SURGICAL CRITICAL CARE ENTRUSTABLE PROFESSIONAL ACTIVITIES CLINICAL COMPETENCY COMMITTEE GUIDE

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This document is intended to be a resource for surgical critical care program Clinical Competency Committees (CCCs) to utilize when reviewing trainee performance with the aid of Entrustable Professional Activities (EPAs) data. Each EPA phase of care has been linked to the related ACGME Surgery Milestones and can be found in the included tables.

MILESTONE KEY:
PC - Patient Care
MK - Medical Knowledge
SBP - Systems-Based Practice
PBLI - Practice-Based Learning and Improvement
PROF - Professionalism
ICS - Interpersonal and Communication Skills

For a listing of ACGME surgery milestones, please see this document. (https://www.acgme.org/globalassets/pdfs/milestones/surgicalcriticalcaremilestones.pdf)

CCC Guide
Evaluation and Management of a Patient with Hemorrhage

Description of the Activity:

Hemorrhage is a common problem encountered in critical care units. All surgical intensivists should be able to assess sources and severity of hemorrhage, resuscitate to optimize physiology, and identify interventions/involve consultants to control the source of hemorrhage as the condition warrants.

In Scope:

- Coagulopathy
- Gastrointestinal hemorrhage
- Hemorrhage in patients on anticoagulant or antiplatelet therapy
- Massive transfusion (ratios, products), including complications
- Obstetric hemorrhage
- Occult sources of hemorrhage
- Traumatic hemorrhage
- Use of diagnostic modalities for source determination and therapeutic intervention
- Use of laboratory testing to evaluate coagulopathy

Out of Scope:

- None

Level	Resuscitation	Ongoing Management	Transition of Care
1 Limited Participation	PC3 L1 PC5 L1 PC10 L1 MK1 L1 MK3 L1 ICS2 L1	PC3 L1 PC5 L1 MK1 L1 MK3 L1 ICS2 L1	MK1 L1 MK3 L1 SBP2 L1 ICS2 L1
2 Direct Supervision	PC3 L2 PC5 L2 PC10 L2 MK1 L2 MK3 L2 ICS2 L2	PC3 L2 PC5 L2 MK1 L2 MK3 L2 ICS2 L2	MK1 L2 MK3 L2 SBP2 L2 ICS2 L2
3 Indirect Supervision	PC3 L3 PC5 L3 PC10 L3 MK1 L3 MK3 L3 ICS2 L3	PC3 L3 PC5 L3 MK1 L3 MK3 L3 ICS2 L3	MK1 L3 MK3 L3 SBP2 L3 ICS2 L3
4 Practice Ready	PC3 L4 PC5 L4 PC10 L4 MK1 L4 MK3 L4 ICS2 L4	PC3 L4 PC5 L4 MK1 L4 MK3 L4 ICS2 L4	MK1 L4 MK3 L4 SBP2 L4 ICS2 L4

Description of the Activity:

All surgical intensivists should be able to identify patients who can benefit from the inclusion of palliative care principles in the overall care plan. Surgical intensivists should identify the goals of patient care in a shared decision-making model. When applicable, the intensivist should address pain, anxiety, and discomfort in a patient-centered manner. The intensivist should recognize the physiologic changes associated with the end of life. While surgical intensivists should provide primary palliative care, they should also recognize the need to involve specialized care teams, such as palliative medicine, the hospital ethics committee, and hospice care.

In Scope:

- Critical illness, with particular attention to patients with:
  - Advanced liver and renal disease
  - Advanced surgical malignancies
  - Hemorrhage
  - Older adult trauma and surgical disease
  - Sepsis
  - Severe burns
  - Severe polytrauma
  - Severe surgical comorbidities
  - Spinal cord injury
  - Stroke and hemorrhagic brain conditions
  - Traumatic and anoxic brain injury
  - Vascular disease

Out of Scope:

- None

Level	Resuscitation	Ongoing Management	Transition of Care
1 Limited Participation	MK2 L1 SBP2 L1 PROF 1 L1 PROF3 L1 ICS1 L1	MK2 L1 SBP2 L1 PROF1 L1 P1 L1 ICS1 L1 ICS2 L1	MK2 L1 PROF1 L1 PROF3 L1 ICS1 L1 ICS2 L1
2 Direct Supervision	MK2 L2 SBP2 L2 PROF1 L2 PROF3 L2 ICS1 L2	MK2 L2 SBP2 L2 PROF1 L2 P1 L2 ICS1 L2 ICS2 L2	MK2 L2 PROF2 L2 PROF3 L2 ICS1 L2 ICS2 L2
3 Indirect Supervision	MK2 L3 SBP2 L3 PROF1 L3 PROF3 L3 ICS1 L3	MK2 L3 SBP2 L3 PROF1 L3 P1 L3 ICS1 L3 ICS2 L3	MK2 L3 PROF1 L3 PROD3 L3 ICS1 L3 ICS2 L3
4 Practice Ready	MK2 L4 SBP2 L4 PROF1 L4 PROF3 L4 ICS1 L4	MK2 L4 SBP2 L4 PROF1 L4 P1 L4 ICS1 L4 ICS2 L4	MK2 L4 PROF1 L4 PROD3 L4 ICS1 L4 ICS2 L4

Description of the Activity:

Cardiac emergencies and urgencies and acute decompensation of chronic cardiac conditions are commonly encountered by surgical intensivists. Intensivists should be able to identify and manage these commonly encountered cardiac conditions. Critical care physicians should consider which interventions are necessary for management, perform diagnostic procedures, and coordinate care with specialist consultants.

In Scope:

- Acute coronary syndrome
- Acute decompensated heart failure
- Arrhythmias
- Cardiogenic shock
- Continuous hemodynamic monitoring
- Endpoints of resuscitation
- Mechanical support
- POCUS
- Tamponade
- Vasopressor/inotropic support

Out of Scope:

- None

Level	Resuscitation	Ongoing Management	Transition of Care
1 Limited Participation	PC3 L1 PC6 L1 PC10 L1	PC6 L1 MK1 L1 MK3 L1 PBLI1 L1	SBP2 L1 PBLI1 L1
2 Direct Supervision	PC3 L2 PC6 L2 PC10 L2	PC6 L2 MK1 L2 MK3 L2 PBLI1 L2	SBP2 L2 PBLI1 L2
3 Indirect Supervision	PC3 L3 PC6 L3 PC10 L3	PC6 L3 MK1 L3 MK3 L3 PBLI1 L3	SBP2 L3 PBLI1 L3
4 Practice Ready	PC3 L4 PC6 L4 PC10 L4	PC6 L4 MK1 L4 MK3 L4 PBLI1 L4	SBP2 L4 PBLI1 L4

Description of the Activity:

Patients with acute or exacerbation of chronic liver dysfunction and hepatic failure are often among the most complex patients to manage. Surgical intensivists must work with a multidisciplinary team of hepatologists, gastroenterologists, interventional radiologists, and transplant surgeons to coordinate the best care for these complex patients.

In Scope:

- Acute liver injury/ischemic hepatitis
- Cirrhosis
  - Portal hypertension
- Cirrhotic bleeding
  - Coagulopathy
  - TIPS indications
  - Variceal bleeding
- Decompensated liver failure
- Fulminant acute liver failure
  - Ingestion/toxins
- Hepatic encephalopathy
- Hepatorenal syndrome
- Paracentesis

Out of Scope:

- None

Level	Resuscitation	Ongoing Management	Transition of Care
1 Limited Participation	PC8 L1 MK1 L1 ICS2 L1	PC2 L1 PC4 L1 PC7 L1 PC8 L1 MK1 L1	PC8 L1 MK2 L1 ICS2 L1
2 Direct Supervision	PC8 L2 MK1 L2 ICS2 L2	PC2 L2 PC4 L2 PC7 L2 PC8 L2 MK1 L2	PC8 L2 MK2 L2 ICS2 L2
3 Indirect Supervision	PC8 L3 MK1 L3 ICS2 L3	PC2 L3 PC4 L3 PC7 L3 PC8 L3 MK1 L3	PC8 L3 MK2 L3 ICS2 L3
4 Practice Ready	PC8 L4 MK1 L4 ICS2 L4	PC2 L4 PC4 L4 PC7 L4 PC8 L4 MK1 L4	PC8 L4 MK2 L4 ICS2 L4

Description of the Activity:

Sepsis is a common cause of shock in critically ill patients. All surgical intensivists should be able to care for patients with life-threatening infections, including rapid recognition, initiation of treatment, and tailoring of therapy. They must also identify the need for source control with appropriate consultation when necessary.

