

MICU Rotation Curriculum
Internal Medicine Residency Program, University of California Irvine
Long Beach Memorial Medical Center
Updated June 2014

Rotation Introduction: The purpose of the MICU rotation is to teach residents about all aspects of critical illness including pathophysiology, diagnosis, treatment and the psychosocial issues in caring for critically ill patients. The **Core Values** of the service are: *patient welfare, empathy, problem-based accountability, team work, communication and respect.*

The MICU Clinical Teaching Service (CTS) consists of one Senior MICU Resident, four Interns from Internal Medicine, Family Practice or Emergency Programs, a Pulmonary Fellow who does NOT take overnight call and the MICU Teaching attendings. The RN, Respiratory Therapist and Pharmacist are other key team players. The CTS is available to care for the sickest medical patients in the hospital, to stabilize non-teaching service patients in the MICU, to respond to calls from the Rapid Response Team when needed and to respond to code blue and code stroke emergencies in the hospital.

Intern and Resident Responsibilities:

Rotation Logistics:

- Admissions to the CTS occur 24 hours a day.
- To assure smooth transitions in care, the Senior Resident is to maintain constant communication with the Doctor of the Day in the Emergency Department regarding admission availability and patients who are likely candidates in the ER. Keep the updated MICU team availability posted on the white board in the ED. The Senior Resident coming on for evening call should institute this communication verbally or in person soon after the shift begins.
- Daytime admissions are taken by the interns at the discretion of the senior resident
- All interns are expected to arrive at least by 6:30 AM and meet with the post-call intern to get formal sign-out on cross-cover events from the previous night. The MICU Senior will redistribute patients to the Interns as needed.
- The MICU resident will sign-out to the overnight call resident nightly and will receive sign-out in the morning.
- The MICU Senior along with the interns in the team, will meet the post-call Resident and Intern at 6:30 AM to receive sign-out and presentations on new overnight admissions. Bedside sign out is encouraged. The post-call Intern **MUST** leave the hospital by 10:00 am.
- It is important that the MICU admitting team try to accommodate all requests for admission.
- **Team Caps:** The MICU team cap is 16 for all patients. Each Intern will follow no more than 5 patients at one time. During a call period (24 hours on weekends and 13.5 hours on weekdays (5:00 PM – 6:30 AM), the Intern-Senior on-call team cannot admit more than 7 patients. The on-call Intern can admit no more than 5 patients per 24 hour period. If 7 admissions occur and a single intern has admitted 5 patients, the Senior Resident will admit the extra 2 patients following the same procedures as an

- Intern. The disposition of patients above the Intern's cap will be the responsibility of the MICU team the next day. The on-call Senior Resident cannot admit patients over the CAP of 16. In the case of overnight CAP, the name of the Intensivist who is next in line for an unassigned patient should be given to the ER physician, so that he/she can make the call to the Intensivist. With the permission of the Teaching Attending, the care of a patient who is stable and awaiting placement may be transferred to the private attending, but only in cases where the patient is truly chronic and awaiting patients. This process should not be done solely to keep the service open.
- **Temporary Cap:** Occasionally the on-call team will receive many very ill patients in a short period of time and be unable to attend to all of the patients. If the Senior Resident on-call ever feels that he/she is unable to safely manage the patient load, he/she may temporarily close the service to admissions until the patients can be safely managed. In this case:
 1. The name of the Intensivist who is next in line for an unassigned patient should be given to the ER physician, so that he/she can make the call to the Intensivist to take care of any new admission;
 2. Additionally, the senior resident can call in the attending on call to help care for the unstable patient(s) that he/she does not feel comfortable managing.
 - Admissions to the MICU teaching service occur in three ways:
 1. Critically ill hospitalized patients: the CTS will be asked by a medical staff member to evaluate one of their inpatients. The Resident and the patient's physician will jointly decide if transfer to the MICU is warranted, if the patient will be on the CTS and if so, which of the Teaching Critical Care Specialists should be consulted.
 2. Unassigned patients: A patient who does not have a primary care physician on the medical staff is an "unassigned patient." If the ER physician deems that such a patient needs MICU care, the patient will be "assigned" to a designated Primary Care Group. However, in the MICU, the CTS provides the care, under the direction of a Teaching Critical Care Specialists.
 - The CTS Residents may be asked to provide vascular access or to do other procedures for patients who are not on the teaching service. **Placing central lines and/or other procedures is highly encouraged on non-teaching patients, only if there is time to do so.** If you feel overwhelmed or are taking care of a critically ill patient and are not able to do the line at that time, you may politely tell the nurse that you will try at a later time because you are swamped. Otherwise, please go ahead and do the procedure, and document it in EPIC.
 - When a procedure needs to be done and the resident is either not signed-off on that procedure, or is uncomfortable with the procedure, or is signed-off on the procedure, but is unable to successfully complete it, the resident is to call the intensivist or noctensivist as appropriate.
 - Sterile procedures need to be used for every procedure done & full sterile attire must be worn by the intern/resident doing the procedure AND the intern/resident assisting. Don't forget a cap, mask & eye protection.
 - STAR (Stat Assessment and Response) team: this is a rapid response team designed to respond to a "pre-code" situation in an effort to improve patient care & reduce the number of codes. The team includes an RN, RT & pharmacist. If the attending for the

