JFICMI Curriculum & Minimum Training Requirements
October 2023

JFICMI Curriculum & Minimum Training Requirements
October 2023

1) INTRODUCTION

The overall objective of training in intensive care medicine under the auspices of the JFICMI is to equip trainee doctors with the skills – clinical, procedural and non-clinical – and attitudes to provide high quality specialist care to critically ill patients in Ireland, in both regional and metropolitan settings. The training programme reflects this overarching objective, using a competency based model derived from the CoBaTrICe curriculum, a Europe-wide model of intensive care medicine training designed by a combination of established intensive care consultants and a user (patient and relatives) survey.
The JFICMI training programme is divided into 12 competency domains, comprehensively representing all the key aspects of training for specialist practice. These domains are described as follows:

1. Resuscitation and initial management of the acutely ill patient
2. Diagnosis – assessment, investigation, monitoring and data interpretation
3. Disease management
4. Therapeutic interventions/organ system support in single or multiple organ failure
5. Safe use of practical procedures
6. Peri-operative care
7. Comfort and recovery
8. End of life care
9. Paediatric care
10. Transport
11. Patient safety and health systems management
12. Professionalism

For each of these domains, the curriculum below provides a detailed list of:

JFICMI Curriculum & Minimum Training Requirements

October 2023

(a) expected learning outcomes for doctors who have completed intensive care medicine training.
(b) knowledge required to achieve competency in the domain
(c) skills required to achieve competency in the domain
(d) relevant links to the Medical Council's Eight Domains of Professional Practice.

2) DETAILED LIST OF CURRICULAR DOMAINS

DOMAIN 1: RESUSCITATION & INITIAL MANAGEMENT OF THE ACUTELY ILL PATIENT
KEY LEARNING OBJECTIVES – THE TRAINEE IS ABLE TO: • *adopt a structured and timely approach to the recognition, assessment and stabilisation of the acutely ill patient with disordered physiology* • *manage cardiopulmonary resuscitation* • *manage the patient post-resuscitation* • *triage and prioritise patients appropriately, including timely admission to ICU* • *assess and provide initial management of the trauma patient* • *assess and provide initial management of the patient with burns* • *describe the management of mass casualties*
KNOWLEDGE • General acute illness o Awareness and interpretation of the early warning signs of critical illness, including impending airway, breathing, cardiovascular and/or neurological failure o Measures of adequacy of airway, breathing and cardiovascular system o Recognition of life threatening changes in physiological parameters o Recognition of when organ dysfunctions or failure are an immediate threat to life o Causes of cardio-respiratory arrest, identification of patients at risk and corrective treatment of reversible causes o Causes, recognition and management of: acute chest pain, tachypnoea & dyspnoea, upper and lower airway obstruction, pulmonary oedema, pneumothorax (simple & tension), hypoxaemia, hypotension, shock states, anaphylactic and anaphylactoid reactions, hypertensive emergencies, acute confusional states and altered consciousness, acute seizures and convulsions, oliguria and anuria, acute disturbances in thermoregulation, acute abdominal pain

- Treatment algorithms for common medical emergencies
- The modification of resuscitation techniques in the special circumstances of hypothermia, immersion and submersion, poisoning (including specific antidotes as appropriate), pregnancy, electrocution, anaphylaxis, acute severe asthma and trauma
- Treatment strategies for abnormalities of fluid, electrolyte, acid-base and glucose balance
- Principles, including indications, limitations and therapeutic modalities of basic radiological methods, CT scanning, MRI, ultrasound, angiography and radio nucleotide studies in the critically ill patient

- Cardiovascular acute illness (See DOMAIN 3: Disease Management)
  - Cardiopulmonary resuscitation
  - Indications, dosages and actions of drugs used in the peri-arrest period
  - Defibrillation: principles of monophasic & biphasic defibrillators; mechanism, indications, complications, modes and methods (manual and automated external defibrillators (AED))
  - Cardiac arrhythmias and the principles of their management (treatment algorithm): peri-arrest arrhythmias (bradycardia, broad complex tachycardia, atrial fibrillation, narrow complex tachycardia); ventricular fibrillation (VF) and pulseless ventricular tachycardia (VT); non-VF / VT rhythms (asystole/PEA); when not to start and when to cease cardiopulmonary resuscitation
  - Indications, doses and actions of primary drugs used in the management of a cardiac arrest (inc. special precautions and contraindications)
  - Indications and methods of cardiac pacing in the peri-arrest setting
  - Effect of cardio-respiratory arrest on body systems
  - Principles and application of targeted temperature management after cardiac arrest
  - Immediate management of acute coronary syndromes
  - Management of the patient with cardiogenic shock, including the importance of early revascularisation strategies
  - Management of patient with haemorrhagic shock including the appropriate administration of blood products, factor concentrates and drugs used to reverse pharmacological anticoagulation (including NOACs/DOACs)
  - Management of patient with sepsis/septic shock
- Respiratory acute illness (See DOMAIN 3: Disease Management)
  - Indications for and methods of ventilatory support

- Non-traumatic respiratory emergencies: pneumonia; pneumothorax; pulmonary embolism; massive pleural effusion; acute respiratory distress syndrome; exacerbation of COPD; acute severe asthma
- Traumatic respiratory emergencies: acute airway emergencies; tension pneumothorax; haemothorax; pulmonary contusions; bony injury and flail chest; high spinal cord injury
- Indications for and basic interpretation of chest radiographs: range of normal features on a chest x-ray; collapse, consolidation, infiltrates (including ALI/ARDS), pneumothorax, pleural effusion, pericardial effusion, position of cannulas, tubes or foreign bodies, airway compression, cardiac silhouette, mediastinal masses
- Tracheal route for drug administration: indications, contraindications, dosage

- Neurological acute illness (See DOMAIN 3: Disease Management)
  - Methods for assessing neurological function e.g. Glasgow Coma Scale
  - Altered consciousness; post-anoxic brain injury; intracranial haemorrhage and infarction; spinal cord injury
  - Principles of management of traumatic brain injury: coup and contra-coup injuries; methods of preventing 'secondary insult' to the brain; recognition and immediate management of raised intracranial pressure
  - Recognition of indications for referral of patients with acute neurological (spinal/ intracerebral) critical illness to a neurosurgical centre
  - Indications for thrombolysis or mechanical interventions for patients with acute ischaemic/thrombotic stroke
- Renal acute illness (See DOMAIN 3: Disease Management)
  - Acute kidney injury
  - Recognition of pre-renal, renal and post-renal causes of AKI
  - Measures to reverse renal hypoperfusion
- Polytrauma patient
  - Methods for securing vascular access rapidly (including interosseus access)
  - Surface anatomy: structures in the antecubital fossa; large veins and anterior triangle of the neck; large veins of the leg and femoral triangle
  - Techniques for effective fluid resuscitation
  - Principles of blood and blood component therapy; principles of massive transfusion
  - Performance and interpretation of a primary and secondary survey

- Environmental hazards & injuries: hypo- and hyperthermia, near-drowning, electrocution, radiations, chemical injuries, electrical safety/micro shock
- Relevance of mechanism of injury to clinical presentation
- Effects and acute complications of severe trauma on organs and organ systems:
- Gastrointestinal - abdominal trauma; abdominal tamponade; rupture of liver or spleen
- Musculoskeletal system - soft tissue injury; short term complications of fractures; fat embolism; crush injury & compartment syndromes; maxillofacial injuries
- Secondary insults that potentiate the primary injury
- Immediate specific treatment of life-threatening injury
- Management of cervical spine injuries
- Management of severe acute haemorrhage and blood transfusion; correction of coagulation disorders and haemoglobinopathies

- The burned patient
  - Pathophysiology and medical/surgical management of the phases of a burn injury
  - Calculation of area burned
  - Principles of calculation of fluid losses & fluid resuscitation in the burned patient
  - Respiratory complications of burn injuries (smoke inhalation, airway burns) - detection and management
  - Burn-related compartment syndrome and escharotomy
  - The environmental control necessary for optimal care of the burned patient
  - Recognition and management of acute disturbances in thermoregulation
  - Prevention of infection in the burned patient
- Non-clinical
  - Principles of outcome prediction / prognostic indicators and treatment intensity scales; limitations of scoring systems in predicting individual patient outcome
  - Legal and ethical issues relating to the use of the recently dead for practical skills training, research and organ donation
  - Relevance of prior health status in determining risk of critical illness and outcomes
  - Triage and management of competing priorities

- Criteria for admission to, and discharge from ICU - factors influencing intensity and site of care (ward, high dependency unit (HDU), intensive care unit (ICU))
- Organisational principles for the coordination and management of mass casualties
- Characteristics and clinical presentations associated with major incidents caused by natural or civilian disasters, infection epidemics or terrorist attack
- Local major incident plan - the role of the ICU in hospital/community disaster plans
- Electrical safety: conditions which predispose to the occurrence of macro-shock / micro-shock; physical dangers of electrical currents; relevant standards regarding safe use of electricity in patient care; basic methods to reduce electrical hazards
- Communication tasks and personal role in major incident / accident plan
- Principles of internal hospital communication
- Management of public relations and information
- Alternative forms of external communication
- Triage methods in use locally
- Decontamination procedures
- Principles of crisis management, conflict resolution, negotiation and debriefing
- Psychological support for patients and relatives
- Risks to the rescuer during resuscitation & methods to minimise these

SKILLS

- Respond to an emergency in a positive, organised and effective manner; able to direct the resuscitation team
- Consider legal and ethical issues: patient autonomy, appropriateness of resuscitation and ICU admission
- Conduct a primary survey: obtain relevant information rapidly and accurately
- Recognise signs and symptoms of impending cardiac arrest
- Assess conscious level, status of airway and cervical spine, and conduct careful systems review
- Order and prioritise appropriate investigations
- Use emergency monitoring equipment
- Monitor vital physiological functions as indicated

