual *quality improvement* activities in small groups.

Global aim

Empower residents to create changes they think are important to their work environment and to improve patient and provider experiences, using quality improvement/patient safety methods.

SMART aim

Over the course of the academic year, residents will perform a root cause analysis of an adverse event/near miss OR obstacles to care, develop a flowchart outlining the process which allowed the event to occur, identify an area for improvement, and develop a quality improvement project (using PDSA methodology) which will be run through its first PDSA cycle during the academic year.

Objectives and skill sets

Knowledge	Describe the elements of a PDSA cycle
Skill	Select an adverse event/near miss/obstacle to care which you intend to address
Skill	Demonstrate use of fishbone or other tool to complete a root cause analysis
Skill	Demonstrate use of a process map/flowchart to deconstruct the process of care surrounding the event/near miss/obstacle
Skill	Demonstrate how to write a SMART aim statement
Skill	Design an intervention using PDSA methodology that is ready to be launched.

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Attitude	Rate adverse event reporting and RCA as a valuable exercise.
<p>The program's activities aimed at reducing health care disparities include caring for all patients in a compassionate and unbiased manner.</p> <p>Faculty and residents are responsible for reporting patient safety events, including near misses at clinical sites by submitting relevant reports at each site and by notifying the attending anesthesiologist.</p>	

Supervision Policy

Supervision Policy

In addition to complying with the [GME Supervision Policy](#), the Anesthesiology Residency program's policies and procedures are:

Program Supervision Policy

Anesthesiology Residency is a four-year training period, during which residents assume progressively greater responsibility for patient care and develop independence in patient management. A faculty member, whom is ultimately responsible for the patient's care, must supervise residents during their training.

Clinical Base Year (CBY) (Post Graduate Training Year 1)

Anesthesia residents are required to participate in one year of basic clinical training (Clinical Base Year) prior to beginning their specific training in anesthesiology (Clinical Anesthesia Years). The CBY includes rotations on medical services. In addition, anesthesiology residents care for patients on the ICUs, the emergency room, as well as in-patient services during the clinical base year. They may participate in procedures performed in the ICU, procedure suite or operating room under the supervision of a qualified member of the medical staff or senior trainee.

During the CBY, anesthesiology residents are primarily responsible for the care of patients under the guidance and supervision of the attending and senior trainees. They should be the point of first contact when questions or concerns arise about the care of their patients. However, when questions or concerns persist, supervising trainees and/or the attending should be contacted.

Clinical Anesthesia (CA) Years 1- 3 (Post Graduate Training years 2 - 4)

All patient care is under the supervision of an attending physician; residents may provide direct patient care or consultative services. Residents care for patients in the following service areas:

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- Operating room - intraoperative care of an anesthetized patient during a surgical procedure
- Intensive care unit - patients with multisystem organ failure
- Emergency room
- In-patient or out-patient Pain Relief Services
- Obstetric unit – care for parturient patients
- Pre-anesthesia clinics
- Post anesthesia Care Unit
- “off-site” areas including the CT & MRI scanners, cardiac catheterization lab, electrophysiology suite, GI endoscopy suite, interventional radiology department

Residents are expected to evaluate patients under their care, determine the relevant medical and surgical pathologies and co-morbidities and develop an appropriate management plan and carry out the required invasive procedures. Residents may also provide emergency care for patients on wards and in the emergency department, particularly advanced airway management, intravenous and intra-arterial cannulation. Residents will work as part of the patient care team in the operating room, intensive care unit, pain clinic obstetric unit, pre-anesthesia clinic, wards or emergency department.

CA1 (PGY2) Resident Responsibilities

Junior residents are expected to function in the role of a team member requiring direct supervision from attending physicians and senior trainees. CA1 residents are expected to evaluate patients and develop and execute their management plan under close supervision from the supervising attending physician. Residents should be assigned to cases in the operating room appropriate to their level of experience. In the first few months of CA1 residents will care for healthier, ASA1 and 2 patients and patients undergoing minor to moderately complex surgical procedures. Towards the end of the CA1 year residents may care for sicker (ASA3) patients and patients undergoing more complex surgery. Upon occasion, CA1 residents may care for ASA4 patients with direct (hands on) support of their attending.