In Scope:

- Antibiotic stewardship
- Diagnostic maneuvers
- Differential diagnosis
- Evaluation of source
- Resuscitation
- Resuscitative procedures
- Sepsis
- Septic shock
- Source control (bedside procedures)

Special populations:

- Chronic infection versus colonization
- Extremes of age
- History of multidrug resistance
- Immunocompromised

Out of Scope:

- None

Level	Resuscitation	Ongoing Management	Transition of Care
1 Limited Participation	PC3 L1 PC9 L1 MK1 L1 MK3 L1 ICS3 L1	PC3 L1 PC4 L1 PC9 L1 MK1 L1 MK3 L1	PC3 L1 PC4 L1 PC9 L1 MK3 L1
2 Direct Supervision	PC3 L2 PC9 L2 MK1 L2 MK3 L2 ICS3 L	PC3 L2 PC4 L2 MK1 L2 MK3 L2	PC3 L2 PC4 L2 PC9 L2 MK3 L2
3 Indirect Supervision	PC3 L3 PC9 L3 MK1 L3 MK3 L3 ICS3 L3	PC3 L3 PC4 L3 PC9 L3 MK1 L3 MK3 L3	PC3 L3 PC4 L3 PC9 L3 MK3 L3
4 Practice Ready	PC3 L4 PC9 L4 MK3 L4 ICS3 L4	PC3 L4 PC4 L4 PC9 L4 MK1 L4 MK3 L4	PC3 L4 PC4 L4 PC9 L4 MK3 L4

Description of the Activity:

Respiratory failure is one of the most commonly encountered diagnoses in the critically ill. All surgical intensivists must be able to identify and manage mild to severe acute respiratory failure with its diverse causes and presentations. Regardless of clinical setting and resource availability, intensivists should feel comfortable performing a range of invasive and noninvasive interventions tailored to the management of injured and noninjured adults and children based on their scope of practice.

In Scope:

- Acute respiratory distress syndrome (ARDS)
- Aspiration
- Asthma exacerbation
- Bronchoscopy
- Chronic obstructive pulmonary disease (COPD)
- Cricothyroidotomy
- Flail chest
- Pulmonary embolism
- Pulmonary hypertension
- Smoke inhalation
- Spinal cord injury
- Tension hemothorax/pneumothorax
- Thoracentesis/chest tube
- Tracheobronchial injury
- Tracheostomy (excludes procedure, given alternative specialties)
- Intubation
- Noninvasive mechanical ventilation
- Obstructive sleep apnea (OSA)/obesity hypoventilation syndrome (OHS)
- Pleural effusion
- Pneumonia
- Pulmonary contusion
- Transfusion-associated circulatory overload (TACO)/transfusion-related acute lung injury (TRALI)
- Ventilator management, including advanced techniques

Out of Scope:

- None

Level	Resuscitation	Ongoing Management	Transition of Care
1 Limited Participation	PC1 L1 PC5 L1 PC10 L1 MK3 L1	PC1 L1 PC9 L1 PC10 L1 MK1 L1 MK3 L1	PC1 L1 MK3 L1 ICS1 L1 ICS3 L1
2 Direct Supervision	PC1 L2 PC5 L2 PC10 L2 MK3 L2	PC1 L2 PC9 L2 PC10 L2 MK1 L2 MK3 L2	PC1 L2 PC9 L2 MK3 L2 ICS1 L2 ICS3 L2
3 Indirect Supervision	PC1 L3 PC5 L3 PC10 L3 MK3 L3	PC1 L3 PC9 L3 PC10 L3 MK1 L3 MK3 L3	PC1 L3 PC9 L3 MK3 L3 ICS1 L3 ICS3 L3
4 Practice Ready	PC1 L4 PC5 L4 PC10 L4 MK3 L4 ICS3 L4	PC1 L4 PC9 L4 PC10 L4 MK1 L4 MK3 L4	PC1 L4 PC9 L4 MK3 L4 ICS1 L4 ICS3 L4

Description of the Activity:

All surgical intensivists should be able to perform focused and timely care for critically ill patients with neurologic dysfunction. Surgical intensivists are often called to diagnose and manage neurologic dysfunction, considering a broad differential diagnosis and focusing it appropriately based on clinical context.