- Recognise and rapidly respond to adverse trends in monitored parameters
- Check & assemble resuscitation equipment
- Demonstrate advanced life support skills (ALS standard or equivalent)
- Use a defibrillator safely
- Initiate routine investigations during resuscitation to exclude reversible problems (e.g. hyperkalaemia)
- Recognise and manage choking / obstructed airway
- Implement emergency airway management, oxygen therapy and ventilation as indicated
- Demonstrate emergency relief of tension pneumothorax
- Obtain vascular access sufficient to manage acute haemorrhage, rapid fluid infusion and monitor cardiovascular variables
- Perform interosseous cannulation
- Initiate and/or manage patient requiring emergency cardiac pacing
- Support relatives witnessing an attempted resuscitation
- Participate in timely discussion and regular review of ‘do not resuscitate’ orders and treatment limitation decisions
- Assess and communicates effectively the risks and benefits of intensive care admission
- Discuss treatment options with a patient or relatives before ICU admission
- Take decisions to admit, discharge or transfer patients
- Consider the need for stabilisation before transfer
- Determine when the patient's needs exceed local resources or specialist expertise (requirement for transfer)
- Explain life-sustaining therapies, in clear language, and describe the expected outcome of such therapies in view of the patient's goals and wishes.
- Professional and reassuring approach - generates confidence and trust in patients and their relatives
- Assess and document Glasgow Coma Scale (GCS)
- Examine and plan care for the confused patient
- Perform a comprehensive secondary survey; integrate history with clinical examination to form a differential diagnosis
- Prioritise the order of investigations and interventions for individual injuries according to their threat to life
- Protect a potentially unstable cervical spine
- Assess, predict and manage circulatory shock

- Assess burn severity and prescribe initial fluid resuscitation
- Estimate burn wound mortality from published data tables
- Describe the endpoints of burn resuscitation and preferred fluids
- Prescribe appropriate analgesia
- Identify or describe risk factors for airway compromise in the burned patient
- Identification and management of carbon monoxide poisoning
- Lead, delegate and supervise others appropriately according to experience and role
- Recognise and manage emergencies; seek assistance appropriately

ATTITUDES

- Appreciates the importance of timely goal-oriented resuscitation and institution of organ-system support
- Recognises the need for supportive care for all organ systems whether failing / injured or not
- Appreciates the importance of ensuring physiological safety as a primary aim
- Maintains the highest standards in clinical and technical practice
- Demonstrates effective non-technical skills (task management, team working, situational awareness and decision-making)
- Is clear in communicating with and providing explanations to patient, relatives and staff
- Balances courtesy and empathy with effective clinical judgement during interactions with patients, relatives and staff
- Establishes trusting relationships with and demonstrates compassionate care of patients and their relatives
- Models effective interpersonal behaviours with other healthcare staff, demonstrating the qualities of leadership, courtesy, collaboration and empathy
- Models good workplace behaviours, in particular is hard-working, motivated and dedicated to high quality patient care
- Demonstrates dedication to maintaining patient safety as a priority
- Demonstrates dedication to optimising workplace safety for self and healthcare staff (including appropriate infection control strategies)
- Recognises personal limitations, seeks and accepts assistance or supervision (knows how, when and who to ask). Takes responsibility for patient up to but not beyond level of personal limitations
- Understands the importance of self-regulation, self-efficacy and self-awareness in the workplace

METHODS OF LEARNING AND ASSESSMENT

- Formative assessment/Learning:
    - Consultant feedback in the workplace
    - Training supervisor's report from interim competence assessment: feedback discussion between trainee and training supervisor during ICM module (from observation of daily performance by training supervisor and other consultants within the ICU)
    - Workplace-based assessments: DOPS; CbD; Mini-CEX
    - eLogbook review with training supervisor
    - Intensive Care Simulation course (JFICMI) – mandatory
    - Difficult airway workshop (College of Anaesthesiologists) - mandatory
    - BASIC course (Intensive Care Society of Ireland) – mandatory
    - ACLS – mandatory
    - ATLS – desirable
    - Trainee clinical and educational presentations
- Summative Assessment:
    - Training supervisor's report from end-of-term competence assessment: feedback discussion between trainee and training supervisor (from observation of daily performance by training supervisor and by other consultants within the ICU)
    - JFICMI Fellowship examination:
    - eLogbook review with training supervisor
    - Entrustable professional activities: rated using workplace-based assessments, eLogbook and consultant observation of daily clinical performance (planned process of phased introduction)
    - Interim meeting between trainee and JFICMI Training Committee members to ensure all year 1 (Clinical ICM Fellow) requirements satisfied and that trainee can progress to year 2 (Advanced Clinical Fellow)
    - Final meeting (Exit Interview) between trainee and JFICMI Training Committee members to ensure all training requirements satisfactorily have been completed

MEDICAL COUNCIL DOMAINS OF GOOD PROFESSIONAL PRACTICE

- Relating to patients

- Clinical skills
- Communication and interpersonal skills
- Collaboration and teamwork
- Scholarship
- Professionalism
- Patient safety and quality of patient care

DOMAIN 2: DIAGNOSIS – ASSESSMENT , INVESTIGATION, MONITORING AND DATA INTERPRETATION

LEARNING OBJECTIVES – THE TRAINEE IS ABLE TO

- *obtain a history and perform and accurate clinical examination*
- *undertake timely and appropriate investigations*
- *perform focused transthoracic echocardiography (FUSIC standard) and interpret findings*
- *perform and interpret general critical care ultrasound (thoracic, abdominal, vascular)*
- *perform electrocardiography and interpret the results*
- *obtain appropriate microbiological samples and interpret results*
- *obtain an interpret results from blood gas samples*
- *interpret chest x-rays*
- *liaise with radiology staff to organise and interpret clinical imaging*
- *monitor and respond to trends in physiological variables*
- *integrate clinical findings with laboratory investigations to form a differential diagnosis*

KNOWLEDGE

- Importance and principles of obtaining an accurate history of the current condition, comorbidities and previous health status
- Clinical signs associated with critical illness, their relative importance and interpretation
- Sources and methods of obtaining clinical information
- Relevance of prior health status in determining risk of critical illness and outcomes

- Significance and impact of co-morbid disease on the presentation of acute illness
- Impact of drug therapy on organ-system function (including chemotherapy, the expanding area of monoclonal antibody therapies, CAR-T therapies)
- Indications for and the selection of suitable methods of monitoring or investigation taking into account their accuracy, convenience, reliability, safety, cost and relevance to the patient's condition.
- Sensitivity and specificity of the investigation as related to a specific disease
- Appropriate use of laboratory tests to confirm or refute a clinical diagnosis
- Methods and routes of obtaining samples - associated indications and complications
- Indications, limitations and basic interpretation of laboratory investigations of blood and other body fluids (e.g. urine, CSF, pleural and ascitic fluids):
    - Haematology
    - Immunology
    - Cytology
    - Blood grouping and cross-matching
    - Urea, creatinine, glucose, electrolytes and lactate
    - Liver function tests
    - Drug levels in blood or plasma
    - Tests of endocrine function (diabetes, thyroid disorders, adrenal failure)
    - Blood gas samples (arterial, venous, central venous and mixed venous)
    - Microbiological surveillance and clinical sampling
- Types of organisms - emergence of resistant strains, mode of transfer, opportunistic and nosocomial infections; difference between colonisation & infection. This will include the assessment and investigation for invasive fungal infections, the role of fungal biomarkers. This will also include assessment and investigation for viral infections.
- New generation infection diagnosis adjuncts such as 16s assay, procalcitonin, lateral flow testing and rapid PCR testing in blood, CSF, respiratory samples
- Universal precautions and preventative infection control techniques (hand washing, gloves, protective clothing, sharps disposal etc.)

- Principles of aseptic technique and aseptic handling of invasive medical devices
- Local patterns of bacterial resistance and antibiotic policy; difference between contamination, colonisation and infection
- Interpretation of information from monitoring devices, and identification of common causes of error; principles of monitoring trends of change and their significance
- Hazards of inappropriate monitoring including misuse of alarms; principles of disconnection monitors
- Principles of invasive pressure monitoring devices: components & functions of a pressure transducer system (catheter, tubing, transducer, amplifier and display unit); zero and calibration techniques; dynamics of the system - natural frequency and damping
- Anatomy and physiology of the heart and cardiovascular system
- Principles of haemodynamic monitoring - invasive & non-invasive methods, indications & limitations, physiological parameters and waveform interpretation
- Recognition of life threatening changes in physiological parameters
- Invasive & non-invasive systems available for measuring cardiac output and derived haemodynamic variables, the principles involved and the type and site of placement of the monitoring device
- Interpretation of, relationships between, sources of error and limitations of measured and derived cardiovascular variables including pressure, flow, volume and gas transport
- Methods for measuring temperature
- Principles, indications and limitations of pulse oximetry
- Principles of ECG monitoring (heart rate, rhythm, conduction, ST segment change & QT interval) - indications, limitations and techniques. Advantages and disadvantages of different lead configurations
- Clinical measurement: pH, pCO_2, pO_2, SaO_2, FiO_2, CO_2 production, oxygen consumption, respiratory quotient, including the differences between pulse oximetry and co-oximetry
- Principles of monitoring ventilation - significance of respiratory rate, tidal volume, minute volume, mean, peak, end expiratory and plateau pressure, intrinsic and extrinsic PEEP, inspired oxygen concentration, arterial blood gas and acid base status; relationship between mode of ventilation and choice of parameters monitored; airflow and airway pressure waveforms; advanced ventilation modes (NAVA, PAV+, APRV, Automated weaning modes); oesophageal pressure monitoring during IPPV; identification of patient-ventilator asynchrony

- Physical principles, indications and limitations of end tidal CO_2 monitoring, and relationship between end tidal CO_2 and arterial pCO_2 in various clinical circumstances. Also, recognition of the value of Pa-vCO2 in managing patients with critical illness.
- Pre-analytical errors of arterial blood gas sampling (choice of sample site, sampling device, heparin, mixing, storage and transport)
- Homeostatic regulation of acid base balance and buffer ions (e.g. Na^+, K^+, $Ca^{2+,}$ Cl^-, HCO3-, Mg^{2+}, $PO4^{3-)}$
- Respiratory physiology: gas exchange, O_2 and CO_2 transport, hypoxia, hypo- and hypercarbia, functions of haemoglobin in oxygen carriage and acid-base balance
- Renal physiology: regulation of fluid and electrolyte balance
- Methods for assessing pain and sedation
- Methods for assessing neurological function e.g. Glasgow Coma Scale
- Systems available for intracranial pressure monitoring - indications, principles, type and site of placement of the monitoring device, data collection and trouble-shooting
- Indications and techniques of jugular bulb oximetry
- Principles, including indications, limitations and therapeutic modalities of basic radiological methods, CT scanning, MRI, ultrasound, angiography and radio nucleotide studies in the critically ill patient
- Risks to patient and staff of radiological procedures and precautions to minimise risk
- Indications for and basic interpretation of chest radiographs: range of normal features on a chest x-ray; collapse, consolidation, infiltrates (including ARDS), pneumothorax, pleural effusion, pericardial effusion, position of cannulas, tubes or foreign bodies, airway compression, cardiac silhouette, mediastinal masses
- Effect of projection, position, penetration and rotation on the image quality
- Radiation exposure and efforts to minimise this in the clinical setting, including awareness of patient radiation safety and governing legislation
- Basic interpretation of radiological investigations:
    - Neck and thoracic inlet films
    - X-rays of abdominal fluid levels / free air
    - X-rays of long bone, skull, vertebral and rib fractures