CA2 (PGY3) Resident Responsibilities

CA2 residents participate in rotations caring for patients in the various required subspecialty anesthesia areas (e.g. cardiac, obstetrics, neurosurgery, pediatrics, etc). Residents spend at least 2 months in a subspecialty rotation; towards the end of the first month a greater autonomy for patient care is expected, and residents should be the first point of contact for questions regarding patient care. Supervision by attendings is required and consulted for any questions that residents cannot immediately answer. In the general operating rooms CA2 residents care for complex patients undergoing surgery in the general operating rooms.

CA3 (PGY4) Resident Responsibilities

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As senior residents, CA3s are expected to assume a leadership role, coordinating the actions of the team, and interacting with nursing and other administrative staff. Senior residents are expected to develop more autonomy for patient care in the development and execution of their management or treatment plan, although ultimate responsibility for patient care lies with the supervising attending physician. CA3 residents care for the most complex patients in the operating rooms and care for patients having off-site interventional procedures. Along with the attending, senior residents provide for the educational needs of any junior residents and students.

Progressive Authority & Responsibility, Conditional Independence, Supervisory Role in Patient Care

The privilege of progressive authority and responsibility, conditional independence, and a supervisory role in patient care delegated to each resident is assigned by the program director and faculty members. The program director evaluates each resident's abilities based on specific criteria, guided by the Milestones. Faculty members functioning as supervising physicians delegate portions of care to residents based on the needs of the patient and the skills of each resident. Faculty supervision assignments are of sufficient duration to assess the knowledge and skills of each resident and to delegate to the resident the appropriate level of patient care authority and responsibility.

Guidelines for Circumstances and Events When Residents Must Communicate with the Supervising Attending

Included in this section are common circumstances and events in which a resident must communicate with the supervising faculty member.

The following circumstances and events may be performed after the trainee has achieved sufficient training as determined by the attending anesthesiologist: Phlebotomy, placement of peripheral intravenous catheters, dressing changes, suture placement and removal, central venous catheter removal, epidural catheter removal, nasogastric tube placement, arterial puncture/cannulation, maintenance of anesthesia management, management of hemodynamics, management of oxygenation and ventilation, evaluation for blood product transfusion. Communication with the attending anesthesiologist is required when the trainee has questions, is uncertain, or is unable to safely or efficiently carry out the above tasks.

The resident is REQUIRED to communicate with the attending anesthesiologist in the following circumstances and events:

- Any perceived patient safety issue
- Any significant change in patient clinical status
- Induction of general anesthesia

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- Emergence from anesthesia
- Critical portions of any anesthetic procedure
- Tracheal intubation
- Supraglottic airway placement
- Fiberoptic tracheal intubation
- Placement of an epidural catheter
- Placement of spinal anesthesia
- Epidural blood patch placement
- Placement of peripheral nerve block
- On and off cardiopulmonary bypass
- Transesophageal echocardiography
- Intrathecal chemotherapy administration
- Lytic nerve blocks
- Procedures performed under fluoroscopy
- Invasive procedures greater than 5 minutes in duration (e.g. complicated arterial line cannulation, central line cannulation)

Emergency Procedures

It is recognized that in the provision of medical care, unanticipated and life-threatening events may occur. The trainee may attempt ANY of the procedures normally requiring direct supervision in a case where the death or irreversible loss of function of a patient or fetus is imminent, and an appropriate supervisory physician is not immediately available. The assistance of more qualified individuals should be requested as soon as practically possible.

Clinical Responsibilities by PGY Levels for Supervision

To promote appropriate resident supervision while providing for graded authority and responsibility, the program use the following classification of supervision:

DIRECT SUPERVISION:

The supervising physician is **physically present** with the resident during the key portions of the patient interaction; PGY-1 residents must initially be supervised in this manner.