patient cannot be reached, housestaff may be called to take care of the patient, write orders and initiate ICU transfer if appropriate.

- If there are any issues with the teaching service or noctensivist coverage, contact Dr. Tanios on his cell phone (this includes being unable to reach the ICU attendings at night) and report the case to the program director.

Documentation and Communication

- PGY1s are to complete the initial H & P as soon as possible and no later than before the morning rounds.
- Dictated Critical Care Consult Notes are to be performed by the Senior MICU Resident and should be dictated or typed within a few hours after the initial patient visit. This consult note should include all the elements of a complete History and PE and should be problem oriented in format.
- It is essential that the resident indicate in the dictation which teaching intensivist is caring for the patient.
- PGY1s are to write problem-oriented progress and transfer notes
- All orders and progress notes should be dated and have the intern/resident's full pager number and last name printed under the signature.
- Notes should document "Care provided under the supervision of Dr. ____."
- PGY1s are to dictate problem-oriented death summaries and sign within 14 days
- PGY1s are responsible to maintain problem oriented sign outs.
- PGY1s are responsible for maintaining an accurate patient problem list
- Prior to transferring patients from the service, Interns **must verbally communicate with the physician accepting care** of the patient.
- **Residents must request consultations directly from the consulting physician.**
- Orders placed should be discussed with the RN so he or she is aware orders have been placed. This also facilitates communication between the RN and housestaff about the plan for the patient.
- Residents or interns must contact intensivist and the primary care physician for code changes or major changes in the patient's condition.
- House staff must discuss procedure with the intensivist prior to performing the procedure in non-emergent settings
- Interns should place blue "Housestaff on Duty" sheets outside each of their patient's rooms by 7:30AM each morning to facilitate communication with other members of the health care team.
- Do not use abbreviations!

Pulmonary Fellow Responsibilities

- Assist and teach the MICU team with patient care, using a problem-based format
- Attend and participate in resident morning sign-out rounds at 7:00 AM daily.
- Teach a noon conference once or twice a block, as needed and prepare for MICU EBM Journal Club
- Teach residents the core procedures and assist them in reaching and documenting competence in these by the end of the block.

- Fellows will be emailed a link to assess the Interns and Senior resident in central line placement and arterial line placement. Fellows will also be asked to evaluate a Sepsis case for each Intern during the last week of the block, using the Sepsis Competency Assessment form.
- Provide immediate backup support and care as needed in concert with the attending.
- Provide feedback on performance to the MICU team
- Help with coverage for MICU resident as needed and during illness and intern absence
- Perform Scheduled Pulmonary Exercise Testing and read with the Attending.

Faculty Responsibilities

- Assure cases assigned to the CTS are of educational value
- Be available to the CTS for patient care, daily teaching, communication and emergency patient evaluations.
- Include Residents in all patient care decisions
- Allow Residents to write all orders and to perform procedures with appropriate supervision
- Encourage nursing staff to call CTS for all patient care issues
- Treat Residents with patience, respect and gratitude
- Set expectations for high standards of patient care and both written and verbal communication
- Review documentation to assure that it is organized around problems and that decision-making is sound
- Provide feedback frequently and in a constructive manner
- Abide by the teaching service policies and admit and care for unassigned patients alone when the CTS is capped or when patients must be transferred off the service to allow for acute admissions
- Participate in ongoing educational activities including case discussions, rounds, journal clubs, conferences and help to identify cases for scholarly presentations at professional meetings.
- Communicate directly with the resident regarding new patients/consults if a new patient is being assigned to the CTS.
- Complete evaluations of the residents and fellows

Recommended References:

- Marino: The ICU Book
- Washington Manual
- Hall, Schmidt and Wood: Principles of Critical Care

Resources for patient care

- Social Services
- Discharge Planner
- Compassionate Care Team

Purpose – to provide support for patients, families, nurses, physicians and other health professionals in dealing with care issues in the ICU/end-of-life issues. Team members include – RN, SW, chaplain, case manager. Services – family conferences, crisis intervention, social services, counseling, pastoral care, emotional/spiritual needs, bereavement consult, post-expiration protocol, referrals, legal/risk management. Contacts: Marcia Atkinson, RN x 37158. Social worker: x 30017. Chaplain: x 31457. Can also write an order in the chart for a compassionate care team consult.

