

**Department of Anesthesiology
Critical Care Medicine
Fellowship Program**

**PROGRAM HANDBOOK AND
POLICY MANUAL**

2016-2017

University of Colorado School of Medicine
Anesthesia Critical Care Medicine Fellowship

Program Personnel and Contact Information

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Faculty Listing and Clinical/Research Interests

Faculty	Clinical / Research Interests
Jason Brainard, MD Assistant Professor Program Director	Critical Care Medicine
Benjamin Scott, MD Assistant Professor Associate Program Director	Critical Care Medicine
Muhammad Azam, MD Associate Professor	Critical Care Medicine
Karsten Bartels, MD Assistant Professor	Critical Care and Pain Medicine
David Fullerton, MD Professor	Cardiothoracic Surgery
Eva Grayck, MD Professor	Pediatric Critical Care Medicine
Maung Hlaing, MD Assistant Professor	Adult Cardiothoracic Anesthesiology and Critical Care Medicine
Abigail Lara, MD Assistant Professor	Pulmonary Sciences and Critical Care Medicine
Robert McIntyre, MD Associate Professor	Traumatology and Surgical Critical Care
Erik Peltz, DO Assistant Professor	Traumatology and Surgical Critical Care
Breandan Sullivan, MD Assistant Professor	Critical Care Medicine
Gregory Weiss, MD Assistant Professor	Critical Care Medicine
Paul Wischmeyer, MD Professor	Critical Care and Clinical Nutrition
Scott Wolf, MD Assistant Professor	Critical Care Medicine

Program Curriculum

ANESTHESIOLOGY CRITICAL CARE MEDICINE CURRICULUM

The one-year Anesthesiology Critical Care Medicine Fellowship will be divided into 13 separate four-week block rotations. As per ACGME requirements, ten blocks will be dedicated to clinical care in one of four intensive care units at University of Colorado Hospital. One block of time will be dedicated to formal echocardiography training and another to training and involvement in research. The remaining blocks is elective and can be used for an additional ICU rotation, ultrasound and echocardiography training, subspecialty rotation (ex. bronchoscopy, transplant surgery, or infectious disease), or additional dedicated research time.

The core clinical training is focused in the Surgical Intensive Care Unit (SICU) and Cardiothoracic Intensive Care Unit (CTICU) with four blocks of time devoted to training in each of these two ICUs. The additional two blocks of critical care time will be completed in the Medical Intensive Care Unit (MICU) and Neurology/Neurosurgery Intensive Care Unit (NeuroICU). All critical care teams at University of Colorado Hospital (UCH) are led by an attending intensivist and team members include fellows, residents, advanced practice providers, nurses, respiratory therapists, pharmacists, physical and occupational therapists, and social workers.

Detailed information on ICU and non-ICU rotations are listed below.

Cardiothoracic Intensive Care Unit (CTICU)

The UCH CTICU is an 18-bed unit admitting patients from cardiac, thoracic, and vascular surgery services. The unit is co-directed by Breandan Sullivan and David Fullerton from the Departments of Anesthesiology and Surgery, respectively. Patient care is managed by a multidisciplinary critical care team, led by an attending intensivist from the Department of Anesthesiology or Surgery.

The CTICU population includes patients undergoing heart and lung transplantation and ventricular assist device (VAD) insertion, coronary revascularization, valve surgery, aortic reconstructive surgery, major vascular surgery, lobectomy and pneumonectomy. The CTICU is also home to a growing population of patients managed with veno-venous and veno-arterial extracorporeal membrane oxygenation (ECMO).

Surgical and Trauma Intensive Care Unit (STICU)

The UCH STICU is a 24-bed unit, and admits patients from multiple surgery services including: general surgery, surgical oncology, trauma and acute care surgery, transplant, ENT, orthopedics, plastics, and gyn-onc services. The unit is co-directed by Jason Brainard and Robert McIntyre from the Departments of Anesthesiology and Surgery, respectively. Patient care is managed by a multidisciplinary critical care team, led by an attending intensivist from the Department of Anesthesiology or Surgery.

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The SICU population most commonly includes patient following major oncologic surgery, transplant surgery, and trauma and emergency surgeries and those with perioperative complications. The SICU also cares for all blunt and penetrating trauma patients requiring critical care services.

Medical Intensive Care Unit (MICU)

The UCH MICU is a 24-bed unit admitting critically ill patients from all medical services. The unit is directed by Ellen Burnham from the Division of Pulmonary Critical Care in the Department of Medicine. Patient care is managed by a multidisciplinary critical care team, led by an attending intensivist from the Division of Pulmonary Critical Care Medicine.

The MICU population includes a diverse pulmonary critical care and subspecialty medical critical care patient population.

Neurology / Neurosurgery Intensive Care Unit (NeuroICU)

The UCH NeuroICU is a 24-bed unit admitting critically ill patients with primary neurological illnesses and those from the neurosurgical service. The unit is directed by Robert Neumann from the Department of Neurosurgery. Patient care is managed by a multidisciplinary critical care team, led by an attending intensivist from the Department of Neurosurgery.

The NeuroICU population includes patients affected by neurologic conditions including hemorrhagic and non-hemorrhagic CVA, meningitis and encephalitis, and postoperative patients following intracranial and major spine surgery. The NeuroICU also cares for patients with primary neurotrauma.

Echocardiography Rotation

The echocardiography block is designed to provide formal training in critical care echocardiography, including both transthoracic and transesophageal echocardiography. Education includes a didactic program, high-fidelity echo simulation, and bedside application. Teaching is provided by faculty Anesthesiologists and Cardiologists board certified in echocardiography.

Research Rotation

All fellows will utilize at least one block for the purpose of training and involvement in research. Education will include didactic learning focused on building an academic career and critical care research will be available to fellows in basic, translational, or clinical research categories. The intensivist group within the Department of Anesthesiology has multiple funded researchers focused on critical care nutrition, infectious disease, delirium, post-operative respiratory function, surgical outcomes, critical care quality improvement and patient safety. In the first month of the fellowship year, fellows will meet with the Program Director and Director of Research for the fellowship and be guided to a specific project and research mentor.