INDIRECT SUPERVISION:

The supervising physician is not providing physical or concurrent visual or audio supervision but is **immediately available** to the resident for guidance and is available to provide appropriate direct supervision. The ACGME Review Committee may describe the conditions under which PGY-1 residents progress to be supervised indirectly.

OVERSIGHT:

The supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered.

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During the clinical base year, a PGY1 resident may undertake an anesthesiology rotation in the operating room. In all cases, CBY residents require DIRECT SUPERVISION in the care of the anesthetized patient by an attending anesthesiologist or more senior resident. INDIRECT SUPERVISION may be acceptable towards the end of the first month rotation depending on patient acuity and surgical procedure complexity. DIRECT SUPERVISION is always required for induction of anesthesia, emergence and for any critical portions of the procedure. During the CBY year, interns rotate on other services and are subject to the supervision requirements for these rotations. However, in all cases the supervision of interns will be direct supervision or after evaluation of the resident's abilities indirect supervision by a more senior physician.

PGY2 (CA1)

In the PGY2 (CA1) year, anesthesia residents function at the novice to advanced beginner level and much of the care of anesthetized patients is provided under the DIRECT SUPERVISION of the attending anesthesiologist, who is present in the operating room during anesthesia care. As residents gain experience towards the end of the second month of training, supervision in the operating room will be appropriate to the complexity of the patients' co-morbidities and surgical procedure. INDIRECT SUPERVISION will become appropriate as the resident gains experience towards the end of the CA1 year.

DIRECT SUPERVISION is always required for induction of anesthesia, emergence and for any critical portions of the procedure.

PGY3 (CA2)

In the CA2 year residents work mostly in the subspecialty areas and DIRECT SUPERVISION is appropriate in the first few weeks of the particular subspecialty rotation. As residents gain more experience INDIRECT SUPERVISION will become appropriate depending on the complexity of the case. DIRECT SUPERVISION is always required for induction of anesthesia, emergence and for any critical portions of the procedure.

PGY4 (CA3)

CA3 residents will develop greater autonomy in caring for patients perioperatively, and INDIRECT SUPERVISION is acceptable in most instances. It is at the discretion of the attending anesthesiologist whether DIRECT SUPERVISION is needed or required. Senior residents will supervise junior residents in the operating room.

SUMMARY

Trainee will not perform	Supervising physician physically present with resident during key portions of patient interaction (Direct)	Supervising physician not present or providing concurrent supervision, but immediately available to provide guidance and direct supervision (Indirect)	Supervising physician available to provide review & feedback after care is delivered (Oversight)
NA	1	2	3

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As required by ACGME, the program has identified below (with a “1”) when the *physical presence* of a supervising physician is required.

PROCEDURES / PATIENT INTERACTIONS	PGY- 1	PGY-2	PGY-3	PGY-4
Preoperative Evaluation	1, 2	2	3	3
New Critical Care Evaluation	1, 2	1, 2	1, 2	2, 3
Any patient safety issue	1	1	1	1
Induction of anesthesia	1	1	1	1, 2
Maintenance of anesthesia	1, 2	1, 2	2	2, 3
Emergence from anesthesia	1	1	1	1, 2
Tracheal intubation	1	1	1	1, 2
Supraglottic airway placement	1	1	1	1, 2
Peripheral venipuncture/catheterization	1, 2	2	2	2
Arterial puncture/catheterization	1	1, 2	2, 3	3
Central venous catheterization	1	1	1, 2	2, 3
Pulmonary artery catheterization	1	1	1	1, 2
On/off cardiopulmonary bypass	NA	1	1	1, 2
Peripheral nerve block placement	1	1	1	1, 2
Epidural analgesia/bloodpatch	1	1	1	1, 2
Interventional pain procedures	NA	1	1	1