- CT images of of brain/head (fractures/haemorrhage/intracerebral oedema), thorax, abdomen/pelvis, soft tissues (Necrotising fasciitis) demonstrating fractures / haemorrhage
- Ultrasound of the abdomen [ascitic fluid, kidneys, FAST scan (desirable)], liver, spleen, large abdominal vessels, kidney, urinary bladder)
- Echocardiography (ventricular function, basic filling status, size of the heart, pericardial effusion with or without evidence of tamponade)

- Principles, indications, limitations and basic interpretation of:
  - Respiratory function tests
  - Diagnostic bronchoscopy
  - Diagnostic ECG (EKG)
  - Electroencephalogram (EEG) and evoked potentials
  - Intra-abdominal pressure monitoring
  - Intrathoracic pressure (oesophageal pressure) measurements
  - Fluid input-output monitoring
  - Basic principles of ultrasound and the Doppler effect
  - Invasive cardiac output monitoring
  - Renal replacement therapy (including anticoagulation strategies such as citrate, heparin and prostacyclin). Additional anticoagulation strategies in the presence of HITTS (e.g. argartroban)

SKILLS

- Examine patients, elicit and interpret clinical signs (or relevant absence of clinical signs) in the ICU environment
- Obtain relevant information from the patient, relatives and other secondary sources
- Professional and reassuring approach - generates confidence and trust in patients and their relatives
- Integrate history with clinical examination to create a diagnostic and therapeutic plan
- Acquire, interpret, synthesize, record, and communicate (written and verbal) clinical information
- Develop a working, and limited differential diagnosis based on presenting clinical features
- Recognise impending organ system dysfunction
- Order and prioritise appropriate investigations

- In emergency situations, confirm or refute early diagnoses before data collection / analysis is complete - make contingency plans based on these diagnoses to combat further threats to the patient's life
- Integrate clinical findings with results of investigations
- Interpret laboratory results in the context of the patient's condition
- Evaluate benefits and risks related to specific investigations
- Monitor vital physiological functions as indicated
- Obtain and accurately record data from monitors
- Set monitor alarms appropriately
- Differentiate real change from artefact & respond appropriately
- Identify deviations from normal range and interpret these in the context of the clinical circumstances
- Recognise and rapidly respond to adverse trends in monitored parameters
- Recognise patterns in trends - early diagnosis and outcome prediction
- Review the need for continued monitoring regularly Use emergency monitoring equipment
- Obtain and interpret data from:
    - Invasive and non-invasive arterial blood pressure measurement
    - ECG / EKG (3 and 12 lead)
    - Central venous catheters
    - Pulmonary artery catheters, oesophageal Doppler, PiCCO devices or similar
    - Pulse oximetry/Co-oximetry
    - FVC, spirometry and peak flow measurement
    - Inspired and expired gas monitoring for O_2, CO_2 and NO
    - Intracranial pressure monitoring
    - Jugular bulb catheters and S_jO_2 monitoring (Desirable)
- Attain FUSIC transthoracic echocardiography level and be able to interpret image findings
- Set and interpret data from ventilator alarms
- Obtain blood gas samples using aseptic techniques; interpret data from arterial, central venous or mixed venous samples
- Confirm adequate oxygenation and control of $PaCO_2$ and pH

- Obtain blood cultures using aseptic techniques
- Interpret chest x-rays in a variety of clinical contexts
- Interpret data from scoring or scaling systems to assess pain and sedation
- Assess and document Glasgow Coma Scale (GCS)
- Recognise changes in intracranial and cerebral perfusion pressure which are life threatening
- Identify abnormalities requiring urgent intervention
- Recognise significant changes and the need for repeated testing (i.e. that a single normal result is not as significant as identifying trends of change by repeated testing where indicated)
- Document investigations undertaken, results and action taken
- Assemble clinical and laboratory data, logically compare all potential solutions to the patient's problems, prioritise them and establish a clinical management plan
- Undertake further consultation / investigation when indicated
- Communicate effectively with radiological colleagues to plan, perform and interpret test results
- Communicate and collaborate effectively with all laboratory staff
- Lead, delegate and supervise others appropriately according to experience and role

ATTITUDES

- Demonstrates a commitment to collect all relevant information (from history, clinical examination and investigations) when seeking to establish a critical illness diagnosis
- Appreciates the importance of timely ordering and interpretation of appropriate investigations
- Promotes respect for patient privacy, dignity and confidentiality
- Avoids unnecessary tests or extensive invasive procedures or monitoring which cannot be adequately interpreted at the bedside
- Minimises patient discomfort and distress in relation to monitoring devices, procedures and investigations
- Ensures safe and appropriate use of equipment and devices
- Supports other staff in the correct use of devices
- Demonstrates compassionate care of patients and relatives
- Maintains the highest standards in clinical and technical practice

- Is clear in communicating with and providing explanations to patient, relatives and staff
- Balances courtesy and empathy with effective clinical judgement during interactions with patients, relatives and staff
- Establishes trusting relationships with and demonstrates compassionate care of patients and their relatives
- Models effective interpersonal behaviours with other healthcare staff, demonstrating the qualities of leadership, courtesy, collaboration and empathy
- Models good workplace behaviours, in particular is hard-working, motivated and dedicated to high quality patient care
- Demonstrates dedication to maintaining patient safety as a priority
- Demonstrates dedication to optimising workplace safety for self and healthcare staff (including appropriate infection control strategies)
- Recognises personal limitations, seeks and accepts assistance or supervision (knows how, when and who to ask). Takes responsibility for patient up to but not beyond level of personal limitations

METHODS OF LEARNING AND ASSESSMENT

- Formative assessment/Learning:
    - Consultant feedback in the workplace
    - Training supervisor's report from interim competence assessment: feedback discussion between trainee and training supervisor during ICM module (from observation of daily performance by training supervisor and other consultants within the ICU)
    - Workplace-based assessments: DOPS; CbD; Mini-CEX
    - eLogbook review with training supervisor
    - Intensive Care Simulation course (JFICMI) – mandatory
    - Difficult airway workshop (College of Anaesthesiologists) - mandatory
    - BASIC course (Intensive Care Society of Ireland) – mandatory
    - ACLS – mandatory
    - ATLS – desirable
    - Trainee clinical and educational presentations
- Summative Assessment:

- Training supervisor's report from end-of-term competence assessment: feedback discussion between trainee and training supervisor (from observation of daily performance by training supervisor and by other consultants within the ICU)
- JFICMI Fellowship examination:
- eLogbook review with training supervisor
- Entrustable professional activities: rated using workplace-based assessments, eLogbook and consultant observation of daily clinical performance (planned process of phased introduction)
- Interim meeting between trainee and JFICMI Training Committee members to ensure all year 1 (Clinical ICM Fellow) requirements satisfied and that trainee can progress to year 2 (Advanced Clinical Fellow)
- Final meeting (Exit Interview) between trainee and JFICMI Training Committee members to ensure all training requirements satisfactorily have been completed

MEDICAL COUNCIL DOMAINS OF GOOD PROFESSIONAL PRACTICE

- Relating to patients
- Clinical skills
- Communication and interpersonal skills
- Collaboration and teamwork
- Scholarship
- Patient safety and quality of patient care

DOMAIN 3: DISEASE MANAGEMENT

LEARNING OBJECTIVES – THE TRAINEE IS ABLE TO

- *manage the care of the critically ill patient with specific acute medical conditions*
- *identify the implications of chronic and co-morbid disease in the acutely ill patient*
- *recognise and manage the patient with respiratory failure and/or ARDS*
- *recognise and manage the patient with circulatory failure*
- *recognise and manage the patient with, or at risk of, acute kidney failure*

- *recognise and manage the patient with, or at risk of acute liver failure*
- *recognise and manage the patient with neurological impairment*
- *recognise and manage the patient with acute gastrointestinal failure*
- *recognise and manage the septic patient*
- *recognise and manage the patient following intoxication with drugs or environmental toxins*
- *recognise and manage life-threatening maternal peripartum complications*

KNOWLEDGE

- Pathophysiology, diagnosis and management of commonly encountered acute and chronic medical conditions including:
    - RESPIRATORY DISORDERS: the unprotected airway; pneumonia; lung or lobar collapse; asthma; chronic obstructive airways disease; pulmonary oedema; acute respiratory distress syndrome (ARDS) and causative factors; pulmonary haemorrhage; pulmonary embolus; pleural effusion; pneumothorax (simple and tension); upper and lower airway obstruction including epiglottitis; respiratory muscle disorders; pulmonary fibrosis; pulmonary thrombo-embolic disease
    - CARDIOVASCULAR DISORDERS: shock states (cardiogenic, hypovolaemic, distributive, obstructive); crescendo / unstable / chronic angina; acute myocardial infarction; left ventricular failure; chronic heart failure; cardiomyopathies; valvular heart disease and prosthetic valves; vaso-occlusive diseases; pulmonary hypertension; right ventricular failure; cor pulmonale; malignant hypertension; cardiac tamponade; common arrhythmias and conduction disturbances, pacing box failure; peripheral vascular disease; acute heart failure and mechanical circulatory support (including inter-aortic balloon counterpulsation, ventricular assist devices, Extracorporeal life support)
    - NEUROLOGICAL DISORDERS: acute confusional states and coma; hypoxic-ischaemic brain damage; intracranial haemorrhage and infarction; sub-arachnoid haemorrhage; cerebro-vascular accidents (CVA / stroke); convulsions and status epilepticus; meningitis and encephalitis; medical causes of raised intracranial pressure; acute neuromuscular diseases causing respiratory difficulty (e.g. Guillain-Barre, myasthenia gravis, malignant hyperpyrexia); critical illness polyneuropathy, motor neuropathy and myopathy; cerebro-vascular accidents (CVA / stroke); dementia; autoimmune encephalitis; thrombotic thrombocytopaenic purpura, posterior reversible encephalopathy syndrome (PRES);
    - RENAL AND GENITO-URINARY DISORDERS: urological sepsis; acute renal failure; chronic renal failure; renal manifestations of systemic disease including vasculitides; nephrotoxic drugs and monitoring; rhabdomyolysis

