

# Surgical Critical Care

## 1. OVERVIEW

A four-week required rotation on the surgical critical care service during PGY-1 and PGY-2 years, caring for general surgical, trauma, neurosurgical and surgical subspecialty patients in the SICU.

## 2. GOALS

The educational goal of the surgical critical care rotation is to provide the resident with a concentrated experience working in the intensive care unit. This exposure allows the resident to gain experience in common clinical presentations in the acutely ill patient and to develop clinical skills in diagnosis, immediate and continuing care of a variety of patients in this setting, and to gain experience in the procedural skills unique to this setting and patients.

## 3. OBJECTIVES

a. **Patient Care:** By the completion of this rotation, residents will:

- i. Recognize illness sufficient to warrant hospitalization in an ICU
- ii. Understand the indications, risks, and alternatives of the following critical care procedures, under direct supervision:
  1. Advanced cardiac life support
  2. Arterial punctures for arterial blood gas
  3. Mechanical ventilation (basic)
  4. Placement of arterial and central venous lines
  5. Placement of nasogastric and orogastric tube
  6. Placement of endotracheal tube (optional)
  7. Placement of pulmonary artery catheter (optional)
  8. Placement of chest tubes (optional)
  9. Placement of percutaneous tracheostomy tube
  10. Placement of percutaneous gastrostomy tube for feeding
- iii. Be able to properly interpret the following tests
  1. Hemodynamic monitoring
  2. Pulse oximetry
  3. Telemetry monitoring
  4. Arterial blood gases
  5. Chest radiographs
- iv. Understand the indications, contraindications and risks of the following procedures and be able to properly order them when indicated and to discuss the implications of the findings of each
  1. Bronchoscopy
  2. Computed tomography, magnetic resonance imaging of chest, abdomen, head
  3. Percutaneous dilatational tracheostomy
  4. Percutaneous endoscopic gastrostomy tube placement

- b. **Medical Knowledge:** By the completion of this rotation, residents will:
  - i. Demonstrate knowledge, to the satisfaction of the ICU attendings, in the evaluation and management of conditions such as:
    - 1. Shock, all types
    - 2. Acute respiratory failure
    - 3. Acute renal failure and Electrolyte abnormalities
    - 4. Acute hemorrhage
    - 5. Acute brain injury
    - 6. Multiple trauma
    - 7. Acute abdominal catastrophes
    - 8. Nutritional deficiencies
- c. **Practice-based learning:** Residents are expected to
  - i. Be able to evaluate own performance,
  - ii. Incorporate feedback into improvement activities;
  - iii. Effectively use technology to manage information for patient care and self-improvement.
- d. **Interpersonal and communication skills:** Residents are expected to:
  - i. Create and sustain a therapeutic and ethically sound relationship with patients and primary surgical team.
  - ii. Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
  - iii. Work effectively with others as a member of the ICU team.
- e. **Professionalism:** Residents are expected to demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. Residents are expected to demonstrate:
  - i. Respect, compassion, and integrity; a responsiveness to the needs of patients that supercedes self-interest; accountability to patients; and a commitment to excellence and on-going professional development.
  - ii. A commitment to ethical principles pertaining to confidentiality of patient information and informed consent.
  - iii. Sensitivity and responsiveness to patients' culture, age, gender, and disabilities.
- f. **Systems-based practice:** Residents are expected to:
  - i. Demonstrate understanding of how their patient care and other professional practices affect other health care professionals and the hospital.
  - ii. Practice cost-effective health care and demonstrate knowledge of resource allocation that does not compromise quality of care

- iii. Advocate for quality patient care and assist patients and families in dealing with the complexities of the system.

4. **CLINICAL EXPERIENCE**

The Resident works under the supervision of the SICU certified general/trauma surgeons in caring for the trauma and general surgical critical care patients. Daily rounds are conducted by the SICU attending. The bulk of instruction occurs during daily patient care rounds with the attending intensivist. Residents are provided a format for presenting patient information to be used in the medical record. The presentations adhere to this organizational scheme, which entails detailed assessment of each organ system. At the conclusion of each presentation, residents are expected to evaluate the patient using a comprehensive problem-oriented strategy and develop an assessment and plan for the patient for the day.