In Scope:

- Anoxic brain injury
- Coma
- Death by neurological criteria
- Delirium
- Infectious neurological disease
- Metabolic encephalopathy
- Neurogenic shock and resuscitation
- Organ donor
- Polyneuropathy of critical illness
- Spinal cord injury
- Status epilepticus
- Stroke and intracranial hemorrhage
- Traumatic brain injury

Out of Scope:

- None

Level	Resuscitation	Ongoing Management	Transition of Care
1 Limited Participation	PC7 L1 MK1 L1 MK2 L1 PROF1 L1 ICS2 L1	PC7 L1 MK1 L1 MK2 L1 PBLI1 L1 PROF1 L1 ICS2 L1	MK2 L1 PBLI1 L1 ICS1 L1 ICS2 L1 PROF1 L1
2 Direct Supervision	PC7 L2 MK1 L2 MK2 L2 PROF1 L2 ICS2 L2	PC7 L2 MK1 L2 MK2 L2 PBLI1 L2 PROF1 L2 ICS2 L	MK2 L2 PBLI1 L2 ICS1 L2 ICS2 L2 PROF1 L2
3 Indirect Supervision	PC7 L3 MK1 L3 MK2 L3 PROF1 L3 ICS2 L3	PC7 L3 MK1 L3 MK2 L3 PBLI1 L3 PROF1 L3 ICS2 L3	MK2 L3 PBLI1 L3 ICS1 L3 ICS2 L3 PROF1 L3
4 Practice Ready	PC7 L4 MK1 L4 MK2 L4 PROF1 L4 ICS2 L4	PC7 L4 MK1 L4 MK2 L4 PBLI1 L4 PROF1 L4 ICS2 L4	MK2 L4 PBLI1 L4 ICS1 L4 ICS2 L4 PROF1 L4

Description of the Activity:

Renal failure is kidney dysfunction that manifests as a disruption in the body's fluid, electrolyte, or acid-base equilibrium. All surgical intensivists must be able to diagnose, classify, and treat renal failure along its entire spectrum of grade and acuity.

In Scope:

- Acute renal failure
- Chronic renal failure in the critically ill patient
- Fundamentals of RRT and modality selection
- Goals of care alignment
- Multisystem organ failure
- Urgent dialysis access

Out of Scope:

- None

Level	Resuscitation	Ongoing Management	Transition of Care
1 Limited Participation	PC4 L1 PC10 L1 MK2 L1 PBLI1 L1	PC4 L1 MK1 L1 MK3 L1 PBLI1 L1	MK2 L1 ICS2 L1
2 Direct Supervision	PC4 L2 PC10 L2 MK2 L2 PBLI1 L2	PC4 L2 MK1 L2 MK3 L2 PBLI1 L2	MK2 L2 ICS2 L2
3 Indirect Supervision	PC4 L3 PC10 L3 MK2 L3 PBLI1 L3	PC4 L3 MK1 L3 MK3 L3 PBLI1 L3	MK2 L3 ICS2 L3
4 Practice Ready	PC4 L4 PC10 L4 MK2 L4 PBLI1 L4	PC4 L4 MK1 L4 MK3 L4 PBLI1 L4	MK2 L4 ICS2 L4

Description of the Activity:

Surgical intensivists must recognize the importance of nutrition in critically ill patients and understand, implement, and manage individualized nutritional strategies for each patient.