- GASTROINTESTINAL DISORDERS: peptic/stress ulceration; upper GI haemorrhage; diarrhoea and vomiting; pancreatitis; cholecystitis (acalculous and calculous); jaundice; acute and chronic liver failure; fulminant hepatic failure; paracetamol (acetaminophen)-induced liver injury; cirrhosis; inflammatory bowel diseases; peritonitis; ascites; mesenteric infarction; perforated viscus; bowel obstruction & pseudo-obstruction; abdominal trauma; intra-abdominal hypertension & compartment syndrome; short-bowel syndrome; rupture of liver or spleen; Clostridioides difficile infection;
- HAEMATOLOGICAL AND ONCOLOGICAL DISORDERS: disseminated intravascular coagulation (DIC) and other coagulation disorders, hemolytic syndromes, acute and chronic anaemia, immune disorders; lymphoproliferative disorders. High risk groups: the immunosuppressed or immunocompetent patient, chemotherapy, agranulocytosis and bone marrow transplant patients. Massive blood transfusion. Malignancy including complications of chemotherapy and radiotherapy, monoclonal antibodies, immunotherapy (e.g. checkpoint inhibitors, anti-CD20 therapies), CAR-T therapy, bone marrow/cell transplantation (including graft-versus-host disease, veno-occlusive disease and engraftment syndromes)
- INFECTIONS: pyrexia and hypothermia; organ-specific signs of infection including haematogenous (venous catheter-related, endocarditis, meningococcal disease), urological, pulmonary, abdominal (peritonitis, diarrhoea), skeletal (septic arthritis) soft tissue and neurological. Pyometra. Septic abortion. Organisms causing specific infections: Gram positive and Gram negative bacterial, fungal, protozoal, viral infections (including pandemic management); nosocomial infections; new generation antimicrobial agents; Rapid PCR testing
- METABOLIC DISORDERS: electrolyte disorders; acid-base disorders; fluid-balance disorders; thermoregulation and associated disorders; toxicological presentations
- ENDOCRINE DISORDERS: critical illness-induced hyperglycaemia; diabetic emergencies; over- and under-activity of thyroid; adrenal and pituitary disorders; sepsis-induced relative adrenal insufficiency; endocrine emergencies
- OBSTETRIC DISORDERS: pre-eclampsia/eclampsia/HELLP syndrome; amniotic fluid embolism; peripartum haemorrhage, puerperal sepsis; peripartum cardiomyopathy; acute fatty liver of pregnancy
- IMMUNOLOGICAL DISORDERS: acute autoimmune disorders including autoimmune encephalitis; thrombotic thrombocytopaenic purpura; catastrophic antiphospholipid syndrome; acute vasculitis; autoimmune hepatitis; immunotherapy including intravenous immunoglobulin, therapeutic plasma exchange and pharmacological agents (steroids, steroid-sparing agents, rituximab)
- PRECISION MEDICINE

- Indications and contraindications for treatment; circumstances when treatment is unnecessary or futile

- Therapies available for the treatment of commonly encountered medical conditions, their efficacy and potential side-effects
- Complications of specific therapies, their incidence and management
- Concept of risk:benefit ratio and cost-effectiveness of therapies
- Complications of the disease processes; effects of disease and its treatments on other organ systems
- Effects of concomitant treatment and/or co-morbid conditions on an individual patient's response to treatment
- Impact of occupational and environmental exposures, socio-economic factors, and life style factors on critical illness
- Principles of outcome prediction / prognostic indicators and treatment intensity scales; limitations of scoring systems in predicting individual patient outcome
- Causes and consequences of decompensation in chronic organ failure; diagnosis and management of acute-on-chronic organ failure
- Long term effects of acute medical conditions and late complications
- Pathogenesis of multiple organ dysfunction (MODS) and the inflammatory response in relation to organ system dysfunction
- Risk factors, recognition and assessment of single or multiple organ failure
- Use of fluids and vasoactive / inotropic / anti-arrhythmic drugs to support the circulation
- Use of mechanical assist devices to support the circulation (e.g. intra-aortic balloon pump counterpulsation)
- Indications, complications, interactions, selection, monitoring, and efficacy of common antimicrobial drugs (antibacterial, antifungal, antiviral, antiprotozoal, antihelmintics)
- Local patterns of bacterial resistance and antibiotic policy; difference between contamination, colonisation and infection
- Safe use of therapies which modify the inflammatory response (e.g. steroids
- Principles of management of closed head injury including coup and contra-coup injuries
- Methods of preventing the 'second injury' to the brain
- Methods for assessing neurological function and pain (e.g. Glasgow Coma Scale, Richmond Agitation Sedation Score, CPOT score, CAM-ICU assessment or similar)
- Principles of cerebral perfusion pressure, cerebral oxygenation and the methods by which they may be optimised
- Factors and therapies which may influence intracranial and cerebral perfusion pressure
- Application of techniques to treat or induce hypo/hyperthermia

- Systems available for intracranial pressure monitoring - indications, principles, type and site of placement of the monitoring device, data collection and trouble-shooting
- Management of raised ICU including CSF drainage
- Management of vasospasm after aneurysmal subarachnoid haemorrhage
- Principles of measuring jugular venous saturation, cerebral Doppler velocities and cerebral blood flow.
- Principles, indications and limitations of electroencephalogram (EEG) and evoked potentials
- Indications for urgent imaging of the brain and neurosurgical consultation
- Functions of the liver - biosynthetic, immunologic, and detoxification
- Causes and complications of acute and acute-on-chronic liver failure, their prevention and management
- Supportive therapy for the failing liver including extracorporeal liver support and indications for emergency liver transplantation
- Principles and techniques for insertion of gastro-oesophageal balloon tamponade tube (e.g. Sengstaken-Blakemore/ Minnesota tubes)
- Aetiology and management of raised intracranial pressure (ICP)
- Hepatotoxic drugs and adjustment of drug doses in hepatic impairment / failure
- Indications for transcutaneous & trans-jugular liver biopsies and trans-jugular intrahepatic portosystemic shunt (TIPSS)
- Principles of blood glucose control: indications, methods, monitoring of safety & efficacy
- Causes and complications of renal failure - methods to prevent or treat these
- Signs, symptoms and causes of kidney injury/disease (acute / chronic / acute on chronic) and indications for management
- Distinguishing features of acute versus chronic kidney injury/disease and implications for management
- Investigation of impaired kidney function
- Indications, complications and selection of renal replacement therapies (continuous and intermittent), including timing of starting and stopping RRT.
- Nephrotoxic drugs and adjustment of drug doses in kidney injury/disease (including methods for assessing and classifying the severity of acute kidney injury)
- Urinary catheterisation techniques: transurethral, 3-way irrigation and suprapubic procedures
- Factors and therapies which may influence intra-abdominal pressure; aetiology and management of raised intra-abdominal pressure

- Principles of nutritional assessment and support
- Signs and symptoms of acute airway insufficiency and acute respiratory failure, and indications for intervention
- Causes of respiratory failure, their prevention and management
- Indications for and methods of invasive and non-invasive mechanical ventilation as well as high-flow oxygen therapies (e.g. HFNO). Modes of mechanical ventilation - indications, contraindications & expected results of each mode (CMV, IRV, PRVC, HFOV, SIMV, PS, CPAP, NAVA, APRV). Initial set-up and modification of ventilator settings according to the condition or response of the patient
- Lung protective ventilation for Acute Respiratory Distress Syndrome (ARDS)
- Pharmacological and non-pharmacological adjunct therapies for ARDS
- Detection and management of haemo-/pneumothorax (simple and tension)
- Principles of weaning from mechanical ventilation and factors which may inhibit weaning
- Potential adverse effects and complications of respiratory support and methods to minimise these
- Indications for and basic interpretation of chest radiographs: range of normal features on a chest x-ray; collapse, consolidation, infiltrates (including ARDS), pneumothorax, pleural effusion, pericardial effusion, position of cannulas, tubes or foreign bodies, airway compression, cardiac silhouette, mediastinal masses
- Ventilator associated pneumonia: definition, pathogenesis and prevention
- Principles, indications and complications of veno-venous and veno-arterial extra-corporeal membrane oxygenation (ECMO)
- Pathogenesis, definitions and diagnostic criteria of sepsis, severe sepsis, septic shock and systemic inflammatory response syndrome (including SIRS, SOFA score, qSOFA)
- Causes, recognition and management of sepsis-induced organ dysfunction; multi-system effects of sepsis and their impact on clinical management
- Prognostic implications of multiple system dysfunction or failure
- Evidence based guidelines: sepsis care bundles - rationale and indications; e.g. principles of early goal-directed therapy, Sepsis 6
- Signs and symptoms of acute intoxication associated with common intoxicants
- Multi-system effects of acute intoxication and implications for clinical management
- General supportive therapy and specific antidotes pertinent to individual intoxicants

- Specific management of poisoning (e.g. aspirin, paracetamol/acetaminophen, paraquat, carbon monoxide, alcohol, ecstasy, tricyclic and quadricyclic antidepressants)
- Strategies to reduce absorption and enhance elimination (haemodialysis, haemoperfusion, gastric lavage and charcoal therapy) following a toxicological ingestion
- Pharmacology of common intoxicants
- Indications for and basic interpretation of drug levels in blood or plasma
- Indications and complications of hyperbaric oxygenation
- Services available to patients and families to provide emotional or psychiatric support
- Physiological changes associated with a normal pregnancy and delivery
- Disease management precautions in the pregnant patient; risks and avoidance of pulmonary aspiration; methods of avoiding aorto-caval compression; cardiopulmonary resuscitation of the pregnant patient
- Identification of unexpected concurrent pregnancy in a critically ill woman
- Awareness of the psychological impact of separation on the family

SKILLS

- Recognise and diagnose commonly encountered acute medical conditions
- Acquire, interpret, synthesize, record, and communicate (written and verbal) clinical information
- Develop a working, and limited differential diagnosis based on presenting clinical features
- Recognise impending organ system dysfunction
- Order and prioritise appropriate investigations
- Establish a management plan based on clinical and laboratory information
- Critically appraise the evidence for and against specific therapeutic interventions or treatments
- Prioritise therapy according to the patient's needs
- Consider potential interactions when prescribing drugs & therapies
- Identify and manage chronic co-morbid disease
- Identify and evaluate requirements for continuation of chronic treatments during and after the acute illness
- Take chronic health factors into account when determining suitability for intensive care