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PROGRAM GOALS AND OBJECTIVES

The curriculum is based on achievement of the clinical competencies outlined below:

Patient Care

Fellows will provide clinical care and consultation, under the direction and supervision of faculty members, by evaluating a patient's medical condition, determining the need for critical care services, and, as appropriate formulating a plan of care, including:

- Incorporation of ethical aspects of critical care medicine into practice;
- Diagnosis and management of cardiovascular dysfunction;
- Diagnosis and management of pulmonary dysfunction;
- Diagnosis and management of sepsis and septic shock;
- Diagnosis and management of renal dysfunction, to include techniques for renal replacement therapies;
- Diagnosis and management of hematologic disorders, to include coagulopathies;
- Diagnosis and treatment of hepatic dysfunction;
- Evaluation and management of central and peripheral nervous system dysfunction;
- Management of life threatening medical illness, to include oncologic, dermatologic, and endocrinology illnesses;
- Indications for and interpretation of laboratory results;
- Psychiatric implications of critical illness;
- Palliative and end-of-life care;
- Routine incorporation of standards of care and established guidelines or procedures for patient safety and error reduction
- Demonstration of patient management and psychomotor (procedural) skills required for the practice of the subspecialty, and demonstrate acquisition of the skills and habits of self- assessment and reflection.
- Coordinating care across medical specialties, as appropriate, to communicate patient status, plans of care, and long-term needs of the patient to other health care providers, and to collaborate in the management of the critically-ill patient.

Fellows will demonstrate proficiency in procedural skills and sound clinical judgment in the care of patients with complex medical and surgical conditions in the following proficiency areas:

- Airway maintenance and management, to include fiberoptic approaches to the airway for both diagnostic and therapeutic purposes;
- Indications for and placement of percutaneous tracheostomies;
- Invasive and non-invasive ventilatory support;
- Techniques for and therapeutic treatment of conditions requiring thoracentesis and/or tube thoracotomy when indicated;
- Diagnosis and pharmacologic and mechanical support of circulation, myocardial function, and shock;

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- Cardiopulmonary resuscitation (CPR);
- Placement and management of arterial, central venous, and pulmonary arterial catheters;
- Emergent and therapeutic placement of pacemakers;
- Fluid resuscitation and management of massive blood loss;
- Prescribing enteral and total parenteral nutrition;
- Ultrasonography for transthoracic (TTE) and transesophageal (TEE) echocardiography, facilitation of invasive catheter placement, and diagnostic studies and therapeutic interventions relevant to the critically-ill patient; and
- Pain management, sedation, and anxiolysis for the critically-ill patient.

Medical Knowledge

Fellows will demonstrate knowledge in those areas appropriate for a subspecialist in anesthesiology critical care medicine.

- Resuscitation;
- Cardiovascular physiology, pathology, pathophysiology, and therapy;
- Respiratory physiology, pathology, pathophysiology, and therapy;
- Renal physiology, pathology, pathophysiology, and therapy;
- Central and peripheral nervous system physiology, pathology, pathophysiology, and therapy;
- Pain management, sedation, and anxiolysis for critically-ill patients;
- Recognition and management of altered states of consciousness, to include delirium;
- Metabolic and endocrine effects of critical illness;
- Infectious disease physiology, pathology, pathophysiology, and therapy;
- Primary hematologic disorders and hematologic disorders secondary to critical illness;
- Transfusion therapy;
- Gastrointestinal, genitourinary, obstetric, and gynecologic disorders;
- Trauma, to include burn management;
- Monitoring equipment for the care of critically-ill patients and basic concepts of bioengineering, to include the principles of ultrasound, Doppler, and other medical imaging techniques relevant to critical care medicine;
- Life-threatening pediatric conditions;
- Palliative and end-of-life care;
- Pharmacokinetics and dynamics, to include drug metabolism and excretion in critical illness;
- Coordination of transport and triage of critically-ill patients;
- Coordination of care for the patient with multisystem failure requiring evaluation and management by a diverse group of providers;
- Administrative and management principles, to include triage, resource utilization, and rationing of limited resources;
- Understanding about the value and use of critical care electronic health records and integration with other medical record systems;

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- Medical informatics and biostatistics relevant to critical care medicine;
- Effective interpersonal and communication skills with patients, family members, and other health care providers;
- Cost-effective care;
- Ethics and legal issues related to the care of critically-ill patients, to include surrogate decision-making, advance directives, and management of disagreements between providers and patients regarding resource use;
- Psychiatric implications of critical illness;
- Development and implementation of policies and procedures related to ICU administration (admission, discharge, etc.);
- Development and implementation of evidence-based approaches to clinical care and clinical guidelines to optimize patient outcomes and minimize needless variations in care delivery;
- Regulatory requirements that apply to critical care units, including those of The Joint Commission and other regulatory agencies;
- Financial aspects of ICU management and the implications for allocation of institutional resources and overall costs of care;
- Resource utilization, including personnel management and staffing patterns;
- Patient triage and coordination of care with other hospital units (acute care, transitional care, post-anesthesia care unit, etc.);
- Quality of care, patient safety initiatives, and patient and family satisfaction; and
- Risk stratification and outcome measurement, such as Acute Physiology and Chronic Health Evaluation (APACHE) and other scoring systems.

Practice-based Learning and Improvement

Fellows will demonstrate an ability to analyze, improve, and change practice or patient care.

- Fellows will actively participate in the Surgical Trauma Intensive Care Unit (STICU) Comprehensive Unit Based Safety Program (CUSP). This multidisciplinary committee is tasked with identifying and implementing quality improvement and patient safety projects in the STICU. Fellows will each be assigned to co-lead one of these projects alongside a non-physician patient care provider. The project will include:
 - Analysis and identification of patient safety or quality improvement need,
 - The design of a process to address this need,
 - The implementation of this project in the STICU,
 - Evaluation of the penetration of the project, and
 - Appraisal of the clinical outcome of the project. The Program Director will work with the fellow to identify a project and select a partner for the work. The project will be supported by the entire multidisciplinary STICU CUSP team, including the medical directors from the SICU and leadership from hospital administration.

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- Fellows will each be required to newly develop or significantly update a clinical patient care guideline for either the core Surgical Trauma Intensive Care Unit (STICU) and/or Cardiothoracic Intensive Care Unit (CTICU).
 - The guideline will be presented at a monthly ICU quality improvement meeting and the fellow will receive constructive feedback from the group.
 - The fellow and mentor will then revise the document, as needed, and submit it for implementation.
- Fellows will all participate in critical care simulation utilizing high-fidelity manikins as part of the educational program.
 - Simulation scenarios will include acutely ill or deteriorating patients and scenarios will be performed both individually and in multidisciplinary groups.
 - Evaluation will include debriefing by content experts and also self-debriefing based on video recording of the scenarios. Fellows will view the video recordings of their performance and be asked to assess themselves based on critical care competencies, including patient care, leadership, and teamwork.
 - The self-assessments will then be discussed with the simulation director and content expert.
- Fellows will then be asked to use similar self-assessments to rate themselves in three subsequent real-life clinical patient care encounters during their ICU rotations. These written self-assessments will be discussed during quarterly meetings with the program director.