Transitions of Care Guidelines – Hand-off Process

Transitions of Care (Structured Patient Hand-off) Policy

In addition to complying with the GME [Transitions of Care \(Structured Patient Hand-off\) Policy](#), the Anesthesiology Residency program’s transition of care process that is used is:

Program Policy for Transition of Care is as follows:

PURPOSE:

To establish a protocol and standards within the University of Colorado School of Medicine Anesthesiology Residency Program to ensure the quality and safety of patient care when transfer of responsibility for a patient or group of patients occurs during duty hour shift changes, during transfer from one level of acuity to another, and during other scheduled or unexpected circumstances.

DEFINITION AND SCOPE:

A transition of care (“handoff”) is defined as the communication of information to support the transfer of care and responsibility for a patient/group of

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patients from one service and/or team to another or from one level of care to another. The transition/hand-off process is an interactive communication process of passing specific, essential patient information from one caregiver to another.

Transition of care occurs regularly under the following conditions:

- Change in level of patient care, including inpatient admission from the ambulatory setting, outpatient procedure, or diagnostic area.
- Inpatient admission from the Emergency Department
- Transfer of a patient to or from a critical care unit
- Transfer of a patient to the Post Anesthesia Care Unit (PACU)
- Transfer of care to other healthcare professionals within procedure or diagnostic areas
- Discharge, including discharge to home or another facility such as skilled nursing care
- Change in provider or service change, including resident sign-out, inpatient consultation sign-out, and rotation changes for residents.

PROTOCOL FOR IMPLEMENTATION OF TRANSITIONS OF CARE POLICY

The transition/hand-off process should involve real-time communication, which includes both verbal and written/computerized communication, along with the opportunity for the receiver of the information to ask questions or clarify specific issues. The hand-off process may be conducted by telephone conversation. Voicemail, text message, e-mail, and/or any other unacknowledged message is **not** an acceptable form of patient handoff. A telephonic hand-off must follow the same procedures outlined in this Section, and both parties to the hand-off must have access to the electronic medical record and an electronic or hard copy version of the sign-out evaluation. Patient confidentiality and privacy must be guarded in accordance with HIPAA guidelines.

1. The transition process should include, at a minimum, the following information in a standardized format.
 - Identification of patient, including name, medical record number, and date of birth
 - Identification of attending physician of record and contact information
 - Diagnosis and current status/condition (level of acuity) of patient
 - Recent events, including changes in condition or treatment, current medication status, recent lab tests, allergies, anticipated procedures and actions to be taken
 - Outstanding tasks – what needs to be completed in the immediate future
 - Outstanding laboratories/studies – what needs follow up or review during shift
 - Changes in patient condition that may occur requiring interventions or contingency plans
2. Scheduling and transition/hand-off procedures ensure that:
 - Residents comply with specialty specific/institutional duty hour requirements

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- Faculty are scheduled and available for appropriate supervision according to the requirements of the scheduled residents.
- All parties (including nursing) involved in a particular program and/or transition process have access to one another's schedules and contact information through the AMION call center. The call schedules are available to appropriate personnel and also to the hospital operators at all times.
- Patients are not inconvenienced or endangered in any way by frequent transitions in their care and efforts to minimize the number of transitions is ensured by Attending staff.
- All parties directly involved in the patient's care before, during, and after the transition have opportunity for communication, consultation, and clarification of information.
- Safeguards exist for coverage when unexpected changes in patient care may occur due to circumstances such as resident illness, fatigue, or emergency.
- Residents have an opportunity to both give and receive feedback from each other or faculty physicians about their handoff skills.