- Evaluate the impact of chronic disease and prior health on outcomes
- Define targets of therapy and review efficacy at regular intervals
- Consider modifying diagnosis and/or therapy if goals are not achieved
- Optimise myocardial function
- Use fluids and vasoactive / inotropic drugs to support the circulation
- Identify and avoid factors contributing to impaired renal function
- Identify patients at risk of developing renal failure
- Initiate, manage and wean patients from renal replacement therapy
- Perform aseptic urinary catheterisation: male and female
- Identify patients at risk of acute liver failure
- Interpret laboratory tests of liver function
- Prevent, identify and manage hyper / hypoglycaemia
- Identify and manage coagulopathies
- Examine and plan care for the confused patient
- Assess and document Glasgow Coma Scale (GCS)
- Recognise changes in intracranial and cerebral perfusion pressure which are life threatening
- Take prompt action to reduce acutely elevated intracranial pressure
- Undertake or assist in the insertion and maintenance of an intracranial pressure monitor
- Obtain and interpret data from intracranial pressure monitoring
- Manage cardiorespiratory physiology to minimise rises in intracranial pressure
- Prevent, identify and treat hyponatraemia
- Implement emergency airway management, oxygen therapy and ventilation as indicated
- Demonstrate emergency relief of tension pneumothorax
- Perform thoracocentesis and manage intercostal drains
- Select the appropriate type and mode of ventilation for an individual patient
- Plan, implement, review and adapt lung protective approach during mechanical ventilation
- Plan, perform and review lung recruitment manoeuvres

- Assess, predict and manage circulatory shock
- Measure and interpret haemodynamic variables (including derived variables)
- Resuscitate a patient with septic shock using appropriate monitoring, fluid therapy and vasoactive agents
- Manage antimicrobial drug therapy
- Obtain and interpret results of microbiological tests
- Perform a lumbar puncture under supervision
- Perform abdominal paracentesis using ultrasound guidance
- Liaise with obstetric and midwifery services
- Manage pregnancy-induced hypertension and related conditions
- Determine when the patient's needs exceed local resources or specialist expertise (requirement for transfer)
- Lead, delegate and supervise others appropriately according to experience and role
- Recognise and manage emergencies; seek assistance appropriately

ATTITUDES

- Demonstrates a commitment to collect all relevant information (from history, clinical examination and investigations) when seeking to establish a critical illness diagnosis and when making decision about disease management
- Promotes respect for patient safety, privacy, dignity and confidentiality, and demonstrates compassion for patients
- Appreciates the importance of timely institution of appropriate specific therapies and organ-system support (and understands the differences between these categories of therapy)
- Demonstrates curiosity and an enquiring mind, keeps up to date with published literature relevant to critical illness management
- Adopts a problem-solving approach to diagnosis and disease management
- Consults, communicates and collaborates effectively with patients, relatives and the health care team
- Models good workplace behaviours, in particular is hard-working, motivated and dedicated to high quality patient care
- Recognises personal limitations when managing patients with critical illness; seeks and accepts assistance or supervision (knows how, when and who to ask)

METHODS OF LEARNING AND ASSESSMENT

- Formative assessment/Learning:

- Consultant feedback in the workplace
- Training supervisor's report from interim competence assessment: feedback discussion between trainee and training supervisor during ICM module (from observation of daily performance by training supervisor and other consultants within the ICU)
- Workplace-based assessments: DOPS; CbD; Mini-CEX
- eLogbook review with training supervisor
- Intensive Care Simulation course (JFICMI) – mandatory
- Difficult airway workshop (College of Anaesthesiologists) - mandatory
- BASIC course (Intensive Care Society of Ireland) – mandatory
- Beyond BASIC: Mechanical Ventilation course (Intensive Care Society of Ireland) – desirable
- Beyond BASIC: Nephrology course (Intensive Care Society of Ireland) – desirable
- JFICMI Examination short course (JFICMI) – desirable
- ACLS – mandatory
- ATLS – desirable
- Trainee clinical and educational presentations

- Summative Assessment:
  - Training supervisor's report from end-of-term competence assessment: feedback discussion between trainee and training supervisor (from observation of daily performance by training supervisor and by other consultants within the ICU)
  - JFICMI Fellowship examination:
  - eLogbook review with training supervisor
  - Entrustable professional activities: rated using workplace-based assessments, eLogbook and consultant observation of daily clinical performance (planned process of phased introduction)
  - Interim meeting between trainee and JFICMI Training Committee members to ensure all year 1 (Clinical ICM Fellow) requirements satisfied and that trainee can progress to year 2 (Advanced Clinical Fellow)

Final meeting (Exit Interview) between trainee and JFICMI Training Committee members to ensure all training requirements satisfactorily have been completed

MEDICAL COUNCIL DOMAINS OF GOOD PROFESSIONAL PRACTICE

- Relating to patients
- Clinical skills
- Communication and interpersonal skills
- Collaboration and teamwork
- Scholarship
- Patient safety and quality of patient care

DOMAIN 4: THERAPEUTIC INTERVENTIONS/ORGAN SYSTEM SUPPORT IN SINGLE OR MULTIPLE ORGAN FAILURE

LEARNING OBJECTIVES – THE TRAINEE IS ABLE TO

- *prescribe drugs and therapies safely*
- *manage antimicrobial therapy*
- *administer blood and blood products safely*
- *use fluids and vasoactive drugs to support the circulation*
- *describe the use of mechanical assist devices to support the circulation*
- *initiate, manage and wean patients from high-flow oxygen therapies as well as invasive and non-invasive ventilatory support*
- *initiate, manage and wean patients from renal replacement therapy*
- *recognise and manage electrolyte, glucose and acid-base disturbances*
- *co-ordinate and provide nutritional assessment and support*

KNOWLEDGE

- Clinical pharmacology:
    - Indications, contraindications, mode of action, pharmacodynamics, pharmacokinetics and interactions of commonly used drugs including:
        - hypnotics, sedatives and intravenous anaesthetic agents

        - simple & opioid analgesics; opioid antagonists
        - non-steroidal anti-inflammatory agents
        - neuromuscular blocking agents (depolarising & non-depolarising) & anti-cholinesterases
        - drugs acting on the autonomic nervous system (inotropes, vasodilators, vasoconstrictors, antiarrhythmics)
        - respiratory stimulants and bronchodilators
        - anti-hypertensives
        - anti-convulsants
        - anti-diabetic agents
        - diuretics
        - antibiotics (antibacterial, antifungal, antiviral, antiprotozoal, antihelmintics)
        - corticosteroids and hormone preparations
        - drugs influencing gastric secretion & motility; antiemetic agents
        - local anaesthetic agents
        - immunosuppressants (including monoclonal antibody agents)
        - antihistamines
        - antidepressants
        - anticoagulants (including NOACs/DOACs)
        - plasma volume expanders
    - Adverse effects and interactions of drugs and their management
    - Recognition and management of serious adverse reactions and anaphylaxis (including allergy delabelling)
    - Local policies and procedures governing the prescription of drugs and therapies
    - Indications for and basic interpretation of drug levels in blood or plasma
    - Impact of drug therapy on organ-system function
    - Effects of concomitant treatment and/or co-morbid conditions on an individual patient's response to treatment
- Clinical microbiology:
    - Epidemiology and prevention of infection in the ICU
    - Types of organisms - emergence of resistant strains, mode of transfer, opportunistic and nosocomial infections; difference between contamination, colonisation & infection

- Risk factors for nosocomial infection and infection control measures to limit its occurrence
- Local patterns of bacterial resistance and antibiotic policy
- Indications, complications, interactions, selection, monitoring, and efficacy of common antimicrobial drugs (antibacterial, antifungal, antiviral, antiprotozoal, antihelmintics)
- Requirements for microbiological surveillance and clinical sampling
- Safe use of therapies which modify the inflammatory response
- Management strategies in the setting of a pandemic

- Clinical biochemistry/fluid management:
  - Interpret data from an arterial blood gas sample
  - Physiology of fluid, electrolyte, acid-base and glucose control
  - Methods to assess and monitor intravascular volume and state of hydration using clinical signs and modern technology
  - Pathophysiological consequences, signs and symptoms of disordered fluid, electrolyte, acid-base and glucose balance
  - Treatment strategies for abnormalities of fluid, electrolyte, acid-base and glucose balance
  - Fluid therapies: components, physical properties, distribution and clearance of commonly used fluids; indications, contraindications and complications of their administration
  - Indications for and interpretation of fluid balance charts
  - Theoretical advantages and disadvantages of crystalloid and colloid solutions
- Clinical haematology
  - Indications for and basic interpretation of haematological tests (including coagulation and sickle tests)
  - Indications for and basic interpretation of blood grouping and x-matching
  - The pathogenesis and management of anaemia, thrombocytopenia, neutropenia and pancytopaenia Indications for, contraindication, risks and alternatives to blood transfusion
  - Local protocols which govern the ordering, storage & verification procedures, monitoring during administration of blood products and reporting of adverse incidents
  - Principles of blood and blood component therapy; principles of massive transfusion
  - Infections from contaminated blood / body fluids; strategy if contaminated (e.g. needle stick injury)
  - Coagulation and fibrinolytic pathways, and their associated disorders; clinical, laboratory and “near-patient” testing of haemostasis

- Risk of bleeding: indications, contraindications, monitoring and complications of therapeutic anticoagulants, thrombolytic and anti-thrombolytic agents
- Principles of therapeutic plasma exchange (TPE)

- Cardiovascular:
  - Pathophysiology, detection and management of shock states according to aetiology and in response to physiological data
  - Principles of haemodynamic monitoring - invasive & non-invasive methods, indications & limitations, physiological parameters and waveform interpretation
  - Invasive & non-invasive systems available for measuring cardiac output and derived haemodynamic variables, the principles involved and the type and site of placement of the monitoring device
  - Indications, limitations and complications of techniques of measurement of cardiac output (e.g. pulmonary artery catheters, oesophageal Doppler, PiCCO, LiDCO) and action to prevent them
  - Integration of data from clinical examination and haemodynamic monitoring to characterise haemodynamic derangements
  - Receptor-specific effects of inotropic and vasopressor agents; effects of critical illness and concomitant therapies on receptor function (e.g. down-regulation)
  - Indications and contraindications, limitations and complications of inotropic / vasoactive drug therapy
  - Interactions between inotropic agents and concomitant therapies and/or co-morbid diseases (e.g. ischaemic heart disease)
  - Pathophysiology and treatment of cardiac failure
  - Principles of right and left ventricular assist devices, extracoporeal cardiac life support
  - Principles and techniques of cardiac pacing
  - Indications, contraindications, complications and basic principles of intra-aortic counter pulsation balloon pump
- Respiratory:
  - Causes of respiratory failure, their prevention and management
  - Principles of oxygen therapy and use of oxygen administration devices (including the risk of oxygen toxicity)
  - Signs and symptoms of acute airway insufficiency and acute respiratory failure, and indications for intervention
  - Distinguishing features of acute versus chronic respiratory failure and implications for management

