

## **SURG8021**

### Surgical Critical Care AI

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#### **Course Goals**

1. Develop the attitude, skills, and knowledge to be able to recognize the impact of the global and local health care system and its impact on patient outcomes.
  2. Develop the attitude, skills, and knowledge to be prepared for an internship in surgical critical care.
  3. Develop the attitude, skills, and knowledge to communicate complex medical and personal information with patients, families, and all members of the health care team.
  4. Develop the attitude, skills, and knowledge to independently collect the necessary data, interpret relevant findings and test results, and formulate an appropriate management plan at the level of an intern in general surgery.
  5. Develop the attitudes and skills necessary for self-reflection that leads to improvement in practice.
  6. Develop the knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the skills necessary to apply this knowledge to patient care in the intensive care unit setting.
  7. Develop the attitude, skills, and knowledge necessary to use evidence-based medicine in clinical decision-making in the intensive care unit.
  8. Develop the attitude, skills, and knowledge necessary to exemplify the highest level of professionalism both in typical daily activities of a surgery intern and during times of stress and high patient volumes.
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#### **Clinical Learning Objectives**

##### **Clinical**

###### *Interpersonal and Communication Skills*

1. Deliver difficult news regarding diagnosis and prognosis in a respectful manner.
2. Recognize when to engage an interpreter.
3. Effectively and collaboratively communicate with team members, colleagues, and other health care providers, even if they are above their level of training.
4. Effectively utilize the electronic health record system to obtain and document information in an accurate and concise manner.
5. Effectively communicate with non-team members that are on different services and may be outside of a hospital setting.
6. Recognize the importance of verbal and non-verbal cues.
7. Explain diagnosis and treatment plans to patients and families for selected common conditions in a manner that they can understand.

###### *Interprofessional Collaboration*

1. Interact respectfully with ALL members of the health care team, consultants and fellow physician providers.
2. Demonstrate an understanding of the importance of interdisciplinary team members, consultants and health care resources and how they impact the care and outcomes of a patient's hospital stay.

###### *Medical Knowledge for Practice*

1. Exhibit knowledge of relevant biomedical, socioeconomic, and behavioral principles underlying common health conditions encountered in the intensive care unit.
2. Exhibit knowledge of human development throughout the lifespan and its impact on health and disease.
3. Exhibit knowledge of medical ethics and human values and their implications for provision of safe, equitable and patient-centered care.
4. Exhibit knowledge of principles of pharmacology and how to evaluate options for safe, rational, and optimal application of drug therapy.
5. Exhibit knowledge of principles of biostatistics and epidemiology, as used to evaluate and interpret disease risk, etiology, diagnosis, prognosis, treatment strategies, resources, disease prevention and health promotion in

patients and populations.

6. Exhibit knowledge of common clinical tests, laboratory examinations, diagnostic imaging and therapeutic medical procedures.
7. Demonstrate curiosity, objectivity, and use of scientific reasoning in the acquisition of knowledge and its application to patient care. Students must demonstrate the ability to reason deductively in solving clinical problems.
8. Apply medical knowledge in a meaningful way to positively affect patient care, outcomes, and clinical diagnostic reasoning.
9. Exhibit knowledge of principles of preventive, acute, chronic, rehabilitative, and end-of-life care necessary for provision of medical care across the lifespan.

#### *Patient Care*

1. Demonstrate an ability to “Sign Out” or “Pass-Off” ICU patients to the incoming team post-call (witnessed by either Chief Resident, Acute Care Surgery Fellow, or ICU Attending).
2. Exemplify proficiency in specified skills as outlined in the syllabus’s list of “Relevant Skills.”
3. Interact with relevant surgical and medical consults to form an appropriate medical plan.
4. Receive and send information to a patient’s PCP or other relevant healthcare providers, including demonstrate an understanding and ability to apply successful transitions of care.
5. Obtain relevant and sensitive historical information from patients and families.
6. Develop a relevant, prioritized problem list in a patient with a complicated/extensive problem list.
7. Interpret relevant findings, order tests and diagnostic imaging to appropriately generate a differential diagnosis with a ranking of the most likely diagnoses.
8. Demonstrate the ability to multi-task, as exemplified by an ability to prioritize between different patient’s needs.
9. Demonstrate the ability to admit and round on a given number of patients as clearly specified by general surgery service.
10. Gather essential and accurate information about patients and their conditions through history taking, physical examination and review of the medical records.
11. Assist with percutaneous tracheostomy.
12. Perform diagnostic ultrasound procedures.

#### *Personal and Professional Development*

1. Identify strengths and biases and limits in one’s knowledge and performance, with special emphasis on being critical of one’s own performance by identifying personal errors, strengths, and challenges and develop plans for learning and improvement.
2. Exemplify improvement in practice that incorporates feedback from patients and colleagues, including but not limited to; knowledge base, ability to communicate, efficiency, and responsibility for all aspects of patient care.
3. Recognize the need for help and ask appropriately for assistance.
4. Demonstrate self-directed learning with the aim of lifelong personal and professional growth.
5. Recognize and address personal, psychological, and physical limitations that may affect professional performance.
6. Deliver patient care as a functional physician.

#### *Practice-Based Learning and Improvement*

1. Justify treatment plans with systematic approach and include as much relevant emerging biomedical knowledge as is practical for the treatment plan.
2. Exemplify the ability to use evidence-based medicine and statistical concepts, such as likelihood ratios to make appropriate and meaningful clinical decisions.

#### *Professionalism*

1. Maintain a professional attitude with challenging patients, colleagues and other staff members.

### *Systems-Based Practice*

1. Exemplify an understanding of resource utilization by tracking the cost of a patient's hospital stay, analyzing the cost effectiveness of a patient's care, and identifying areas where the team could have made alternative and accurate, cost effective decisions.
2. Recognize the need for ordering initial and follow-up tests based on clinically indicated parameters.
3. Work effectively in various health care delivery settings including inpatient and out-patient settings.
4. Recognize barriers and threats to quality patient care.

### **Observed Advanced Communication Project**

#### *Interpersonal and Communication Skills*

1. Conduct a challenging communication scenario, such as breaking bad news, negotiating end of life and goals of care discussions, or actively participating in challenging patient/family meetings.

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### **Didactic Learning Objectives**

#### **Mid-Point Feedback**

1. Discuss an example utilizing feedback; the circumstances regarding the situation; how the feedback and outcome changed behavior; and self-reflection surrounding the feedback.

#### **Quality Improvement Presentation**

1. Identify a medical error that is secondary to a systems error, clearly identify the error, evaluate where the system failed and offer a solution to prevent the error from recurring.
2. Incorporate consideration of cost awareness and risk-benefit analysis in patient care.
3. Demonstrate the ability to identify system errors and contribute to potential system solutions.
4. Identify challenging situations and develop a quality improvement (QI) plan to rectify these situations or issues.