Interpersonal and Communication Skills

- Fellows will develop competence in effective communication skills with patients and their families or surrogates, including acquisition of informed consent, communication about prognosis and likelihood of recovery, and disclosure of complications and errors and their management.
- Fellows will develop competence in teaching, including the preparation and presentation of educational material for patients, residents, medical students, and other health care professionals in the subspecialty area, including:
 - The University of Colorado Critical Care Lecture Series, which is designed to cover an extensive critical care curriculum and
 - Research the subject, prepare a slide set, and present the topic at the weekly conference.
- Fellows all participate in daily multidisciplinary rounds in each of the ICUs. At University of Colorado Hospital, ICU rounds include the intensivist team (attending, fellow, advanced practice provider, resident, medical student), critical care nurses, respiratory therapists, pharmacists, dieticians, and case managers.
- Fellows will participate and gradually lead multidisciplinary critical care rounds, including residents and medical students rotating on the ICU services.

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- ICU rotations will also include a progressive role in supervision of resident and medical students.
- Working alongside faculty intensivists, fellows will learn clinical skills in patient care, including teaching and supervising residents.

Professionalism

- Fellows will develop a commitment to carrying out professional responsibilities and an adherence to ethical principles by demonstrating competence in: compassion, integrity, and respect for others; responsiveness to patient needs that supersedes self-interest; respect for patient privacy and autonomy; accountability to patients, society, and the profession; and sensitivity and responsiveness to a diverse patient population, including to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.
- Fellows will work alongside palliative care specialists with learning concentrating on the following areas:
 - End-of-life communication
 - Ethical and legal decision making
 - Pain in cancer and non-cancer patients
 - Management of non-pain symptoms
 - Medical and neuro-psychiatric co-morbidities in advanced illness
 - Psychosocial and spiritual support
 - Death and dying across cultures
 - Bereavement support for the family
 - Hospice and palliative approach to care interdisciplinary team work

System-Based Practice

- Fellows will develop an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care, including:
 - Three hospital wide critical care committees, including: Critical Care Quality Improvement Committee, Resuscitation Committee, and Trauma Committees.
 - Fellows will attend case manager (social work) conferences.
 - Fellows will be expected to tour one or more long-term acute care hospitals or skilled nursing facilities to gain insight into patient outcomes and the broader medical system in which they will practice
- Fellows will all actively participate in monthly quality improvement meetings in both the core STICU and CTICU (Cardiothoracic ICU) rotations.
- Fellows will participate in the Surgical Trauma Intensive Care Unit Comprehensive Unit-Based Safety Program (STICU CUSP).
- Fellows will each be assigned to co-lead one of these projects alongside a non-physician SICU provider. The project will include:
 - 1) Analysis and identification of patient safety or quality improvement need,
 - 2) The design of a process to address this need,
 - 3) The implementation of this project in the STICU,
 - 4) Evaluation of the penetration of the project, and
 - 5) Appraisal of the clinical outcome of the project.

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- Fellows will all actively participate in the monthly quality improvement meetings in both the STICU and CTICU.
- Fellows will function as the triage physician for admissions and discharges from the assigned intensive care units. As the triage physician, the fellow will perform the administrative function of decisions regarding utilization of critical care beds, including the determination of which patients meet admission criteria and which patients must be discharged or transferred to provide open beds for new admissions.

For a complete description of all rotation goals and objectives, please see additional information in the provided link: [Critical Care Fellowship Goals & Objectives Index](#)

EVALUATION FORMS

To view all program evaluation tools, please see documents in the provided link: [Critical Care Fellowship Evaluation Form Index](#)

CONFERENCE SCHEDULE

Didactic Exercises	Date	Time	Duration in hours	Title	Instructor/Presenter		
					Anesthesia Faculty	Fellow	Guest Lecturer
Department of Anesthesiology Grand Rounds	Mondays Weekly (except holidays)	6:45 a.m.	1	Various	X	X	X
Critical Care Journal Club	Third Wednesday of every month	7:00 p.m.	2	Various	X	X	
Department of Anesthesia Board Examination Lecture Series	Thursdays Weekly (except holidays)	6:30 a.m.	1	Various	X		
Cardiac Anesthesia Lecture Series	Fridays Weekly (except holidays)	6:30 a.m.	1	Various	X		
TRISAT Critical Care Webcast Series	Tuesdays Weekly (except holidays)	11:00 a.m.	1	Various			X
Critical Care Lecture Series	7/13/2016	3:00 p.m.	1	Delirium in the ICU: Causes and Management			McIntyre
Critical Care Lecture Series	7/20/2016	3:00 p.m.	1	Cardiac Resuscitation/Goal Directed Resuscitation			Pieracci
Critical Care Lecture Series	7/27/2016	3:00 p.m.	1	Airway Management in the ICU		X	

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Didactic Exercises	Date	Time	Duration in hours	Title	Instructor/Presenter		
					Anesthesia Faculty	Fellow	Guest Lecturer
Critical Care Lecture Series	8/3/2016	3:00 p.m.	1	Management of Acute Respiratory Failure including Mechanical Ventilation			Johnson
Critical Care Lecture Series	8/10/2016	3:00 p.m.	1	Acute Renal Failure: Diagnosis and Management			Stovall
Critical Care Lecture Series	8/17/2016	3:00 p.m.	1	Prevention of Nosocomial Infection in the ICU			McIntyre
Critical Care Lecture Series	8/24/2016	3:00 p.m.	1	Transfusion Medicine/ Massive transfusion therapy			Pieracci
Critical Care Lecture Series	8/31/2016	3:00 p.m.	1	Fluids and Electrolytes		X	
Critical Care Lecture Series	9/14/2016	3:00 p.m.	1	Care of the postop cardiac pt. incl. mechanical support of the failing heart	Sullivan		
Critical Care Lecture Series	9/21/2016	3:00 p.m.	1	Intracranial Hypertension	Scott		
Critical Care Lecture Series	9/28/2016	3:00 p.m.	1	Shock/Vasopressor agents			Moore
Critical Care Lecture Series	10/5/2016	3:00 p.m.	1	Nutrition Support for the Critically Ill and Injured Patient	Wischmeyer		
Critical Care Lecture Series	10/12/2016	3:00 p.m.	1	Thermal Injury: Burns and Smoke Inhalation			Schurr
Critical Care Lecture Series	10/19/2016	3:00 p.m.	1	Sepsis		X	
Critical Care Lecture Series	10/26/2016	3:00 p.m.	1	Bleeding and Coagulation Disorders			Moore
Critical Care Lecture Series	11/2/2016	3:00 p.m.	1	Hypothermia and Hyperthermia			Jurkovich
Critical Care Lecture Series	11/9/2016	3:00 p.m.	1	Trauma			Moore
Critical Care Lecture Series	11/16/2016	3:00 p.m.	1	Sedation and Analgesia: Practical Drug Selection and Pharmacology	Brainard		
Critical Care Lecture Series	11/30/2016	3:00 p.m.	1	Abdominal Compartment Syndrome			Johnson
Critical Care Lecture Series	12/7/2016	3:00 p.m.	1	Intensive Insulin Therapy	Wischmeyer		
Critical Care Lecture Series	12/14/2016	3:00 p.m.	1	Management of Severe Stroke and Subarachnoid Hemorrhage	Scott		
Critical Care Lecture Series	1/4/2017	3:00 p.m.	1	Hemodynamic Monitoring			Pieracci
Critical Care Lecture Series	1/11/2017	3:00 p.m.	1	Supraventricular Arrhythmias		X	
Critical Care Lecture Series	1/25/2017	3:00 p.m.	1	Acute Respiratory Distress Syndrome Including Ventilatory Strategies			Stovall