- Principles of emergency airway management (see 5.3)
- Indications for and methods of invasive and non-invasive mechanical ventilation
- Principles of continuous positive airways pressure (CPAP) and positive end-expiratory pressure (PEEP) and CPAP & PEEP delivery systems (including non-invasive BiPAP)
- Modes of mechanical ventilation - indications, contraindications & expected results of each mode (CMV, IRV, PRVC, HFOV, SIMV, PS, CPAP, NAVA, APRV)
- Operation of at least one positive pressure ventilator, one non-invasive ventilator, and a constant positive airway pressure (CPAP) device
- A systematic approach to checking ventilator, breathing circuit and monitoring devices
- Initial set-up and modification of ventilator settings according to the condition or response of the patient
- Principles of monitoring ventilation - significance of respiratory rate, tidal volume, minute volume, mean, peak, end expiratory and plateau pressure, intrinsic and extrinsic PEEP, inspired oxygen concentration, arterial blood gas and acid base status; relationship between mode of ventilation and choice of parameters monitored; airflow and airway pressure waveforms
- Measurement and interpretation of pulmonary mechanics during mechanical ventilation
- Potential adverse effects and complications of respiratory support and methods to minimise these
- Ventilator associated pneumonia: definition, pathogenesis and prevention
- Causes of lung injury in ventilated patients; effects and clinical manifestations of pulmonary barotrauma
- Effect of ventilation upon cardiovascular and oxygen delivery parameters, other organ function and how these effects can be monitored (heart-lung interactions)
- Principles of physiotherapy in the ICU
- Principles of weaning from mechanical ventilation and factors which may inhibit weaning
- Indications and contraindications to tracheostomy (percutaneous and surgical) and minitracheostomy; Management of and complications associated with tracheostomy tubes; Principles of veno-venous extra-corporeal membrane oxygenation (ECMO)

- Renal:
  - Signs, symptoms and causes of kidney injury/disease (acute / chronic / acute on chronic) and indications for intervention

- Investigation of impaired kidney function
- Distinguishing features of acute versus chronic kidney injury/disease and implications for management
- Indications, complications and selection of renal replacement therapies (continuous and intermittent) including timing of starting and stopping RRT
- Placement & management of invasive devices necessary for renal replacement therapy (e.g. temporary haemodialysis catheter)
- Principles of haemofiltration, haemodialysis, peritoneal dialysis, haemoperfusion and plasmapheresis
- Function and operation of continuous haemodiafiltration devices (key components & trouble-shooting)
- Effect of renal failure and its treatment on other organ systems
- Nephrotoxic drugs and adjustment of drug doses in renal impairment/failure
- Anticoagulation strategies during renal replacement therapy (including citrate anticoagulation and appropriate therapies when heparin is contraindicated, e.g. HITTS)

- Gastrointestinal tract/Nutrition:
  - Patterns of nutritional impairment; consequences of starvation and malnutrition
  - Methods to assess nutritional status and basal energy expenditure
  - Fluid & caloric requirements in the critically ill patient including electrolytes, vitamins, trace elements, probiotics and principles of immunonutrition
  - Indications, limitations, methods, and complications of enteral and parenteral nutritional techniques (drawn from current Critical Care Nutrition Guidelines)
  - Nutritional formulations: indications, complications and their management
  - Principles of nasogastric cannulation in the intubated and non-intubated patient
  - Alternative routes for enteral feeding: indications, contraindications and complications of post-pyloric and percutaneous feeding tube placement
  - Prevention of stress ulceration
  - Gut motility: effects of drugs, therapy and disease
  - Causes of regurgitation and vomiting; prevention and management of pulmonary aspiration
  - Prevention and management of constipation and diarrhoea
  - Techniques for preventing gastrointestinal microbial translocation

- Principles of blood glucose control: indications, methods, monitoring of safety & efficacy
- Miscellaneous:
  - Prophylactic therapies and indications for their use
  - Concept of risk:benefit ratio and cost effectiveness of therapies
  - Complications of specific therapies, their incidence and management
  - Circumstances when treatment is unnecessary
  - Effect of critical illness upon homeostatic mechanisms and causes of homeostatic disturbances

SKILLS

- Prioritise therapy according to the patient's needs
- Establish a management plan based on clinical and laboratory information
- Consider potential interactions when prescribing drugs & therapies
- Consider risk-benefit and cost-benefit of alternative drugs & therapies
- Obtain informed consent/assent from the patient where appropriate
- Critically appraise the evidence for and against specific therapeutic interventions or treatments
- Set realistic goals for therapy (independently or in collaboration with other teams)
- Define targets of therapy and review efficacy at regular intervals
- Consider modifying diagnosis and/or therapy if goals are not achieved
- Recognise when treatment is unnecessary or futile
- Administer intravenous drugs (prepare, select route and mode of administration and document)
- Use infusion pumps to administer drugs and fluids
- Prescribe appropriate antimicrobial therapy based on history, examination and preliminary investigations
- Collaborate with microbiologists / infectious diseases clinicians to link clinical, laboratory and local (hospital / regional / national) microbiological data
- Choose appropriate fluid, volume, rate and method of administration
- Administer and monitor response to repeated fluid challenges
- Consider and exclude unknown pathology if goals of fluid therapy are not achieved (e.g. continued bleeding)
- Select an appropriate inotrope / vasopressor - dose, physiological endpoint, rate and route of administration

- Order, check, verify and administer blood products according to local protocols
- Identify and correct haemostatic and coagulation disorders
- Resuscitate a patient with septic shock using appropriate monitoring, fluid therapy and vasoactive agents
- Measure and interpret haemodynamic variables (including derived variables)
- Identify and treat underlying causes for a metabolic acidosis
- Select the appropriate type and mode of ventilation for an individual patient
- Identify and correct ventilator misassembly and disconnections
- Stabilise a patient on a constant positive airway pressure (CPAP) device
- Stabilise a patient on a non-invasive ventilator (NIV)
- Stabilise a patient on a positive pressure ventilator
- Confirm adequate oxygenation and control of $PaCO_2$ and pH
- Set and interpret data from ventilator alarms
- Construct, monitor and review a weaning plan
- Identify and avoid factors contributing to impaired renal function
- Supervise the provision of continuous renal replacement therapy
- Set appropriate exchange and fluid balances for renal replacement therapies
- Modify fluid and electrolyte therapy according to clinical features and fluid balance charts
- Prescribe and manage anticoagulation therapy
- Correct electrolyte disorders (e.g. hyperkalaemia, hyponatraemia)
- Prevent hypokalaemia
- Institute and manage a regimen to control blood glucose within safe limits
- Prescribe an appropriate standard enteral feeding regimen
- Identify surgical and other contraindications to enteral feeding
- Prescribe and supervise safe administration of a standard / customized parenteral (TPN) preparation
- Collaborate with nursing staff / clinical dietician in monitoring safe delivery of enteral and parenteral nutrition
- Liaise with clinical dieticians / medical team to plan feeding regimens after discharge from the ICU
- Recognise and manage emergencies; seek assistance appropriately

JFICMI Curriculum & Minimum Training Requirements
October 2023

ATTITUDES

- Appreciates the importance of timely goal-oriented resuscitation and institution of organ-system support
- Recognises the need for supportive care for all organ systems whether failing / injured or not
- Appreciates the importance of ensuring physiological safety as a primary aim
- Maintains the highest standards in clinical and technical practice
- Demonstrates effective non-technical skills (task management, team working, situational awareness and decision-making)
- Is clear in communicating with and providing explanations to patient, relatives and staff
- Demonstrates courtesy and empathy during interactions with patients, relatives and staff
- Establishes trusting relationships with and demonstrates compassionate care of patients and their relatives
- Models effective interpersonal behaviours with other healthcare staff, demonstrating the qualities of leadership, courtesy, collaboration and empathy
- Models good workplace behaviours, in particular is hard-working, motivated and dedicated to high quality patient care
- Demonstrates dedication to maintaining patient safety as a priority
- Demonstrates dedication to optimising workplace safety for self and healthcare staff (including appropriate infection control strategies)
- Recognises personal limitations, seeks and accepts assistance or supervision (knows how, when and who to ask). Takes responsibility for patient up to but not beyond level of personal limitations
- Respects the ideas and beliefs of the patient and their family and their impact on decision making (does not impose own views)
- Respects the expressed wishes of competent patients
- Lead, delegate and supervise others appropriately according to experience and role
- Recognises personal limitations, seeks and accepts assistance or supervision (knows how, when and who to ask)

METHODS OF LEARNING AND ASSESSMENT

- Formative assessment/Learning:
    - Consultant feedback in the workplace

- Training supervisor's report from interim competence assessment: feedback discussion between trainee and training supervisor during ICM module (from observation of daily performance by training supervisor and other consultants within the ICU)
- Workplace-based assessments: DOPS; CbD; Mini-CEX
- eLogbook review with training supervisor
- Intensive Care Simulation course (JFICMI) – mandatory
- Difficult airway workshop (College of Anaesthesiologists) - mandatory
- BASIC course (Intensive Care Society of Ireland) – mandatory
- ACLS – mandatory
- ATLS – desirable
- Trainee clinical and educational presentations

- Summative Assessment:
  - Training supervisor's report from end-of-term competence assessment: feedback discussion between trainee and training supervisor (from observation of daily performance by training supervisor and by other consultants within the ICU)
  - JFICMI Fellowship examination:
  - eLogbook review with training supervisor
  - Entrustable professional activities: rated using workplace-based assessments, eLogbook and consultant observation of daily clinical performance (planned process of phased introduction)
  - Interim meeting between trainee and JFICMI Training Committee members to ensure all year 1 (Clinical ICM Fellow) requirements satisfied and that trainee can progress to year 2 (Advanced Clinical Fellow)
  - Final meeting (Exit Interview) between trainee and JFICMI Training Committee members to ensure all training requirements satisfactorily have been completed

MEDICAL COUNCIL DOMAINS OF GOOD PROFESSIONAL PRACTICE

- Relating to patients
- Clinical skills
- Scholarship

- Professionalism
- Patient safety and quality of patient care

DOMAIN 5: SAFE USE OF PRACTICAL PROCEDURES

LEARNING OBJECTIVES – THE TRAINEE IS ABLE TO

- *administer oxygen using a variety of delivery devices*
- *describe emergency surgical airway management*
- *perform videolaryngoscopy, fibreoptic intubation and/or fibreoptic laryngoscopy*
- *perform endotracheal suction*
- *perform fibreoptic bronchoscopy and bronchoalveloar lavage (BAL) in the intubated patient*
- *perform percutaneous tracheostomy*
- *perform thoracocentesis via a chest drain (wide-bore drain for pneumothorax mandatory; ultrasound-guided drainage of pleural effusions desirable)*
- *perform peripheral venous catheterisation*
- *perform arterial catheterisation*
- *describe a method for surgical isolation of a vein/artery*
- *perform ultrasound for vascular localisation (central venous catheter/haemodialysis catheter)*
- *perform central venous catheterisation*
- *perform defibrillation and cardioversion*
- *perform and/or manage cardiac pacing (transvenous, transthoracic or epicardial)*
- *describe how to perform pericardioentesis*
- *demonstrate a method for measuring cardiac output and for deriving haemodynamic variables*
- *perform lumbar puncture*
- *manages the administration of analgesia via an epidural catheter (including troubleshooting an epidural delivery system)*
- *manages the administration of analgesia via regional local anaesthesia catheters (e.g. rectus sheath catheter)*

