

**UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL
ANESTHESIOLOGY RESIDENCY PROGRAM**

GOALS AND OBJECTIVES

**CRITICAL CARE MEDICINE (CCM) ADVANCED/JUNIOR FELLOW ROTATION FOR CA-3
RESIDENTS**

INTRODUCTION

The CCM Junior Fellow rotation is one month rotation in the surgical intensive care units (SICU) at the University campus. The first two weeks will be as advanced resident in the Lakeside 2 ICU (trauma/neuro ICU) and the remainder of the month as a junior fellow in 3 ICU.

This rotation expands upon previous rotations in the PGY-1 through PGY-3 years, and is a culmination of the progressive responsibility attained, and the experience gained, in the previous rotations. The primary goal of the two weeks in the Trauma/Neuro ICU is to provide the resident an environment to acquire the knowledge, skills, experience, and judgment necessary to care for this particular subset of critically ill patients under the direction of intensivists from the Departments of Anesthesiology, Surgery and Neurology. The primary goal of the junior fellow rotation is to allow the resident, already with 3.5 months of critical care training, to act more in the decision-making and consultant role, as would a fellow, with minimal guidance.

All residents will be expected to demonstrate competence in the six ACGME general competencies.

COMPETENCIES

I. PATIENT CARE/COMMUNICATION AND INTERPERSONAL SKILLS

- **Cognitive Skills: The junior fellow is expected to deliver an advanced care above and beyond what is expected of more junior resident and at a level closer to a fellow.**
 - a. Improve the skills to provide optimal methodology to work up and deliver care to critically ill patients.
 - b. Communicate effectively with and demonstrate empathy and respectful behavior when interacting with patients and their families.
 - c. Ensure relevant and accurate information about their patients.
 - d. Oversee diagnostic and therapeutic plans for their patients based on history, physical examination and laboratory data tempered with evidence-based medicine, clinical judgment and patient preference.
 - e. Ensure management plans are implemented.
 - f. Counsel and educate patients and their families.

- **Technical Skills: The junior fellow is expected to have an advanced level of technical skills and should be able to supervise the more junior residents and the affiliated practitioners in the following areas:**
 - a. Insertion of and instruction in the insertion of intra-arterial (radial, femoral, axillary) and central venous catheters (internal jugular, subclavian, femoral).
 - b. Insertion of and the instruction in the insertion of pulmonary artery catheters (internal jugular, subclavian and femoral).
 - c. Emergency airway management.

- d. Insertion of chest tubes (optional).
- e. Percutaneous tracheostomies (optional).

II. MEDICAL KNOWLEDGE

The junior fellow is expected to have more thorough and detailed knowledge of critical care topics and should be independently able to work on achieving this goal.

Demonstrate mastery of the following by the end of the rotation (other faculty at their discretion may cover other topics):

- 1. **Physiology:**
 - a. Neurology
 - b. Respiratory
 - c. Cardiovascular
 - d. Endocrine
 - e. Hematological
- 2. **Pharmacology:**
 - a. Antiarrhythmics
 - b. Antihypertensives
 - c. Inotropes and vasopressors
 - d. Antimicrobials
 - e. Antithrombotics and anticoagulants
 - f. Sedatives, analgesics and neuromuscular blockers
- 3. **Clinical Knowledge and Management:**
 - a. Respiratory
 - i. Mechanical Ventilation
 - ii. Management of acute lung injury and the acute respiratory distress syndrome
 - iii. Weaning from mechanical ventilation
 - b. Cardiovascular
 - i. Hemodynamic monitoring
 - ii. Oxygen transport
 - iii. Use of inotropes and vasopressors
 - c. Pharmacokinetics and pharmacodynamics
 - d. Management of intracranial hypertension
 - e. Management of renal insufficiency
 - f. Liver failure
 - i. Acute
 - ii. Chronic
 - iii. Care of the liver transplant patient
 - g. Massive bleeding and transfusion
 - h. Nutrition
 - i. Infectious diseases
 - i. Microbiology
 - ii. Antimicrobials
 - j. Shock
 - i. Evaluation
 - ii. Management

III. PRACTICE-BASED LEARNING

The junior fellow is expected to relate more to the literature and use EBM in his or her patient care.

By appraising and assimilating scientific evidence, residents must be able to investigate, evaluate and improve their patient care practices. The resident will be able to:

- Locate, appraise and assimilate evidence from scientific studies that are relevant to their patients' health problems;

- Use evidence-based medicine methodology to ascertain the utility and effectiveness of certain diagnostic tests and therapeutic strategies in the care of their patients;
- Use information technology to manage information, access on-line medical information and support their own education;
- Assist in the teaching of CA-2 residents, medical students and allied health personnel.
- Provide presentations on appropriate subjects during weekly multidisciplinary Critical Care Conferences

IV. COMMUNICATION AND INTERPERSONAL SKILLS

The junior fellow is expected to advance his or her communication skills to a higher level and be able to efficiently present his or her patients to the staff, consultants and family members. The junior fellow should be able to actively participate in family meetings.