5. **DIDACTIC COMPONENT**

Residents are expected to obtain a general ICU manual for use and reading while on the ICU service. Following a case-based reading approach, residents are expected to utilize resources for self-education which include general reference textbooks kept in the ICU, specialty reference texts available through the ICU and in the medical library, bound medical journals in the medical library, and on-line searching capabilities maintained in the ICU and throughout the institution. Informal lectures are held daily, as time permits, by the medical and/or surgical critical care staff. Attendance is mandatory. Critical care conferences are held on the fourth Thursday at noon of every month and the SICU residents are also expected to participate in teaching conferences on Wednesday where protected education time is provided. In addition, the SICU resident is also expected to participate in the daily critical care lectures series by Dr. Spinello at 11:00 am.

6. **RESPONSIBILITIES**

a. **Decision making**

Residents are expected to, based upon information gathered and the clinical situation, make decisions for patient care. These are then reviewed with the supervising trauma or general surgery chief resident and the surgical critical care attending. Recommendations for care on the general surgery critical care patient are reviewed with the general surgery service and chief of that service before implementation

b. **Planning**

Planning for patient care and recommendations are done with the senior resident during daily rounds and with the critical care attending daily on patient rounds.

c. **Direct patient care**

Residents are expected to make critical decisions on patient care in conjunction with the supervising trauma or general surgery chief residents and review them daily with the surgical critical care attending.

d. **Record keeping**

Daily critical care notes are written by the critical care resident and reviewed by the surgical intensivist. Appropriate documentation of procedures occurs at the time of the procedures or daily as is required.

e. **Order writing**

Orders are written by the surgical critical care resident after discussion with the supervising trauma or general surgery chief residents and reviewed by the surgical intensivist.

f. **Ongoing patient management**

Management of the trauma critical care patients is the responsibility of the supervising trauma resident with the critical care intern. The general surgery ICU patient management remains the responsibility of the primary surgical service and the surgical attending with the surgical critical care resident, and with oversight by the surgical intensivist. When patients are discharged from the unit to a floor bed, ongoing patient management occurs with either the trauma service or the general surgery service.

**7. SUPERVISION**

Surgical residents are directly and indirectly supervised at all times in the ICU by a senior surgical resident on the trauma service or one of the two general surgery services and by a surgical critical care certified surgical attending. Procedures are all directly supervised either by an attending or a resident who has been certified by his/her department to be competent to perform and teach that procedure.

**8. SCHEDULE**

Resident is expected to be in the ICU from 6:30 am to 6 pm, Monday through Friday, excluding holidays. Morning rounds occur in the morning, as scheduled by the individual surgical critical care attendings. Residents should pre-round on patients at least one hour prior, depending upon the number and complexity of the patients. It is expected that the surgical critical care resident will round with the primary team twice a day.

**9. DISTRIBUTION OF GOALS AND OBJECTIVES**

Goals and objectives of this rotation are distributed at the beginning of the residency year to each resident. Copies are sent by email to each resident assigned to this rotation prior to the beginning of the rotation. Additional copies can be obtained in the surgery residency coordinator's office. The goals and objectives can also be assessed via the KMC surgery website:

[www.kmcsurgery.org](http://www.kmcsurgery.org)

**10. METHODS OF IMPLEMENTATION**

Goals and objectives are implemented through one on one precepting, direct resident and staff supervision, faculty and resident role modeling, case-based readings, daily rounds, and spontaneous and planned didactic sessions.

**11. FUNDAMENTAL CLINICAL SKILLS**

Critically ill patients offer residents a vast opportunity for developing the fundamental clinical skills of obtaining a complete medical history, performing a complete physical exam, evaluating data, collating information, defining patient's problems, generating differential diagnoses, and developing a rational plan for patient care, and implementing therapy based on the etiology, pathogenesis, and clinical manifestations of various diseases.

**12. SENIOR RESIDENT CONTACT**

Residents on the SICU service will work closely with senior level surgical residents from the trauma or general surgery services and have frequent communication throughout the day.

**13. VACATION**

Vacation cannot be taken during the Critical care rotation

**14. CALL RESPONSIBILITIES**

None at present