- *perform nasogastric tube placement*
- *perform abdominal paracentesis using ultrasound guidance*
- *describe placement and management of Sengstaken-Blakemore/Minnesota tube (or equivalent)*
- *describe indications for, and safe conduct of gastroscopy*
- *perform urinary catheterisation*
- *perform removal of tunnelled venous catheter device (e.g. Hickmann line)*

KNOWLEDGE

- Respiratory
    - Anatomy and bronchoscopic appearance of the upper and lower airways
    - Methods of maintaining a clear airway
    - Indications, selection and insertion of oral (Guedel) airways, nasopharyngeal airways and laryngeal mask airways (LMA)
    - Tracheal intubation: selection of tube type, diameter & length; indications and techniques; methods to confirm correct placement of a tracheal tube
    - Appropriate use of drugs to facilitate airway control
    - Monitoring during sedation/induction of anaesthesia for endotracheal intubation
    - Airway management in special circumstances, (head injury, full stomach, upper airway obstruction, shock, cervical spine injury, ankylosing spondylitis)
    - Causes of regurgitation and vomiting; prevention and management of pulmonary aspiration
    - Cricoid pressure: indications and safe provision
    - Management of difficult intubation and failed intubation (standard algorithms/guidelines)
    - Indications for and principles of fibreoptic intubation; use of fibreoptic intubation with airway adjuncts
    - Indications and methods of securing an emergency surgical airway (FONA - Front of Neck Access)
    - Anatomical landmarks for cricothyroidotomy/tracheostomy/mini-tracheotomy
    - Indications and techniques for needle and surgical cricothyroidotomy (FONA)
    - Indications and contraindications to tracheostomy (percutaneous and surgical) and mini-tracheostomy
    - Techniques for percutaneous and surgical tracheotomy
    - Manage anaesthesia and control the airway during initial tracheostomy tube insertion in the intensive care unit (ICU)

- Management of and complications associated with tracheostomy tubes
- Principles of endotracheal suctioning, including consequences of the procedure during ventilation
- Environmental hazards associated with storage and use of oxygen; strategies to promote safety
- Use of pipeline gas and suction systems
- Storage and use of oxygen, nitric oxide (NO), compressed air and helium, including use of gas cylinders
- Principles of pressure regulators, flow meters, vaporizers and breathing systems
- Indications for and operation of fixed and variable performance oxygen therapy equipment, humidification and nebulising devices
- Indications and complications of hyperbaric oxygenation
- Methods of bronchoscopy via an endotracheal tube
- Methods of broncho-alveolar lavage (BAL) in an intubated patient
- Safety and maintenance of flexible fibreoptic endoscopes
- Detection and management of haemo-/pneumothorax (simple and tension)
- Anatomical landmarks for intrapleural drains
- Insertion and management of chest drains and air exclusion devices, including patients requiring CT- or ultrasound-guided chest drain insertion

- Cardiovascular:
  - Surface anatomy: structures in the antecubital fossa; large veins and anterior triangle of the neck; large veins of the leg and femoral triangle; arteries of the arms and legs
  - Methods for securing vascular access rapidly
  - Principles, routes and techniques of peripheral and central venous cannulation
  - Principles and techniques for surgical isolation of a vein or artery
  - Methods for insertion of a tunnelled central venous catheter (e.g. for parenteral nutrition or chemotherapy)
  - Indications, contraindications, and complications of peripheral intravenous infusion / injection and central venous infusion / injection
  - Principles of arterial catheterisation
  - Allen's test - application & limitations
  - Recognition and management of inadvertent intra-arterial injection of harmful substances

- Principles of haemodynamic monitoring - invasive & non-invasive methods, indications & limitations, physiological parameters and waveform interpretation
- Zero and calibration techniques for invasive pressure monitoring
- Principles of ECG monitoring (heart rate, rhythm, conduction, ST segment change & QT interval) - indications, limitations and techniques. Advantages and disadvantages of different lead configurations
- Basic and complex cardiac arrhythmias - recognition and management (pharmacological and electrical)
- Principles and techniques of cardiac pacing
- Treatment (algorithm) of patients in ventricular fibrillation (VF) and pulseless ventricular tachycardia (VT)
- Defibrillation: principles of monophasic & biphasic defibrillators; mechanism, indications, complications, modes and methods (manual and automated external defibrillators (AED))
- Basic principles of ultrasound and the Doppler effect
- Detection and acute management of cardiac tamponade
- Anatomical landmarks and technique for percutaneous pericardial aspiration

- Neurology:
  - Physiological effects of pain and anxiety
  - Recognition and methods of assessment of pain
  - Pharmakokinetics, pharmacodynamics, indications and complications of opiates and local anaesthetic agents
  - Indications, contraindications, methods and complications of epidural catheterisation
  - Indications, contraindications and complications of epidural infusion / injection; principles of safe epidural drug administration
  - Contraindications, methods and complications of epidural catheter removal
  - Indications, contraindications and management of patient with rectus sheath catheter(s)
  - Indications for lumbar puncture and CSF sampling; laboratory analysis of CSF samples
- Gastrointestinal system
  - Principles of nasogastric cannulation in the intubated and non-intubated patient
  - Principles and techniques for insertion of gastro-oesophageal balloon tamponade tube (e.g. Sengstaken-Blakemore/Minnesota tube or similar)
  - Anatomy of the abdominal wall; landmarks for abdominal paracentesis and abdominal drainage catheters

- Indications, contraindications, complications and technique of abdominal paracentesis
- Alternative routes for enteral feeding: indications, contraindications and complications of post-pyloric and percutaneous feeding tube placement

- Miscellaneous:
  - Patient selection - indications, contraindications and potential complications of the procedure / intervention
  - Universal precautions and preventative infection control techniques (hand washing, gloves, protective clothing, sharps disposal etc.)
  - Principles of aseptic technique and aseptic handling of invasive medical devices
  - Methods and routes of insertion - associated indications and complications
  - Appropriate use of drugs to facilitate the procedure
  - Detection of potential physiological alterations during the procedure
  - Indications for specific monitoring to ensure patient safety during an intervention / procedure
  - Complications of the technique, how to prevent/recognise them and initiate appropriate treatment
  - Methods of sterilisation and cleaning or disposal of equipment
  - Management and use of the device once in situ necessary to minimise the risks of complications
  - Indications and technique for removal

SKILLS

- GENERIC
- Respiratory:
  - Accurately assess the airway for potential difficulties with airway management
  - Choose a safe environment to undertake airway management (or optimise environment as circumstances allow)
  - Optimise the patient's position for airway management
  - Maintain a clear airway using oral / nasal airways
  - Support ventilation using bag and mask
  - Insert and check correct placement of laryngeal mask airway
  - Select appropriate tracheal tube type, size and length
  - Perform intubation (using direct and videolaryngoscopy) and verify correct placement of tube

- Manage and minimise cardiovascular and respiratory changes during and after intubation
- Apply an end-tidal CO_2 detector post-intubation and interpret a capnograph trace
- Demonstrate rapid sequence induction of anaesthesia / cricoid pressure
- Change an orotracheal or nasotracheal tube
- Perform tracheal extubation, including the assessment for possible failed extubation (e.g. cuff leak test, physiological parameters)
- Prepare equipment for difficult or failed intubation
- Demonstrate failed intubation drill (according to local algorithm or protocol)
- Demonstrate (or describe the insertion of) minitracheotomy, needle cricothyroidotomy and emergency front of neck access (FONA)
- Change a tracheostomy tube electively
- Identify patients requiring tracheostomy; discuss indications and contraindications for percutaneous tracheostomy
- Demonstrate insertion of percutaneous tracheostomy
- Perform endotracheal suction (via oral / nasal / tracheostomy tube)
- Check pipelines; check and change portable cylinders
- Undertake bronchoscopy to assess tube position
- Undertake bronchoscopy to perform bronchoalveolar lavage
- Demonstrate aseptic insertion of an intrapleural chest drain and connection to a one-way seal device
- Demonstrate emergency relief of tension pneumothorax

- Cardiovascular:
  - Insert peripheral cannulas via different routes
  - Establish peripheral venous access appropriate for resuscitation in major haemorrhage
  - Chest x-ray interpretation (see 2.7)
  - Insert central venous catheters by different routes
  - Describe a method for tunnelled intravenous catheterisation
  - Minimise blood loss related to clinical investigations and procedures
  - Insert arterial catheters by different routes
  - Distinguish between arterial and venous blood samples

- Prepare equipment for intravascular pressure monitoring
- Measure and interpret haemodynamic variables (including derived variables)
- Obtain and interpret data from central venous catheters
- Obtain and interpret data from a pulmonary artery catheter, oesophageal Doppler or alternative cardiac output measurement technique
- Obtain and interpret data from ECG (3- and 12-lead)
- Insert (or describe the insertion of) a temporary pacing wire
- Demonstrate (or describe) emergency percutaneous pericardial aspiration
- Establish & review pacing box settings
- Use manual external defibrillators
- Use automated external defibrillators (AED)

- Neurology:
  - Select an appropriate epidural infusion regimen and titrate safely
  - Select & determine adequacy and route of administration of analgesia
  - Manage an established epidural infusion
  - Administer bolus analgesia via an epidural catheter
  - Minimise complications associated with opioid and non-opioid analgesics
  - Demonstrate diagnostic lumbar puncture
- Gastrointestinal system:
  - Insert a nasogastric tube in an intubated and non-intubated patient
  - Insert an abdominal ascitic drain using ultrasound guidance
- Miscellaneous:
  - Prioritise tasks and procedures
  - Select appropriate equipment or device & use resources efficiently
  - Prepare equipment, patient and staff prior to undertaking the procedure
  - Obtain informed consent/assent from the patient where appropriate
  - Use drugs as indicated to facilitate the procedure
  - Choose an appropriate route / method of insertion and position the patient accordingly