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Didactic Exercises	Date	Time	Duration in hours	Title	Instructor/Presenter		
					Anesthesia Faculty	Fellow	Guest Lecturer
Critical Care Lecture Series	2/1/2017	3:00 p.m.	1	Pancreatitis: Medical and Surgical Management			Barnett
Critical Care Lecture Series	2/8/2017	3:00 p.m.	1	DVT/PE			Jurkovich
Critical Care Lecture Series	2/15/2017	3:00 p.m.	1	Complex Acid-Base Disorders/ABG interpretation		X	
Critical Care Lecture Series	3/1/2017	3:00 p.m.	1	Obstetrical Emergencies			McIntyre
Critical Care Lecture Series	3/8/2017	3:00 p.m.	1	Seizures & Status Epilepticus			McIntyre
Critical Care Lecture Series	3/15/2017	3:00 p.m.	1	Ventricular Arrhythmias	Sullivan		
Critical Care Lecture Series	3/22/2017	3:00 p.m.	1	Myocardial Ischemia and Infarction/CHF	Sullivan		
Critical Care Lecture Series	3/29/2017	3:00 p.m.	1	Noninvasive Ventilation	Brainard		
Critical Care Lecture Series	4/5/2017	3:00 p.m.	1	Fulminant Hepatic Failure and Variceal Bleeding: Current Management		X	
Critical Care Lecture Series	4/12/2017	3:00 p.m.	1	Fungal Disease in the ICU/Infections in Immunocompromised Patients	Moine		
Critical Care Lecture Series	4/19/2017	3:00 p.m.	1	Endocrine Emergencies			Pieracci
Critical Care Lecture Series	4/26/2017	3:00 p.m.	1	Transplant Critical Care Including Immunosuppressive Drugs		X	
Critical Care Lecture Series	5/3/2017	3:00 p.m.	1	Death by Neurologic Criteria			McIntyre
Critical Care Lecture Series	5/10/2017	3:00 p.m.	1	Pulmonary Hypertension			Johnson
Critical Care Lecture Series	5/17/2017	3:00 p.m.	1	Hypertensive Emergencies	Azam		
Critical Care Lecture Series	5/24/2017	3:00 p.m.	1	Management of GI Bleeding / Prevention of GI Bleeding in the ICU		X	
Critical Care Lecture Series	5/31/2017	3:00 p.m.	1	Drug Overdoses	Brainard		
Critical Care Lecture Series	6/7/2017	3:00 p.m.	1	Ethical Dilemmas in the ICU			Jurkovich
Critical Care Lecture Series	6/14/2017	3:00 p.m.	1	PA Catheter Waveforms		X	
Critical Care Lecture Series	6/21/2017	3:00 p.m.	1	Infectious Diseases/Antibiotics			Stovall

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](#)

[Concern/Complaint Policy](#)

[Disciplinary Action Policy](#)

[Duty Hours Policy](#)

[Eligibility and Selection Policy](#)

[Evaluation and Promotion Policy](#)

[Grievance Policy](#)

[International Residency Rotations Policy](#)

[Leave Policy](#)

[Medical Records Policy](#)

[Moonlighting Policy](#)

[Non-Compete Policy](#)

[Physician 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](#)

[Policy on USMLE \(and COMLEX\) Examinations](#)

[Work Environment Policy](#)

Key University of Colorado Policies

[Sexual Harassment Policy](#)

[Disability Accommodation Policy](#)

[HIPAA Compliance](#)

PROGRAM-SPECIFIC POLICIES

Medical Student Learning Objectives

Fellows will teach senior medical students during their Surgical Trauma ICU Sub-Internship (Anesthesia 8001)

Medical Student Learning Objectives for this rotation include the following:

Knowledge Base

- Understand basic diagnosis and management of acute organ failure, with particular emphasis on the cardiorespiratory system.
- Be able to employ basic principles of ventilator management and airway management for patients with acute respiratory failure.
- Be able to interpret basic hemodynamic data
- Understand the goals of intensive care for postoperative surgical patients.
- Understand and be able to implement basic initial management of sepsis and septic shock.
- Become familiar with various acid-base and fluid and electrolyte disorders
- Understand basic principles of traumatology and damage control resuscitation.
- Understand and apply basic principles of sedation and analgesia in the critical care unit.
- Understand when and how to implement parenteral and enteral nutrition in the critically ill patient.
- Understand criteria for admission and transfer of ICU patients, as well as the role of long-term acute care, rehab, and skilled nursing facilities.

Implementation

- Didactic methods to achieve required objectives include:
 - Reading assignments
 - Lectures
 - Computer-assisted programs (if available)
 - Student attendance at/participation in formal clinical presentations by medical faculty
- Clinically oriented teaching methods may include:
 - Assignment of limited co-management responsibilities under supervision
 - Participation in clinic visits, daily patient rounds and conferences
 - Supervised & critiqued clinic work-ups of patients admitted to the service
 - Assigned, case-oriented reading case presentations

Duty Hours Policy

Duty Hours Policy

The Anesthesia Critical Care Medicine Fellowship program complies with the ACGME Common and *specialty-specific* Program Requirements copied below.

[2011 Updated Common Program Requirements](#)

[2012 Specialty-Specific Duty Hour Definitions and FAQs](#)

In addition to complying with GME **Duty Hours Policy**, the Anesthesia Critical Care Medicine Fellowship program's policies and procedures are:

The University of Colorado Department of Anesthesiology also complies with the Duty Hours Process and the program specific monitoring process is outlined below.