- Computer Assistance – extension 39450
- Memorial Hospice program. Team consists of physicians, RN, CNAs, CSW, home health aide, PT, speech therapist, dietician, spiritual counselor, volunteers. Contact x 30910 or x 34663.

Learning Goals and Objectives

- **Patient Care**

Overview - Residents are expected to learn and practice patient care in the MICU that is compassionate, appropriate, and effective. They are expected to become familiar with: mechanical ventilation and weaning, pulmonary artery catheterization, the placement of central and arterial lines, airway management, and end of life (EOL) discussions

Objectives - Residents should demonstrate competency in the following:

1. Central line placement
2. Arterial line placement
3. Intubation
4. Hemodynamic monitoring
5. NG Tube Placement
6. ACLS Protocols
7. Thoracentesis

- **Medical Knowledge**

Overview - Residents are expected to know established and evolving medical knowledge in critical care: 1) the physiology of normal lung mechanics, renal function and acid-base system; 2) pathophysiology, diagnosis and management of common conditions in critical care. Residents are expected to utilize the Memorial Care best practices and order sets whenever appropriate to their patients

Objectives - Residents should have a thorough grasp of the medical knowledge to care for patients with the following conditions:

- a. Normal Lung Mechanics
- b. Mechanical Ventilation
- c. O2 delivery devices
- d. Acid Base
- e. Electrolyte Disturbances
- f. Acute Renal Failure
- g. Pneumothorax
- h. Sepsis
- i. Shock

- j. Multiple Organ Dysfunction Syndrome
- k. Oncologic Emergencies
- l. Diabetic Ketoacidosis
- m. COPD and Asthma
- n. Respiratory Failure
- o. ARDS
- p. Community Acquired Pneumonia
- q. Hospital Acquired Pneumonia
- r. Pulmonary Embolus
- s. Acute CHF
- t. Acute GI Bleed
- u. Ischemic CVA
- v. Hemorrhagic CVA
- w. Meningitis

- **Communication**

Overview - Residents are expected to communicate in a way that results in effective information exchange and provides collaboration with patients, their families and all members of the healthcare team. They should maintain sensitivity to ethnic diversity. Residents are expected to: learn to provide effective consultation to other physicians and health care professionals, interact with consultants and referring physicians in a respectful, appropriate manner and to maintain comprehensive, timely, and legible medical records.

Objectives - Residents should demonstrate competency in the following:

- a. End of Life Discussion
- b. Determine Code Status
- c. Informed Consent
- d. Problem Oriented Medical Record Keeping
- e. Do No Use Abbreviations or Dose Designations

- **Professionalism**

Overview: Residents are expected to carry out professional responsibilities, adhere to ethical principles, and maintain sensitivity with respect to gender, sexual orientation and diverse patient populations.

Objectives: Residents should demonstrate competency in the following:

1. Educational activities necessary for lifelong learning
2. Understand and respect patient/family confidentiality and informed consent
3. Respect a patient's right to privacy and maintain confidentiality
4. Give constructive feedback to members of the health care team to improve problems encountered in the workplace
5. Receive feedback openly and identify a personal improvement plan
6. Adhere to the appropriate dress code for a Critical Care physician
7. Understand the basic ethical principles of patient care (patient autonomy, do no harm and social justice) and apply these to common ethical dilemmas encountered in the MICU: end of life decisions

- **Practice Based Learning and Improvement**

Overview: All physicians who want to deliver high quality and up to date medical care have a commitment to learn for a lifetime and apply new knowledge in the practice of medicine. This process begins during residency by assessing the effectiveness of the health care that residents deliver and learning to critically appraise evidence about diagnostic and treatment effectiveness.

Objectives: During the MICU block, residents are expected to:

1. Reflect on their own knowledge, behaviors and mistakes in providing care for critically ill patients and set appropriate learning and care improvement goals.
2. Apply the EPB Learning Cycle to issues relevant to pulmonary/critical care.

- **Systems Based Improvement**

Overview - The quality and safety of health care depends on how well the systems of health care delivery function. All physicians should participate in the improvement of the quality and safety of the delivery system and to identify new models of health care delivery as necessary.

Objectives – Residents should learn:

- a. How health care is delivered in the ICU and work within the system to improve patient care quality.
- b. To use the Memorial Care best practices and order sets whenever appropriate to their patients.
- c. Collaborate with other members of the health care team, especially the quality improvement and compassionate care teams to assist patients and their families in dealing effectively with their health problems and to improve systematic processes of care