In Scope:

- Critically ill patients with obesity
- Critically ill patients at risk for malnutrition
- Selection of nutritional support and mode of administration
  - Enteral
  - Parenteral
- Assessment of adequacy of nutritional support
- Critically ill patients with electrolyte, vitamin and fluid abnormalities
- Critically ill patients with comorbidities impacting nutritional support (e.g. renal dysfunction, hepatic dysfunction)

Out of Scope:

- None

Level	Resuscitation	Ongoing Management	Transition of Care
1 Limited Participation	PC2 L1 PC8 L1 MK1 L1 PBLI1 L1 ICS1 L1	PC2 L1 MK1 L1 MK3 L1	PC2 L1 MK1 L1 MK3 L1 SBP2 L1 ICS1 L1
2 Direct Supervision	PC2 L2 PC8 L2 MK1 L2 PBLI1 L2 ICS1 L2	PC2 L2 MK1 L2 MK3 L2	PC2 L2 MK1 L2 MK3 L2 SBP2 L2 ICS1 L2
3 Indirect Supervision	PC2 L3 PC8 L3 MK1 L3 PBLI1 L3 ICS1 L3	PC2 L3 MK1 L3 MK3 L3	PC2 L3 MK1 L3 MK3 L3 SBP2 L3 ICS1 L3
4 Practice Ready	PC2 L4 PC8 L4 MK1 L4 PBLI1 L4 ICS1 L4	PC2 L4 MK1 L4 MK3 L4	PC2 L4 MK1 L4 MK3 L4 SBP2 L4 ICS1 L4

Description of the Activity:

Surgical intensivists are commonly called on to care for critically ill children. The surgical intensivist should be able to assess, diagnose, and manage critically ill pediatric patients and perform the common critical care procedures necessary for their treatment and monitoring.

In Scope:

- Airway management of infants and children
- Cardiac arrest in children
- Child physical abuse and neglect
- Pediatric burns
- Pediatric extracorporeal membrane oxygenation (ECMO) evaluation
- Pediatric patients as defined by individual system guidelines and protocols
- Pediatric trauma
- Pediatric-specific infections
- Resuscitation in pediatric shock
- Sequelae of life-threatening congenital conditions

Out of Scope:

- None

Level	Resuscitation	Ongoing Management	Transition of Care
1 Limited Participation	PC3 L1 PC5 L1 PC10 L1 MK1 L1 MK3 L1 ICS1 L1 ICS2 L1	PC2 L1 PC5 L1 PC10 L1 MK1 L1 MK3 L1 ICS1 L1 ICS2 L1	MK1 L1 MK3 L1 ICS1 L1 ICS2 L1
2 Direct Supervision	PC3 L2 PC5 L2 PC10 L2 MK1 L2 MK3 L2 ICS1 L2 ICS2 L2	PC2 L2 PC5 L2 PC10 L2 MK1 L2 MK3 L2 ICS1 L2 ICS2 L2	MK1 L2 MK3 L2 ICS1 L2 ICS2 L2
3 Indirect Supervision	PC3 L3 PC5 L3 PC10 L3 MK1 L3 MK3 L3 ICS1 L3 ICS2 L3	PC2 L3 PC5 L3 PC10 L3 MK1 L3 MK3 L3 ICS1 L3 ICS2 L3	MK1 L3 MK3 L3 ICS1 L3 ICS2 L3
4 Practice Ready	PC3 L4 PC5 L4 PC10 L4 MK1 L4 MK3 L4 ICS1 L4 ICS2 L4	PC2 L4 PC5 L4 PC10 L4 MK1 L4 MK3 L4 ICS1 L4 ICS2 L4	MK1 L4 MK3 L4 ICS1 L4 ICS2 L4

Description of the Activity:

Surgical intensivists should be able to recognize, manage, and tailor treatment paradigms to the unique considerations of geriatric and nongeriatric critically ill patients with frailty. Surgical intensivists should account for the physiological changes of aging, frailty, contributions of comorbid conditions, polypharmacy, baseline cognitive and functional status, and advance directives in the critical care management of this patient population.

In Scope:

- Critically ill older adults (65 years of age or older)
- Critically ill adults who are frail or at risk for frailty

Out of Scope:

- None

Level	Resuscitation	Ongoing Management	Transition of Care
1 Limited Participation	PC3 L1 MK1 L1 PROF1 L1 SBP2 L1	PC3 L1 PC6 L1 PC7 L1 MK1 L1 ICS1 L1	MK1 L1 SBP2 L1 ICS1 L1
2 Direct Supervision	PC3 L2 MK1 L2 PROF1 L2 SBP2 L2	PC3 L2 PC6 L2 PC7 L2 MK1 L2 ICS1 L2	MK1 L2 SBP2 L2 ICS1 L2
3 Indirect Supervision	PC3 L3 MK1 L3 PROF1 L3 SBP2 L3	PC3 L3 PC6 L3 PC7 L3 MK1 L3 ICS1 L3	MK1 L3 SBP2 L3 ICS1 L3
4 Practice Ready	PC3 L4 MK1 L4 PROF1 L4 SBP2 L4	PC3 L4 PC6 L4 PC7 L4 MK1 L4 ICS1 L4	MK1 L4 SBP2 L4 ICS1 L4

Description of the Activity:

Thermal injuries are a common problem encountered by critical care physicians. These injuries encompass hyperthermic, hypothermic, chemical, and electrical etiologies. All surgical intensivists should be able to perform initial management and stabilization and direct the timing and sequence of subsequent therapies.

In Scope:

- Burn (thermal and chemical)
- Cold-induced injury (frostbite, frostnip, chilblains)
- Electrical injury
- Hypothermia/hyperthermia
- Inhalation injury
- Stevens-Johnson syndrome/toxic epidermal necrolysis/toxic shock syndrome
- Thermal injury involving children and adolescents

Out of Scope:

- None

Level	Resuscitation	Ongoing Management	Transition of Care
1 Limited Participation	PC1 L1 PC3 L1 PC5 L1 ICS1 L1	PC1 L1 PC2 L1 PC5 L1 PC10 L1 MK2 L1 ICS1 L1	PC5 L1 MK2 L1 ICS1 L1
2 Direct Supervision	PC1 L2 PC3 L2 PC5 L2 ICS1 L2	PC1 L2 PC2 L2 PC5 L2 PC10 L2 MK2 L2 ICS1 L2	PC5 L2 MK2 L2 ICS1 L2
3 Indirect Supervision	PC1 L3 PC3 L3 PC5 L3 ICS1 L3	PC1 L3 PC2 L3 PC5 L3 PC10 L3 MK2 L3 ICS1 L3	PC5 L3 MK2 L3 ICS1 L3
4 Practice Ready	PC1 L4 PC3 L4 PC5 L4 ICS1 L4	PC1 L4 PC2 L4 PC5 L4 PC10 L4 MK2 L4 ICS1 L4	PC5 L4 MK2 L4 ICS1 L4

Description of the Activity:

Surgical intensivists often encounter patients who may require ECLS for acute respiratory failure, acute cardiac failure, and other indications. Surgical intensivists are often called to consider the role of ECLS in these patients and must be knowledgeable in the initiation, management, and discontinuation of ECLS.

In Scope:

- All conditions that require ECLS support in adults and children

Out of Scope:

- None

Level	Resuscitation	Ongoing Management	Transition of Care
1 Limited Participation	PC1 L1 PC3 L1 PC6 L1 MK1 L1 MK2 L1 SBP2 L1 ICS2 L1	PC1 L1 PC3 L1 PC6 L1 MK1 L1 MK2 L1 ICS2 L1	PC1 L1 PC3 L1 PC6 L1 MK1 L1 SBP2 L1 ICS2 L1
2 Direct Supervision	PC1 L2 PC3 L2 PC6 L2 MK1 L2 MK2 L2 SBP2 L2 ICS2 L2	PC1 L2 PC3 L2 PC6 L2 MK1 L2 MK2 L2 ICS2 L2	PC1 L2 PC3 L2 PC6 L2 MK1 L2 SBP2 L2 ICS2 L2
3 Indirect Supervision	PC1 L3 PC3 L3 PC6 L3 MK1 L3 MK2 L3 SBP2 L3 ICS2 L3	PC1 L3 PC3 L3 PC6 L3 MK1 L3 MK2 L3 ICS2 L3	PC1 L3 PC3 L3 PC6 L3 MK1 L3 SBP2 L3 ICS2 L3
4 Practice Ready	PC1 L4 PC3 L4 PC6 L4 MK1 L4 MK2 L4 SBP2 L4 ICS2 L4	PC1 L4 PC3 L4 PC6 L4 MK1 L4 MK2 L4 ICS2 L4	PC1 L4 PC3 L4 PC6 L4 MK1 L4 SBP2 L4 ICS2 L4