Program Duty Hour Monitoring Process

The program monitors and reports fellow duty hours through the GME Residency Management System, MedHub. All fellows are required to log work hours weekly via MedHub. The Program Director will review duty hours monthly for all trainees and will use this data to proactively adjust rotation and call schedules to avoid duty hours violations. In the event that a duty hours violation occurs, the Program Director will review the violation and meet with the fellow immediately to identify contributing factors and develop an action plan to prevent future violations. The Program Director has ensured that all rotation sites and hospitals involved in the training program adhere to duty hours requirements and will actively work to address any violations.

Alertness Management and Fatigue Mitigation

All residents and core faculty are required to complete GME modules on duty hours, alertness management, fatigue and sleep deprivation. The program educates all faculty and residents to recognize the signs of fatigue and sleep deprivation and provide education in alertness management and fatigue mitigation processes.

If any fellow is too fatigued to perform their patient care duties safely and effectively, the supervising attending physician will relieve the fellow of their duties to rest and ensure that all patient care responsibilities are carried out or distributed effectively to the rest of the care team.

Program Call Policy/Guidelines

Call schedules will vary slightly for each rotation. The majority of call will be in-house, but some rotations may involve home call. In-house call will be scheduled at least four weeks in advance, and will not exceed every fourth night on call. All in-house call will count towards the 80-hour weekly duty hours limitation. In-house call will not exceed 24 hours of continuous duty, except for transitions of care as per GME policy. Hours spent in the hospital during at-home call will count toward the weekly duty hours. At-home call will not be so frequent or taxing that it

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impairs a fellow's ability to obtain adequate rest. Time periods spent in the hospital during at-home call do not result in a new off-duty period each time the fellow leaves the hospital. Additionally, fellows will be guaranteed one 24-hour period per seven days that is free from all clinical duties.

Unusual Resident-Initiated Extensions - Additional Duty

Care of a single patient defined: Continuity for severely ill or unstable patient, academic importance of the events transpiring, or humanistic attention to the needs of the patient or family. Fellow must appropriately hand over care of all other patients to the team responsible and document reasons for remaining to care for the single patient in question in the MedHub system. The Program Director will review each submission of additional service, and track both individual resident and program wide cases of additional duty.

Senior Resident and Fellow - Preparation to Enter Unsupervised Practice of Medicine

Residents in the final years of education (as defined by the ACGME Anesthesia Critical Care Medicine Review Committee), must be prepared to enter the unsupervised practice of medicine and care for patients over irregular or extended periods. This preparation must be within the context of the 80 hour, 28 hour and day off standards. There may be circumstances (as defined by the Review Committee) when senior residents must stay on duty to care for their patients or return to the hospital with fewer than eight hours free of duty. Circumstances of return-to-hospital activities with fewer than 8 hours away from the hospital will be monitored by the program director.

Eligibility and Selection Policy

Eligibility and Selection Policy

In addition to complying with GME **Eligibility and Selection Policy**, the Anesthesia Critical Care Medicine program's policies and procedures are:

Applicants eligible for appointment must successfully complete an ACGME-accredited specialty program and/or meet other eligibility criteria as specified by the review committee.

1. Individuals applying for the fellowship program must document completion of an ACGME-accredited residency in anesthesiology or emergency medicine or meet requirements as outlined in ACGME program requirements.
2. Residents in our program must be a U.S. citizen, lawful permanent resident, refugee, asylee, or possess the appropriate documentation to allow Resident to legally train at the University of Colorado Denver, School of Medicine.

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3. Applicants must have a permanent medical license as granted by the Colorado Board of Medical Examiners (CBOME).

Selection from among eligible applicants is based on criteria such as:

1. 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.

Evaluation & Promotion Policy

Evaluation and Promotion Policy

Criteria for Promotion & Graduation

In addition to complying with the GME **Evaluation and Promotion Policy**, the Anesthesia Critical Care Medicine program's policies and procedures are:

Purpose

The program recognizes the need to provide a structure by which performance related to the training program will be assessed and consideration given for promotion to the next level of training. Evaluation will be provided in accordance with Graduate Medical Education Committee policy and ACGME common program requirement V.A.c: which says "a process involving use of assessment results to achieve progressive improvements in residents' competence and performance". Note: This policy addresses performance relating to academic program requirements and does not supersede other institutional or legal requirements that must be met by the resident to remain in a training program.

Policy

Any resident participating in training will be provided, at a minimum, a semi-annual formal evaluation developed by the Program Director. Residents shall be allowed to review semi-annual evaluations contained in permanent records and other evaluations as determined by program policy. The formal written evaluation shall:

- Address each of the six ACGME core competencies.
- Include well defined scoring and rating criteria that seek to minimize subjective assessment of performance.
- Include language indicating satisfactory performance, advancement to the next level of training (if applicable) or provide specific actions and performance requirements by the resident to return to a level of satisfactory performance or advancement to the next level of training.
- Be signed and dated by the resident and Program Director.
- Become a part of the permanent record file for the resident.
- In the event that academic status of a resident is changed to Probation or Termination a letter of notification to the resident will be co-signed by the Associate Dean for GME. Additional information is provided in the institutional policy titled "Grievance Policy and Procedure".

EVALUATION OF RESIDENTS/FELLOWS AND FACULTY

Evaluation of residents and faculty are done monthly through the on-line evaluation program, MedHub. See provided examples on www.virtue.ucdenver.edu/residents. Residents can view their evaluations on line at any time by logging on to www.ucdenverMedHub.com. Residents are

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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. The process for completing and reviewing evaluations will be discussed at orientation. Similarly, faculty members are required to complete monthly evaluations on each resident they work with during the month. They can view their evaluations on line but cannot see which resident completed the evaluation.

MULTI-SOURCE EVALUATION

Residents are evaluated by nursing personnel from the operating room/PACU and the critical care unit. These evaluations are done on line through MedHub. A sample evaluation form can be found at www.virtue.ucdenver.edu/residents.

ROTATION EVALUATION

At the end of each rotation you will receive an email asking you to complete an evaluation form. This evaluation form can be accessed through the on-line evaluation program, MedHub. A sample evaluation form can be found at www.virtue.ucdenver.edu/residents.

PROGRAM EVALUATION

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

EXAMINATION

1. Department of Anesthesiology Expectations
All Fellows, upon graduation, should successfully pass both written and oral portions of the examinations of the American Board of Anesthesiology on the first attempt.
2. BLS/ACLS
BLS/ACLS certification is required of all residents. Classes for residents are offered through the Anesthesiology department on an as needed basis

Clinical Competency Committee

Every six months, all of the evaluation forms received on each resident during the previous six month period are tabulated and the numerical scores from each category are graphed. In addition, comments made on each resident are summarized and test scores are reviewed. The Clinical Competence Committee meets three times a year (or more often as specific resident needs dictate) to review these evaluation forms. Residents receive a copy of every CCC report.

