

SURIGICAL INTENSIVE CARE UNIT GOALS AND OBJECTIVES (PGY1, 2 and 3)

GOALS

Through rotation on the Surgical Intensive Care Unit (SICU), residents shall attain the following goals:

I. Patient Care

Residents will function in the inpatient SICU setting, evaluating perioperative surgical and traumatically injured patients. This will sometimes entail preoperative optimization, management of polytrauma and complex postoperative care of critically ill patients. While the WVU SICU is not a closed unit, the SICU residents serve as the primary providers for these patients, coordinating care with the primary team and associated consultants.

Resident responsibilities (PGY1-3):

1. New patient admission evaluation and H&P
2. Recognition and assessment of critical illness
3. Vascular access acquisition
4. POCUS
5. Interpretation chest radiographs
6. Interpretation abdominal radiographs
7. Acute respiratory failure
 - a) Oxygen therapy and Non-Invasive Ventilation
 - b) Mechanical Ventilation
 - c) Interpretation Arterial Blood Gas
 - d) Describe basic physiology of gas exchange at the alveolar level, understand dead space ventilation, be able to describe normal SpO₂, PaO₂, PaCO₂ values that indicate hypoxia and hypo/hyperventilation.
8. Manage resuscitation of patients in shock:
 - a) use of crystalloid/Colloid Fluids
 - b) Blood and blood products / TEG interpretation
 - c) Vasopressors & Inotropes
 - d) Resuscitation of Undifferentiated Shock: Outline the core concept of shock - inadequate organ perfusion / DO₂. Recognize common findings of undifferentiated shock using tools such as SIRS criteria and qSOFA. Describe ABC primary assessment of undifferentiated shock patient. Describe initial diagnostic approach including use of H&P, ABG, POCUS, EKG, and CXR
 - e) Describe different etiologies of **hemorrhagic shock**. Describe methods of initial management of life-threatening extremity hemorrhage. Describe methods to diagnose source of life-threatening torso hemorrhage. Review the role of TXA and whole blood in initial resuscitation of actively hemorrhaging patient.
 - f) Blunt cardiac injury/NSTEMI/**cardiogenic shock**: Describe typical physiology consistent with cardiogenic shock. List mechanisms of injury that may result in blunt cardiac injury. Describe diagnostics appropriate to diagnose blunt cardiac injury and Acute Coronary Syndrome (Unstable Angina/STEMI/NSTEMI. List initial therapies appropriate for Acute Coronary Syndrome

- g) Sepsis/**septic shock**: Describe the importance of source control. Review and be able to summarize key recommendations of SCCM Surviving Sepsis Guidelines
 - h) **Neurogenic shock**/spinal cord injury: List causes for spinal cord injury resulting in para/quadruplegia. Describe clinical / physiologic findings of neurogenic shock.
9. Glucose management
 10. Acute kidney injury: describe causes of renal ischemia and diagnostic criteria of RIFLE / KDIGO
 11. PUD and VTE prophylaxis
 12. Electrolyte derangements: Recognize abnormal values for common electrolytes. Describe clinical syndromes consistent with symptomatic electrolyte abnormalities. Describe routine replacement of electrolytes including use of RN-driven electrolyte replacement protocol. Describe treatment of symptomatic hypocalcemia and hyperkalemia.
 13. Management of TBI / Intracranial Hypertension
 14. Dysrhythmia Management
 15. Parenteral and Enteral Nutrition
 16. Sedation and Analgesia
 17. End-of-life care (DCD, Brain Death, CMO)

II. Medical Knowledge

Resident fund of knowledge as it relates to surgical critical care will be expanded through a variety means, some of which are structured and others of which require independent initiative from the residents who are rotating on the service. These include: 1) Conferences, 2) SICU M&M 3) Assigned readings 4) TWIS quizzes

1. Conferences

- A) Residents are expected to attend the critical care and trauma education program (CCTEP) conferences every Tuesday and Thursday led by multidisciplinary ICU faculty and staff.
- B) Residents are expected to attend and present at monthly SICU M&M, focusing on patient care, opportunities for improvement and systemic issues that affect patient outcomes.

2. Assigned Readings: Residents will cover various SCC topics, among others, as part of their assigned weekly reading curriculum through the program at large. The SCORE curriculum is the chosen curriculum for the general surgery residency. SICU faculty will all participate in leading didactic discussion(s) daily on rounds and as it relates to patient care throughout the day.