Residents must be able to demonstrate interpersonal and communication skills that result in effective exchange of information and provide a framework for the development of a cohesive critical care team. Residents are expected to:

- Create and sustain a therapeutic and ethically sound relationship with their patients
- Use effective communication techniques to:
 - a. Provide efficient and effective presentations during daily rounds
 - b. Write timely, complete and legible progress and procedure notes
 - c. Ensure effective dissemination of information to consultants and allied health care provider;
 - d. Provide understandable updates to family members
 - e. Discuss end-of-life issues with families as a member of the CCM team

V. PROFESSIONALISM

The junior fellow is expected to present an advance level of professional behavior and be a role model for the rest of the team members.

Residents must demonstrate a commitment to completing their professional responsibilities, adhering to ethical principles and being sensitive to a diverse patient population. Residents are expected to demonstrate:

- Respect, compassion and integrity
- Responsiveness to the needs of patients and society that supercedes self-interest
- Accountability to patients, society and the profession
- Commitment to excellence
- On-going professional development
- Commitment of ethical principles:
 - Provision/withholding of care
 - Patient confidentiality
 - Informed consent
 - Business practices
- Sensitivity and responsiveness to patients' age, culture, gender and disabilities.

VI. SYSTEMS-BASED PRACTICE

The junior fellow is expected to assess the patient and the ICU environment globally and be able to relate his or her patient care to the overall system performance.

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value. Residents are expected to:

- Understand how their patient care and other professional practices affect the patient's family, institution and the larger society and how these elements of the system affect their own practice;
- Practice cost-effective health care and resource allocation that does not compromise quality of care;
- Advocate for quality patient care and safety;
- Know how to partner with health care managers and providers to assess, co-ordinate and improve their patients health care and follow up care, and know how these activities can affect system performance.

VII. Expectations

- A. Arrival at 6 am and participation in the morning sign-out and departure after the afternoon round.
- B. Clinical Work: Duty hours and call schedules are delineated in the resident ICU handbook. The 80-hour workweek and 24 + 6 work day must be adhered without exception.
- C. Didactic activities: Formal lectures will take place every day from 7AM – 8 AM. Topics include:
 - Basics of mechanical ventilation
 - Management of the patient with acute lung injury and the acute respiratory distress syndrome
 - Weaning from mechanical ventilation
 - Hemodynamic monitoring
 - Vasopressors and inotropes
 - Nutritional support
 - Acute renal failure
 - Sepsis and septic shock
 - Antibiotics
 - Pharmacology
 - Brain death and organ donation; donation after cardiac death
 - Acid-base balance
 - Management of increased intracranial pressure
 - Endocrine: steroids, glucose control
 - Fluid therapy and transfusion
 - Care of the transplant patient
- D. Multidisciplinary critical conferences, held at 4 PM on Wednesdays (except the third of the month):
 - Case Conference
 - SICU M & M (Morbidity and Mortality)
 - SICU Quality Assurance (QA)
 - Guest lecturers
 - Journal Club
- E. Directed Reading:
 - Irwin and Rippe's Intensive Care Medicine, 5th Edition, 2003
 - Irwin and Rippe's Manual of Intensive Care Medicine, 3rd Edition, 2002
 - Chapters and articles emailed to you.
- G. Evaluation and Feedback:

- Monthly evaluation of residents by attendings via E*Value
 - a. Individual evaluations by faculty and composite evaluations by surgical faculty;
 - b. Attention paid to evaluation of Competencies
- 360 Degree evaluations by selected nurses and allied health care providers in SICU
- Evaluation by resident of each attending
- Evaluation by resident of the rotation
- Work hour documentation.

Faculty:

- Stephen Heard, M.D.
- Khaldoun Faris, M.D.
- J. Matthias Walz, M.D.
- Alan Orquiola, M.D.
- Raimondas Matulionis, M.D.
- Antonio Aponte, M.D.
- Nicholas Watson, M.D.
- Theofilos Matheos, M.D.
- Maxim Zayaruzny, M.D.
- Timothy Emhoff, MD
- Ulises Torres, MD
- NamHeui Kim, MD
- Bruce Simon, MD
- Wiley Hall, MD
- Susanne Muehlschlegel, MD
- Raphael Carandang, MD

Required Didactic Reading:

There are 2 types of reading assignments that the CA-3 resident is expected to complete during the SICU month as a junior fellow.

- Journal Articles. After much debate, these articles have been carefully selected as the best topics and the best articles, please find them attached. Print or save these somewhere (e.g. as a new email folder) and have them ready for your SICU month.
- Book chapters. These are from the Manual of Intensive Care Medicine, 5th edition, by Irwin and Rippe (Lisa Nicholson will have a copy for you to borrow for the month in case you don't already own this). Please take the initiative and go to Lisa to borrow this book prior to your SICU rotation.

The chapters are:

- Ch 1 - Airway
- Ch 2 - CVP
- Ch 3 - Arterial lines
- Ch 4 - PACs
- Ch 5 - Cardioversion and defibrillation
- Ch 25 - CPR
- Ch 26 - Pharmacologic management of hypotension
- Ch 31 - Evaluation of HTN
- Ch 38 - SVTs
- Ch 42 - Physiologic approach to managing respiratory failure

Ch 48 - VTE

Ch 53 - Mechanical ventilation: invasive and noninvasive

Ch 54 - Mechanical ventilation: discontinuation

Ch 61 - Metabolic acidosis and metabolic alkalosis

Ch 62 - Disorders of plasma Na and K

Ch 65 - Fever in the intensive care patient



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acute liver
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failure.pdf (987...



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sepsis.pdf (736 ...



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dynamic monitoring



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hemorrhage 2.pdf ..



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