Twice a year, a Record of Training Report on each fellow is submitted to the American Board of Anesthesiology (ABA) and the ACGME. The information used to complete these reports comes from the recommendations of the Clinical Competence Committee. In addition, the committee advises the Program Director regarding Resident progress, including promotion, remediation, and dismissal.

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Program Evaluation Committee

The PEC performs the following functions:

1. Planning, developing, implementing, and evaluating educational activities of the program
2. Reviewing and making recommendations for revision of competency-based curriculum goals and objectives
3. Addressing areas of non-compliance with ACGME standards
4. Reviews the program every six months using evaluations of Faculty, Residents, and others as reflected in the GME Evaluation & Promotion Policy.

Leave Policy

Leave Policy

In addition to complying with the GME [Leave Policy](#), the Anesthesia Critical Care Medicine program's policies and procedures are:

1. Vacation Leave

Consistent with the policies of the American Board of Anesthesiology and the Graduate Medical Education Committee of the University of Colorado, we as a department have adopted the policy that fellows will be permitted three weeks of vacation per year (15 working days plus whatever weekend time can be wrapped around it.) All vacation/educational leave requests need to be approved by the fellowship director.

DO NOT buy plane tickets or make reservations until vacations are final, otherwise, you may have to forfeit. Vacations officially start on Monday, although every attempt is made to give fellows the preceding weekend off. Before making any plans to leave prior to Monday, check with your Fellowship Director.

2. Educational Leave

Attendance at scientific meetings is optional. Per the American Board of Anesthesiology's Booklet of Information, March 2007, "attendance at scientific meetings, not to exceed 5 working days per year, shall be considered a part of the training program." If a resident/fellow chooses to attend more than 5 days of meetings, it must be taken as vacation time. All meeting time must be approved by the Program Director. The department will fund up to a total of \$2000 of meeting expenses for fellows during the one-year fellowship period. Any expenses in excess will be the resident's responsibility. Appropriate receipts for travel expenses will be required for reimbursement and should be given to your Program Coordinator.

3. Family/Medical Leave

Please refer to the Policy on Family/Medical Leave and Leave of Absence in the GME Leave Policy link above.

4. Military Leave

Legislation exists which requires all employers to permit its employees two weeks per year military leave without loss of any other privileges. We as a department will meet those requirements. However, residents who have a military reserve or National Guard obligation must also understand the current guidelines from the ABA. If the resident feels that while fulfilling military reserve activity he or she will be performing the duties of an anesthesia resident (as an elective rotation at a military hospital), he/she may receive credit for this rotation by petitioning the Credentials Committee of the ABA for prospective approval prior to taking the rotation.

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5. Extended Leave Policy

- A. Absence from the fellowship for more than 15 calendar days in excess of available paid leave will require an extension of training or substitution of non-clinical time (provided that all work hours remain compliant with ACGME guidelines as outlined previously) such that the extra time is equal to the excess leave.
- B. Fellows who are forced to take an extended leave in excess of available paid leave, and up to six calendar months, will be allowed to extend their training in order to complete the required rotations, provided they are in good standing and the leave is approved by the Clinical Competence and Program Evaluation Committees. However, any leave in excess of available paid leave will be unpaid. Requests for a leave of absence longer than six months will be addressed on a case-by-case basis.

Moonlighting Policy

Moonlighting Policy

In addition to complying with the GME **Moonlighting Policy**, the Anesthesia Critical Care Medicine program's policies and procedures are:

Fellows are not required to engage in moonlighting. Fellows interested in moonlighting must complete the GME Moonlighting Approval Form and must receive written permission from the program director prior to engaging in moonlighting activities. Moonlighting is permitted only during non-ICU elective rotations and approval of moonlighting privileges is contingent on maintaining an acceptable level of performance for activities associated with the training program. The program director will monitor the effect of moonlighting activities on the fellow's performance in the program, and reserves the right to withdrawal permission to moonlight based on adverse effects in fellow performance. Moonlighting hours count toward the ACGME 80-hour training rules. **All moonlighting hours must be logged in Med Hub and count toward duty hours.**

Professionalism Policy

Professionalism Policy

All residents/fellows must also abide by the professionalism principles and guidelines as stated by the ACGME program requirements.

Monitoring Resident Professionalism

In addition to complying with the GME **Professionalism Policy**, the training program's policies and procedures are as follows:

The program director and faculty monitor resident professionalism by:

- direct observation of interactions with patients, staff, peers, faculty, and other members of the healthcare team.
- clinical teaching, direct observation, and performance feedback on professionalism from faculty during all ICU rotations.

Professionalism Education

The program provides the following professionalism education to residents:

- Residents and fellows are provided professionalism education via GME New Resident Orientation
- Additional professionalism training will be provided through program didactic conferences, weekly critical care conferences, and department grand rounds.

Quality Improvement/Patient Safety Policy

Quality Improvement and Patient Safety Policy

In addition to complying with the GME **Quality Improvement and Patient Safety Policy**, the Anesthesia Critical Care Medicine program's policies and procedures are:

- Fellows will be responsible for attendance at and participation in the Surgical Trauma ICU's multidisciplinary Comprehensive Unit-based Safety Program (CUSP) designed to establish and promote a culture of safety and to facilitate the development and implementation of quality improvement and patient-safety projects.

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Each fellow is responsible for a quality improvement/patient safety project during his/her residency. The following QI/PS opportunities are underway within the Surgical Trauma ICU:

- Participation in the unit-based CUSP and the hospital ICU Continuous Quality Improvement and Resuscitation Committees
- Patient Satisfaction Surveys tool for the STICU
- Core Measures Recording and Analysis utilizing hospital and unit-based electronic databases
- Scholarly activity resulting in implementation of initiatives to improve patient quality and safety of care

The Program also participates in Quality Improvement/Patient Safety Conferences (e.g., Morbidity and Mortality). The resident, along with faculty and relevant staff, helps to identify the quality improvement issue, develops a process to address the issue and then provides follow-up. The results are then presented to the department.

Some examples of quality improvement projects include: 1) establishing a protocol to minimize delays and interruptions of enteral nutrition in STICU patients 2) improving upon timeliness of antibiotic administration 3) an effort to improve communication and patient satisfaction by providing patients with a tool to identify the members of their health care team.

Supervision Policy

Supervision Policy

In addition to complying with the **GME Supervision Policy**, the Anesthesiology Critical Care Medicine program's policies and procedures are:

Program Supervision Policy

The critical care fellow functions under the supervision of the rotation's faculty attending intensivist or faculty attending physician (on non-ICU rotations), while performing the expectations/responsibilities of the fellowship. Attending supervision is available 24 hours a day, and treatment plans will be formulated and carried out in consultation with the responsible faculty member. Attending call schedules with contact phone and pager numbers are provided on Amion.

