GOALS AND OBJECTIVES

Goals

- Gain the ability to manage critically ill surgical patients in an intensive care unit independently
- Take a leadership role in clinically assessing critically ill patients, determining the use of a wide range of diagnostic procedures, interpreting the data collected, and determining the appropriate therapy
- Educate medical students, nurses and residents

Objectives by Core Competency

**Patient Care**

Non-technical skills

- Advanced management of Ventilators in a critically ill patient population
- Management of Continuous Hemodialysis machines in acute renal failure
- Advanced hemodynamic Monitoring and Management of Sepsis and SIRS Physiology

Technical skills

- Advanced fiberoptic bronchoscopy
- Advanced Ultrasound and transthoracic echo skills
- Teaching central Venous Line placement with ultrasound guidance
- Teaching arterial Line placement in difficult patient population
- Teaching endotracheal Intubation in critical ill patient population
- Participation in bedside tracheostomies, chest tubes, and PEG placements

**Medical Knowledge**

- Use co-morbid conditions to modify predictions on prognosis in ICU
- Understand advanced concepts of cardiovascular physiology in critically ill patients
- Discuss the advanced concepts of hemodynamic monitoring as it applies to critically ill surgical patients
• Understand pressure-based hemodynamic monitoring, including the significance of measuring arterial blood pressure, the physiological determinants of central venous pressures and cardiac output, and the function of all applicable monitoring equipment
• Discuss the most current examples of alternative forms of hemodynamic monitoring
• Explain the significance and possible ways to monitor organ perfusion and fluid-responsiveness using best available data
• Understand advanced pulmonary pathophysiology, with major emphasis on gas exchange and respiratory mechanics, as they can be affected by acute (e.g., ARDS) and chronic (e.g., COPD) respiratory disease
• Understand the advanced concepts of respiratory monitoring as it applies to critically ill surgical patients; including the bedside measurement of airway resistant, respiratory compliance, and intrinsic PEEP
• Understand advanced tenants of mechanical ventilation
• Discuss the fundamentals of acid-base physiology
• Understand the basic physiological concept and clinical relevance to critically ill surgical patients of other major organ failures, including acute kidney injury, acute brain dysfunction (delirium), coagulopathy and hypercoagulable states, and endocrine/metabolic abnormalities such as hyperglycemia and diabetes
• Understand the prognostic implication, diagnosis and treatment of systemic infections (sepsis, septic shock) in the surgical patient
• Determine an appropriate threshold and technique for transfusion of blood products
• Appreciate the broad knowledge base and responsibility required of the physician in the perioperative care of the surgical patients. This includes demonstrating a positive attitude towards additional learning, and embracing the concept of lifelong learning well beyond the basis of the safe practice of anesthesia

**Practice-based Learning and Improvement**

• Lead discussions of the application of best evidence to patient care
• Understand bioengineering and computers as applied to modern critical care practice
• Teach junior residents to conduct literature searches of pubmed and cocharane databases to elucidate best evidence

**Interpersonal and Communication Skills**

• Aid in the leadership of team discussions and rounds
• Teach junior residents to present patients succinctly and comprehensively
• Participate in family meetings and co-lead as appropriate
• Communicate with attending staff and fellows all important changes in patient status and shape plans for patient care
• Facilitate communication with surgical teams
**Professionalism**

- Be a leader and role model for medical students and junior residents on service
- Assist other residents in data collection, interpretation, and patient care
- Promote team cohesiveness and support morale
- Treat patients and families with respect and dignity
- Teach junior residents to recognize and address ethical challenges in the management of critically ill surgical patients
- Exemplify the concept of lifelong learning

**Systems-based Practice**

- Teach other residents the principles of utilization and outcome analysis
- Apply system based practice and management bundles in critically ill patients
- Teach junior residents to apply VAP, Line infection and VAP protocols to systematically reduce infections
- Discuss opportunities for further improvement of systems based practice

**Evaluation**

The Anesthesia Critical Care Medicine Faculty will evaluate the residents based on the objective criteria and goals delineated above in the New Innovations residency management software.