3. TWIS Quizzes: Residents are expected to complete TWIS quizzes that are outlined in the program curriculum. Areas of deficiency as defined by their performance on the TWIS quizzes should serve as the focus for future study plans.

III. Practice-based Learning

Residents are expected to engage in critical self-review as it relates to the patients they care for

1. Morbidity & Mortality Conference –
 - Residents are expected to critique their performance and their personal practice outcomes and discussion should center on an evidence-based discussion of complications and their avoidance (PGY1)
 - To be able to evaluate complications, causes and outcomes by participating in ICU Morbidity Conference (PGY1)
 - Keep of log of patients for the M&M conference and distribute to the junior/intern residents (PGY2-3)
 - Provide guidance to junior residents on preparation of SICU M&M presentations. Lead discussions during SICU M&M regarding system processes that can be improved (PGY2-3)
2. Residents shall keep logs of their critical care cases and bedside procedures and track their operative proficiency as gauged by whether they assisted or were the surgeon junior or senior or teaching assistant (All PGY).
3. Residents shall participate in education discussions during rounds (PGY1) and Identify 'teachable moments' during rounds and lead discussions that link core critical care concepts with specific patient scenarios (PGY2-3).
4. Residents shall familiarize themselves with evidence based guidelines related to disease prevention, patient safety and quality (SCIP measures, DVT prophylaxis guidelines, screening colonoscopy guidelines, etc) as well as hospital specific matters related to safety and quality (NSQIP data, QITI data, pharmacy formularies for hospital acquired infections, isolation precaution measures) (All PGY).

IV. Interpersonal and Communication Skills

1. Utilize verbal and non-verbal communication skills to effectively share patient care information with other health care providers (PGY1)
2. Model effective communication with patients, families, and other healthcare providers. Strive to resolved conflict related to ineffective communication (PGY2-3)
3. Provide relevant demographic and clinical information during request for consultation (PGY1)
4. Intervene and resolve barriers related to obtaining timely consultation for ICU patient (PGY2-3)
5. Document SICU H&P and daily progress note using Electronic Medical Record (EMR) (PGY1-3)
6. Contact Medical Examiner in event of patient death and provide relevant clinical information (PGY1-3)
7. Communicate with bedside nurses to address patient needs and obtain information regarding interval events (PGY1)
8. Demonstrate and model effective communication with members of health-care team (PGY2-3)
9. Provide daily updates to patients and families using lay terms and answer questions (PGY1)
10. Supervise and clarify questions from family during daily updates. Provide guidance to families during end-of-life discussions and determination of treatment limitations. Facilitate effective communication with CORE during transition to DCD or brain death (PGY2-3)

V. Professionalism

The SICU rotation offers many opportunities for residents to hone their skills as they relate to professionalism.

1. Residents shall maintain high ethical standards in dealing with patients, family members, patient data, and other members of the healthcare team (PGY1-3)
2. Residents shall display the highest levels of professionalism through verbal and non-verbal and all behavior (PGY1-3)
3. Residents shall demonstrate patient care sensitive to age, gender and culture of patients and other members of the healthcare team (PGY1-3)
4. Residents shall demonstrate a commitment to the continuity of care of a patient within the confines of the duty-hour restrictions (PGY1-3)
5. Attend CCTEP Didactics on Tuesdays and Thursdays (PGY1-2)
6. Complete FCCS curriculum prior to beginning ICU rotation (PGY1)

VI. Systems-based practice

The SICU rotation provides residents with inpatient opportunities to grow within the systems based practice core competency based on interaction with providers at outside institutions and multiple consultants

1. Identify patient outcomes that were influenced by policies, procedures, and processes which could be modified (PGY1-3)
2. Recognize the benefit to patient care of interprofessional rounding teams (PGY1-3)
3. Understand the roles of respiratory therapists, dieticians, and clinical pharmacists (PGY1-3)
4. Describe the application of living wills, POST (POLST), and advanced directives (PGY1-3)
5. Utilize existing CCTI clinical practice guidelines (CPG) and protocols (PGY1-3)
6. Balance patient cost and burden to health care delivery system with benefit to patient care when considering orders for diagnostic studies (PGY1-3)
7. Identify, organize, and convey relevant information during handoff between shift and upon return of patients from OR (PGY1-3)