The Program Director will ensure that all program policies relating to supervision are distributed to fellows and faculty who supervise fellows. A copy of the program policy on supervision is included in the official Program Manual and provided to each resident upon matriculation into the program.

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To ensure oversight of Resident supervision and graded authority and responsibility, the program utilizes the ACGME classification of supervision (CPR VI.D.3):

Direct Supervision:

The supervising physician is physically present with the Resident and patient.

Indirect Supervision:

With direct supervision immediately available – the supervising physician is physically within the hospital or other site of patient care, and is immediately available to provide Direct Supervision.

With direct supervision available – the supervising physician is not physically present within the hospital or other site of patient care, but is immediately available by means of telephonic and/or electronic modalities, and is available to provide Direct Supervision.

Oversight:

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

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 fellow will be assigned by the Program Director and Faculty members. The Program Director will evaluate each Resident's abilities based on specific criteria, and per specific national standards-based criteria when available.

Faculty formally evaluate fellow performance in all core competencies at the completion of each rotation. The Clinical Competence Committee meets at least twice each year to review overall fellow performance and assist the program director in making decisions regarding progression through the program. Fellows must know the limits of their scope of authority, and the circumstances under which they are permitted to act with conditional independence.

Specific procedures that may be performed without direct supervision, include:

Insertion of peripheral or central venous catheters (including multilumen, introducer, and dialysis catheters)

Insertion of peripheral arterial lines

Insertion of pulmonary artery catheter

Insertion of nasogastric tubes

Lumbar puncture

Tube thoracostomy

Paracentesis

Thoracentesis

Bronchoscopy +/- BAL

Bedside I&D of Wound/Abscess

Suture Uncomplicated Wounds

Cardioversion and Defibrillation

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CPR
Endotracheal Intubation
Cricothyroidotomy in a Life-Threatening Situation

Guidelines for When Residents Must Communicate with the Attending

The fellow must contact the attending intensivist for:

1. A patient who requires initiation or escalation of support for organ failure
2. A patient who is not improving with current interventions
3. A patient who requires emergent input from attending faculty on other services
4. A patient that requires operative intervention
5. Death of a patient
6. Legal threat made by a patient or family member towards a fellow or institution.
7. Injury of fellow during work

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 Anesthesia Critical Care Medicine program's transition of care process that is used is:

A structured handoff is the process of transferring information, authority, and responsibility for patients during transitions of care. Transitions include changes in providers (shift-to-shift, service-to-service) or when a patient is moved from one location or level of service to home or another level of care. Transitions may also be prompted due to caregiver fatigue.

Handoffs will utilize the UCH EPIC Signout Report.

Handoff are required in each of the following circumstances:

- 1) A patient is admitted to the ICU
- 2) A patient is transferred out of the ICU
- 3) A fellow is transitioning care to a 2nd fellow
- 4) A fellow is transitioning care to a faculty intensivist

Transitions of Care will be monitored for effectiveness and to ensure patient safety. Handoffs will be evaluated utilizing a specific MedHub evaluation form regularly during the fellowship.

ICU to OR Transfer Guideline

1. Patients going directly from ICU to OR

- a. All vented patients or patients that are hemodynamically unstable (i.e. on pressors) will go directly from ICU to OR
- b. **For first start cases, anesthesia will bring own monitor** and transport the patient from ICU to OR.
 - i. Nightshift ICU RN will complete prior to end of shift:
 - Surgical Pre-Op Checklist in EPIC
 - SSI Bundle
 - ii. Prior to transport, report will be exchanged from ICU to OR
- c. **For everything but first start cases**, ICU nursing team will transport the patient to the OR doors (red line).
 - i. ICU RN will complete prior to transport:
 - Surgical Pre-Op Checklist in EPIC
 - SSI Bundle
 - ii. One hour prior to planned procedure:
 - OR Charge will call ICU RN with expected transport time
 - ICU will give sign-out to anesthesia and get cisco phone number

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- Anesthesia Tech will bring Propaq to ICU on or before the 1 hr mark
- iii. ICU RN will call anesthesia cisco phone directly prior to leaving the ICU and again at OR doors (red line)
- d. ****If case is emergent/un-planned, follow above procedure as quickly as possible. Do not delay transport to complete Pre-Op Checklist or SSI Bundle****

2. Patients going from ICU to Pre-op

- a. All floor, progressive care, and any ICU patient with stable respiratory and hemodynamic status will go to pre-op. Healthcare provider team may also determine suitability for pre-op.
- b. **For all cases** going to pre-op, **Pre-Op team will bring own monitor** and transport patient from ICU to pre-op
 - i. Nightshift ICU RN will complete prior to end of shift:
 - Surgical Pre-Op Checklist in EPIC
 - SSI Bundle
 - ii. Prior to transport, report will be exchanged from ICU to Pre-Op using Surgical Pre-Op Checklist
- c. **For everything but first start cases:**
 - i. OR charge nurse to call Pre-Op charge nurse 2 hours prior to completion of current OR case
 - ii. Pre-Op nurse then to call ICU RN for exchange of report and to coordinate patient pick-up

Direct OR to ICU Transfer Guideline

1. Identify Patients for Planned ICU Admission → OR Nurse to call ICU Charge Nurse with Request

- a. Elective Cases
 - i. Dept of Surgery OR schedulers to request ICU bed when scheduling surgery
 - ii. ICU team to develop list of elective surgeries with planned ICU admission and post list in OR
 - iii. Discussion of post-operative admission status (floor/stepdown vs. ICU) to be discussed during timeout for cases with planned or possible ICU admission
- b. Emergency Cases
 - i. Surgeon to request ICU bed at time of emergency surgery scheduling request
 - ii. OR charge nurse and requesting surgical team member to discuss ICU admission during request phone call
- c. Unplanned ICU Admission