3. The transition of care process is a prominent component of our curriculum.

4. Residents must demonstrate competency in performance of this task. These include:

- Direct observation of a handoff session by a licensed independent practitioner (LIP)-level clinician familiar with the patient(s)
- Direct observation of a handoff session by an LIP-level clinician unfamiliar with the patient(s)
- Direct observation by a peer or by a more senior trainee
- Evaluation of written handoff materials by an LIP-level clinician familiar with the patient(s)
- Evaluation of written handoff materials by an LIP-level clinician unfamiliar with the patient(s)
- Evaluation of written handoff materials by a peer or by a more senior trainee
- Didactic sessions on communication skills including in-person lectures, web-based training, review of curricular materials and/or knowledge assessment
- Assessment of handoff quality in terms of ability to predict overnight events
- Assessment of adverse events and relationship to sign-out quality through:
 - Survey
 - Online Reporting
 - Chart review

5. Monitoring of handoffs ensures:

- There is a standardized process in place that is routinely followed
- There is consistent opportunity for questions

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- The necessary materials are available to support the handoff (including, for instance, written sign-out materials, access to electronic clinical information)
- A quiet setting free of interruptions is consistently available, for handoff processes that include face-to-face communication
- Patient confidentiality and privacy are ensured in accordance with HIPAA guidelines; this includes the appropriate disposal of any written material in HIPAA-compliant receptacles, and encryption of any electronic devices used during the handoff process.

6. Trainees are evaluated in their ability to communicate patient information clearly, accurately, and responsibly to support the safe transfer of care from one provider to another.

- The program optimizes transitions in patient care, including their safety, frequency, and structure by minimizing the number of handoffs for a given patient encounter.
- The program monitors effective, structured hand-over processes by direct observation.
- Program ensures residents are competent in communicating with the team members in the hand-over process through direct observation.
- The program and clinical sites maintain and communicate schedules of attending physicians and residents/fellows, currently responsible for care, by utilizing QGenda and/or AMION.
- The program ensures continuity of patient care, consistent with the program's policies and procedures in the event that a resident may be unable to perform their patient care responsibilities due to excessive fatigue or illness, or family emergency by implementing a jeopardy call system.

Medical Student Learning Objectives

IDPT 7050, Operative and perioperative care clerkship, 3rd year medical students

Preoperative Anesthetic Care

- Introduce yourself to anesthesia providers and patients.
- Conduct pre-anesthetic assessments with the help of other anesthesia providers including: anesthesia residents, certified registered nurse anesthetists, and attending anesthesiologists.

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- Assist in formulating an anesthetic plan for each patient.
- Identify effective pre-anesthetic medications and discuss objectives for each medication.
- Observe regional block placement for surgical procedures and/or postoperative pain control.
- Assess the airway of at least 3 patients.
- Assign ASA classification for at least 3 patients.
- Perform a cardiac evaluation for at least one ASA 3 patient.

Intraoperative Anesthetic Care

- Demonstrate knowledge of surgical procedures including identification of important surgical considerations that will affect the patient's intraoperative care.
- Identify induction agents and list their advantages and disadvantages.
- Observe induction of anesthesia.
- Demonstrate and observe airway management techniques.
- Identify and understand the principles and practice of standard ASA monitors
(<http://www.asahq.org/publicationsAndServices/standards/02.pdf>).
- Assist in prescribing and conducting appropriate intraoperative fluid and electrolyte therapy.
- Assist in prescribing and conducting anesthetic maintenance.
- Describe and identify position-related injuries that may occur in anesthetized patients.
- Perform at least 10 bag-mask ventilations.
- Attempt at least 5 tracheal intubations.
- Attempt at least 2 intravenous cannulations.
- Observe arterial line placement and central line placement when possible.

Postoperative Anesthetic Care

- Demonstrate knowledge of local anesthetic pharmacology as it relates to the practice of anesthesiology.
- Demonstrate knowledge of pain assessments and modalities for treatment of postoperative pain.
- Evaluate pain control in at least 3 patients in the PACU.

ACGME Specific Program Requirements

The program will incorporate the current [Accreditation Council for Graduate Medical Education](#) program requirements within this Program Manual annually.

https://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/040_Anesthesiology_2019_TCC.pdf?ver=2019-03-21-161242-837

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