

# Intensive Care Fundamentals Intended Learning Outcomes



## Intended Learning Outcomes

By the end of the course, the candidate should be able to:

### **Outcomes 1: The deteriorating patient**

- Identify an acutely ill or deteriorating patient (*in a simulated setting*)
- Identify life-threatening conditions in an effective and timely fashion using the ABCDE approach (*in a simulated setting*)
- Stabilise and initiate treatment for a critically ill patient (*in a simulated setting*)
- Discuss the risks and possible pitfalls of transporting a critically ill patient
- Recognise and manage circulatory arrest and peri-arrest states (*in a simulated setting*)
- Describe the patient at risk of difficult intubation

### **Outcomes 2: Ward round**

- Demonstrate a routine daily reassessment of a patient in a structured manner (in a simulated setting)
- Effectively prescribe venous thromboembolic disease and stress ulcers prophylaxis

### **Outcomes 3: Organ support**

#### **3a. Acute respiratory failure**

- Describe the indications and modalities of oxygen therapy, non-invasive ventilation methods, and indications for intubation and invasive mechanical ventilation
- Apply basic physiological principles of mechanical ventilation - volumes, pressures, compliance etc. in the management of the most common lung pathologies using basic modes of ventilation (in a simulated setting)
- Demonstrate the ability to initially set a ventilator and adapt ventilatory settings for patients with the most common types of ventilation disorders, including obstructive pulmonary disease and ARDS (in a simulated setting/app)
- Select an adequate PEEP based on physiological values (in a simulated setting/app)
- Identify the most common types of ventilator interference (in a simulated setting/app)
- List the most common cause of sudden hypoxia in a patient with a tracheostomy
- Discuss the management of the acutely hypoxic patient on mechanical ventilation in ICU
- Describe the principles of weaning from mechanical ventilation, readiness testing and the risk factors for weaning failure

#### **3b. Shock and Haemodynamic monitoring**

- Describe basic cardiovascular physiology and its monitoring in the context of the most common pathologies in ICU, including cardiac output and its measurement, left heart failure, and right heart failure
- Demonstrate assessment of fluid responsiveness in the simulated haemodynamically unstable patient/case
- Discuss the indications and use of vasopressor therapy

- Describe the different aetiologies of shock, recognise the role of POCUS to help assess the causes of haemodynamic instability

### **3c. Sepsis and septic shock**

- discuss the warning signs of life-threatening infection
- discuss the one-hour bundle of treatment of patients with sepsis
- Describe the most common ICU acquired infections and propose an effective initial antibiotic treatment
- Identify the need for urgent source control in sepsis where appropriate in a simulated setting or case
- Describe the basics of antibiotic stewardship

### **3d. Metabolic derangements**

- Interpret arterial blood gases
- Describe a treatment plan for patients with life-threatening electrolyte and metabolic disturbances
- Propose the appropriate management for patients with the most common metabolic disorders, especially hyperkalaemia and hypernatraemia
- Discuss the importance of fluid choice and balance in the critically ill patient

### **3e. Renal failure**

- Recognise indications for urgent renal replacement therapy (in a simulated patient/case)
- Describe common Renal Replacement Therapy (RRT) modes and compare haemodialysis, haemofiltration and haemodiafiltration

### **3f. Nutrition**

- Discuss the benefits and risks of enteral and parenteral nutrition

### **3g. Treatment and prevention of delirium, sedation and analgesia**

- Discuss the physical and psychosocial needs of hospitalised patients with regards to the prevention of delirium
- Describe signs of hypo- and hyperactive delirium and treatment options
- Safely prescribe sedation and analgesia in a simulated ICU setting or case, including adequate use of sedation holds

## **Outcomes 4: Specific pathologies in the intensive care unit**

### **4a. Trauma and Surgery**

- Discuss suitable options for perioperative pain management
- Apply the principles of safe blood transfusion to a simulated patient with life-threatening haemorrhage / trauma
- Diagnose and propose a treatment plan for the common coagulopathies in a simulated patient or case
- Discuss the management of haemorrhage in a patient who is receiving an anticoagulant/antiplatelet agent

### **4b. Neurological emergencies and basics of neurointensive care**

- Describe the pathophysiology of intracranial hypertension and its operative and non-operative management
- Describe a treatment plan for patients with various neurological injuries (e.g., Traumatic Brain Injury [TBI] and stroke)
- Explain the meaning of neuroprotective measures in patients with brain injury
- Discuss the immediate actions needed when a patient is showing signs of coning
- Discuss the initial management of patients with seizures and/or status epilepticus
- Plan neuroprotective strategies following cardiac arrest in a simulated patient or case
- Describe the principles of post-resuscitation care prognostic assessment post-CPR

#### ***4c. Medical emergencies***

- Recognise and effectively treat life-threatening brady- and tachyarrhythmias in a simulated setting

### **Outcomes 5: Non-technical aspects of intensive care**

#### ***5a. Ethics of intensive care, end-of-life aspects***

- Explain the limitations of intensive care, and the principles of withholding and withdrawing treatment, including potential organ donation
- Describe a management and treatment plan for the patient at the end of life including symptom relief therapy

#### ***5b. Crisis resource management and communication in crisis***

- Discuss the principles of communication in crisis and crisis resource management (leadership, membership, situational awareness) and relate them to their own experience and professional context
- Communicate in a professional but effective and assertive manner in a simulated emergency
- Demonstrate a succinct and structured handover in a simulated setting

### **Outcomes 6: Equipment**

- Troubleshoot common issues with equipment: monitoring, arterial lines, central venous catheters, and chest drain