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- i. At earliest signal, surgical team or anesthesia team to discuss and notify OR nurse of probable need for ICU admission
 - ii. 2nd call to be completed when admission plan finalized (yes/no)
- 2. Communication between OR Nurse and ICU Charge Nurse for Impending Patient Transfer**
 - a. ICU charge nurse will carry Cisco phone (number to be advertised in OR)
 - i. STICU 87400
 - ii. CTICU 83345
 - iii. NeuroICU 83590
 - iv. BurnICU 83510
 - b. 1st call – 1hr out from completion of case – information to include ICU Transfer of Care Document
 - c. 2nd call – 15min out from pending transfer – information to include any updates to patient status or ICU Transfer of Care Document
- 3. Transfer Team**
 - a. Includes 3 team members: OR Nurse, Anesthesia Provider, Surgical Provider
- 4. Transfer of Care Communication (At Bedside in ICU)**
 - a. Primary ICU nurse and intensivist team member to accept patient at bedside
 - i. Primary ICU nurse to call intensivist team at time of arrival of OR transport team
 - b. Primary ICU nurse and intensivist team member to prepare for admission by reading Anesthesia Intraoperative Flow Sheet
 - c. Primary ICU Nurse will identify themselves to transfer team and will focus on transfer communication (charge nurse and additional nurse team members to assist with monitor/vital signs transfer)
 - d. Order of Communication to ICU teams – 1) OR Nurse, 2) Anesthesia, 3) Surgery
 - i. OR nurse communication: skin care (including documentation)
 - ii. Anesthesia and surgery signout as per ICU Admission Handoff Guideline (attached)
- 5. Post-op Orders**
 - a. Use of surgery admissions order sets will remain unchanged
 - b. New “Anesthesia ICU Recovery” order set will be added
 - i. Orders will include post-op narcotics/anti-emetics and vital signs
 - ii. Orders will expire after 4 hours
 - c. Specific orders for hemodynamic agents and other medications will be entered by the ICU team
- 6. ICU Bed Management / Triage Discussion**
 - a. ICU charge nurse to obtain list of planned ICU admissions in am
 - b. ICU charge nurse and attending intensivist to meet after am ICU rounds to discuss bed management

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- i. Discussion to include ranked transfer list and planned location for patient transfer (ICU to floor/stepdown, ICU to ICU)
- ii. Discussion to also include priority ranked admission list
- iii. Final decision on bed management to include ICU charge nurse and attending intensivist
- iv. Attending intensivist (or designee) will discuss triage / bed management with primary surgical teams as needed
- c. Emergency bed management
 - i. If no beds are available in the primary ICU at the time of planned transfer, patients will be transferred to the PACU, except as below:
 1. All patients undergoing cardiopulmonary bypass or mechanical circulatory support procedures will be admitted directly to the CTICU
 2. All patients undergoing liver transplantation will be admitted directly to the STICU
 3. All patients requiring: 1) post-operative mechanical ventilation, 2) active treatment for hemodynamic instability, or 3) transfusion for ongoing hemorrhage, will be held in the OR pending ICU bed availability

ICU Admission Handoff Guideline

OR Nursing Signout

1. Skin Care Examination

Anesthesia Signout

2. Pertinent past medical history
3. Allergies
4. Preoperative vital signs and clinical condition
5. Type of anesthesia, including any regional/nerve block adjuncts
6. Total I/O's (including blood loss and any transfusions)
7. Any airway difficulties
8. Any significant hypotension or hemodynamic instability, including treatment
9. Any ICP related issues (Neurosurgery)
10. Any special concerns for postoperative care (including pain control)
11. A phone number to be reached for further communication

Surgery Signout

1. Surgical procedure
2. Any complications
3. Drains (location and numbering)
4. Planned perioperative antibiotics
5. Postoperative labs to be ordered and followed

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6. Any special concerns/requests for postoperative care
7. Any mobility limitations
8. Diet / nutrition plans
9. Plans for pharmacologic and mechanical DVT/PE prophylaxis
10. A phone number to be reached (R2 resident or greater) for further communication

ICU Handoff and Patient Care Guideline

This guideline is designed to improve the handoff process, ensure superior communication between the surgical, anesthesia, and ICU teams, and provide coordinated care for all critically ill patients.

1. ICU Admissions from the OR

This guideline will be followed for all patients destined for the STICU, CTICU, and NeuroICU, whether admitted directly from the OR or transferred to the PACU prior to admission to the ICU.

For patients transferring directly to the ICU as part of the “Direct OR to ICU Transfer Guideline”, handoff will occur at the bedside with communication simultaneously to the ICU team (resident/APP/fellow) and the ICU nurse.

For patients transferring to the PACU prior to ICU admission, the ICU team should be called directly for the handoff.

The STICU and CTICU teams carry dedicated cell phones. The NeuroICU team is available by pager. These numbers can be used to reach the intensivist teams 24 hours a day, 7 days a week.

STICU - 85916

CTICU - 83253

NeuroICU - 303-266-2353

*** For Spine Cases - Burger/Patel/Kleck/Cain admit to STICU, Witt/Finn admit to NeuroICU**

Surgery Signout

The operating surgeon will communicate the following information:

- a. Surgical procedure
- b. Any complications
- c. Drains (location and numbering)
- d. Planned perioperative antibiotics
- e. Postoperative labs to be ordered and followed
- f. Any special concerns/requests for postoperative care
- g. Any activity / mobility limitations
- h. Diet / nutrition plans
- i. Plans for pharmacologic and mechanical DVT/PE prophylaxis

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- j. A phone number to be reached (R2 resident or greater) for further communication

Anesthesia Signout

An anesthesia provider (resident/APP/attending) will communicate the following information:

- a. Pertinent past medical history
- b. Allergies
- c. Preoperative vital signs and clinical condition
- d. Type of anesthesia, including any regional/nerve block adjuncts
- e. Total I/O's (including blood loss and any transfusions)
- f. Any airway difficulties
- g. Any significant hypotension or hemodynamic instability, including treatment
- h. Any ICP related issues (Neurosurgery)
- i. Any special concerns for postoperative care (including pain control)
- j. A phone number to be reached for further communication

After handoff completion and post-op/ICU admission orders by the anesthesia and surgical teams, the ICU team will assume all order writing responsibilities according to ICU guidelines. This includes all care decisions during PACU admission prior to ICU transfer. PACU nursing team members have been instructed to direct all communications to the ICU team.

2. ICU Admissions from the Floor or ED

A modified version of the above surgical signout must be communicated for all patients admitted to the ICU service. This includes patients transferring to the ICU from the floor, emergency department, or other care location.

3. Transfers / Discharges from the ICU to the Floor or Step-Down Unit

At time of transfer, an ICU resident or midlevel provider will call the surgical team for signout. This communication should include the following elements to ensure effective handoff of ICU patients.

- a. Details of initial ICU admission – including pertinent details from surgery and anesthesia signout (as above)
- b. Overview of ICU course – including discussion of any significant events or changes in acuity level and any procedures performed

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- c. Systems-based review of problem list, current treatments and medications, and active plans for patient care discussed on morning ICU rounds
- d. Other pertinent details with regard to pending orders, tests, and follow-up

*For STICU - as per the Single Order Writing Service Guideline, discharge and transfer orders will be written by the ICU team.

ACGME Specific Program Requirements

The program will incorporate the current Accreditation Council for Graduate Medical Education program requirements within this Program Manual annually.

<http://www.acgme.org/Specialties/Overview/pfcetid/6#>