- Identify relevant anatomical landmarks
- Use protective clothing (gloves / mask / gown / drapes) as indicated
- Perform the procedure in a manner which minimises the risks of complications
- Undertake appropriate investigation to confirm correct placement of device or exclude complications
- Sterilise, clean or dispose of equipment appropriately
- Recognise and manage emergencies; seek assistance appropriately
- Demonstrate insertion of urinary catheter

ATTITUDES

- Promotes respect for patient privacy, dignity and confidentiality
- Recognises personal limitations, seeks and accepts assistance or supervision (knows how, when and who to ask)
- Minimises patient discomfort and distress in relation to monitoring devices, procedures and investigations
- Prioritises the amelioration of patient distress
- Accepts personal responsibility for the prevention of cross infection and self-infection
- Leads, delegates and supervises others appropriately according to experience and role
- Ensures safe and appropriate use of equipment and devices
- Supports other staff in the correct use of devices
- Maintains the highest standards in clinical and procedural practice
- Recognises the importance of patient consent and assent, the use of procedures in emergency situations, and the impact of current legislation on procedural practice

ETHODS OF LEARNING AND ASSESSMENT

- Formative assessment/Learning:
  - Consultant feedback in the workplace
  - Training supervisor's report from interim competence assessment: feedback discussion between trainee and training supervisor during ICM module (from observation of daily performance by training supervisor and other consultants within the ICU)
  - Workplace-based assessments: mainly through DOPS
  - eLogbook review with training supervisor (this is particularly important in the context of procedural skills)

- Intensive Care Simulation course (JFICMI) – mandatory
- Difficult airway workshop (College of Anaesthesiologists) - mandatory
- BASIC course (Intensive Care Society of Ireland) – mandatory
- Beyond BASIC; Mechanical Ventilation (desirable)
- ACLS – mandatory
- ATLS – desirable
- Trainee clinical and educational presentations

- Summative Assessment:
  - Training supervisor's report from end-of-term competence assessment: feedback discussion between trainee and training supervisor (from observation of daily performance by training supervisor and by other consultants within the ICU)
  - JFICMI Fellowship examination:
  - eLogbook review with training supervisor (this is particularly important in the context of procedural skills)
  - Entrustable professional activities: rated using DOPS, eLogbook and consultant observation of daily clinical performance (planned process of phased introduction)
  - Interim meeting between trainee and JFICMI Training Committee members to ensure all year 1 (Clinical ICM Fellow) requirements satisfied and that trainee can progress to year 2 (Advanced Clinical Fellow)
  - Final meeting (Exit Interview) between trainee and JFICMI Training Committee members to ensure all training requirements satisfactorily have been completed

MEDICAL COUNCIL DOMAINS OF GOOD PROFESSIONAL PRACTICE

- Relating to patients
- Clinical skills
- Patient safety and quality of patient care
- Communication and interpersonal skills

DOMAIN 6: PERI-OPERATIVE CARE

JFICMI Curriculum & Minimum Training Requirements
October 2023

LEARNING OBJECTIVES – THE TRAINEE IS ABLE TO

- *manage the pre- and post-operative care of the high risk non-cardiac surgical patient*
- *manage the care of the patient following cardiac surgery (including minimally invasive cardiac surgery, robotic surgery and endovascular surgery)*
- *manage (or describe) the care of the patient following craniotomy*
- *manage the care of the patient following solid-organ transplantation*
- *manage the safe liberation of patients from positive pressure ventilation (in particular patients following head and neck surgery)*
- *demonstrate an understanding about procedural steps of common surgical procedures, including surgical procedural terminology*

KNOWLEDGE

- Assessment and management of commonly encountered perioperative conditions & complications including:
  - Respiratory:
    - Interpretation of symptoms and signs of respiratory insufficiency in the surgical patient
    - Airway issues: the unprotected airway; upper and lower airway obstruction including laryngeal trauma & oedema
    - Pulmonary infiltrates: pneumonia, atelectasis, pulmonary infiltrates, acute respiratory distress syndrome (ARDS) and their causative factors; pulmonary oedema
    - Pleural disease: pleural effusion, haemo/pneumothorax (simple and tension); use of chest drains
    - Specific issues following thoracotomy, lung resection, oesophagectomy, cardiac surgery and thymectomy.
  - Cardiovascular
    - Interpretation of symptoms and signs of cardiovascular insufficiency in the surgical patient
    - Operative risk factors in patients with ischaemic heart disease;
    - Recognition and management of post-operative bleeding
    - Management of hypotension: pulmonary embolus; cardiac tamponade; hypovolaemic shock, myocardial infarction
    - Recognition and management of hypertension
    - Surgery for acquired and congenital cardiac disease
    - Specific issues following cardiac surgery (coronary grafting, valve replacement), aortic surgery (arch, thoracic, abdominal), and heart and heart-lung transplantation

- Renal:
  - Causes of perioperative oliguria and anuria
  - Prevention and management of acute renal failure
  - Specific issues following nephrectomy, ileal conduit formation, and renal transplantation
- Neurological:
  - Interpretation of symptoms and signs of neurological insufficiency in the surgical patient
  - Causes of post-operative confusion: delirium, stroke, drug effect, raised intracranial pressure; sepsis
  - Peri-operative management of patients with neuropathies and myopathies
  - Specific issues following neurosurgery: intracranial pressure monitoring; prevention of secondary brain injury, intracerebral haemorrhage; spinal cord injury & ischaemia
- Gastrointestinal:
  - Interpretation of abdominal symptoms and signs in the surgical patients: abdominal pain and distension; diarrhea and vomiting; persistent ileus; jaundice; surgical drain losses
  - Management of patients with acute necrotic pancreatitis
  - Recognition and management of abdominal hypertension and abdominal compartment syndrome
  - Peri-operative nutrition
  - Management of the pre- and post-liver transplant patient
  - Specific issues following surgery for peptic ulceration/upper GI haemorrhage, intestinal ischaemia and perforation
- Haematology/Oncology:
  - Care of the immunosuppressed patient
  - Complications of chemotherapy
  - Management of acute haemorrhage and blood transfusion in the setting of coagulation disorders, haemoglobinopathies and for patients on therapeutic anticoagulation.
- Metabolic/Endocrine:
  - Peri-operative management of patients with diabetes including peri-operative diabetic emergencies
  - Peri-operative management of patients with adrenocortical or thyroid disorders
  - Specific issues following surgery of the thyroid, adrenal and pituitary glands

        - Peri-operative management of electrolyte disorders.
    - Sepsis and infection:
        - Peri-operative infection risk and prophylactic antibiotics
        - Opportunistic and nosocomial infection including surgical site infection, respiratory infection, necrotizing fasciitis, peritonitis and peritoneal collections
    - Musculoskeletal:
        - Specific issues following surgery with external fixators, casts, pressure area care and salvage procedures
    - Solid organ transplantation (Heart, Lung, Liver, Renal)
        - Peri-operative considerations, pharmacological management, post operative care and potential complications
        - Immunosuppression and rejection
- Miscellaneous:
    - Recognition, assessment and management of acute pain
    - Indications and choice of agent for antibiotic prophylaxis
    - Indications for and methods of perioperative anti-thrombotic treatment
    - Factors determining perioperative risk
    - Methods of optimising high risk surgical patients
    - Importance of preoperative health status on postoperative outcomes
    - Indications for, and interpretation of pre-operative investigations
    - Dangers of emergency anaesthesia & surgery
    - Effect of gastric contents and dehydration on perioperative risk
    - Anaesthetic risk factors complicating recovery: suxamethonium apnoea; anaphylaxis; malignant hyperpyrexia; difficult airway
    - Criteria for admission to, and discharge from ICU - factors influencing intensity and site of care [ward, high dependency unit (HDU), intensive care unit (ICU)]
    - Perioperative implications of current drug therapy
    - Consent and assent in the competent and non-competent patient
    - Implications for postoperative care of common acute and chronic medical conditions
    - Implications of type of anaesthesia (general/regional/local) for perioperative care

- Implications of type / site of surgery for postoperative management and potential complications within the first 24 hours of surgery

SKILLS

- Optimise high-risk surgical patients before surgery: consider site of care and management plan (desirable)
- Communicate the risk of surgery to patients and family
- Consider the impact of long-term and chronic treatment on acute surgical care
- Accurately assess the airway for potential difficulties with airway management
- Ensure the necessary resources are available for safe post-operative care
- Identify pre-operative health status and intercurrent disease, medications, allergies and their interaction with the nature of anaesthetic and surgery
- Obtain relevant information from the patient, relatives and other secondary sources
- Interpret pre-operative investigations, intra-operative findings and events/complications, and respond to them appropriately
- Assess conscious level and conduct a careful systems review
- Select & determine adequacy and route of administration of analgesia
- Document, monitor and manage fluid balance, circulating volume, drains, systemic oxygen supply
- Establish a plan for postoperative management
- Recognise and manage perioperative emergencies and seek assistance appropriately
- Identify life-threatening cardiorespiratory complications; manage hypovolaemia and impaired oxygen delivery
- Manage post-operative hypo and hypertension
- Differentiate and manage tension pneumothorax, cardiac tamponade & pulmonary embolus
- Manage post-operative stridor
- Review and monitor perioperative immunosuppressive therapy
- Monitor and manipulate cerebral perfusion pressure (CPP)
- Describe the risk period for use of depolarizing neuromuscular blocking agents in patients undergoing repeated surgical procedures
- Lead, delegate and supervise others appropriately according to experience and role

JFICMI Curriculum & Minimum Training Requirements
October 2023

ATTITUDES

- Demonstrates a commitment to collect all relevant information (from history, clinical examination, investigations, surgical and anaesthesiology record) when managing a patient following major surgery
- Consults, communicates and collaborates effectively with anaesthesiologists, surgeons, nursing staff, other professionals, patients and relatives where appropriate
- Appreciates the importance of timely assessment and management of post-operative patients to reduce the risk of major post-surgical complications
- Maintains the highest standards in the care of the post-operative patient
- Demonstrates a commitment to minimise patient distress
- Displays attention to the management of effective pain control

METHODS OF LEARNING AND ASSESSMENT

- Formative assessment/Learning:
    - Consultant feedback in the workplace
    - Training supervisor's report from interim competence assessment: feedback discussion between trainee and training supervisor during ICM module (from observation of daily performance by training supervisor and other consultants within the ICU)
    - Workplace-based assessments: CbD; Mini-CEX
    - eLogbook review with training supervisor
    - Difficult airway workshop (College of Anaesthesiologists) - mandatory
    - BASIC course (Intensive Care Society of Ireland) – mandatory
    - ACLS – mandatory
    - ATLS – desirable
    - Trainee clinical and educational presentations
- Summative Assessment:
    - Training supervisor's report from end-of-term competence assessment: feedback discussion between trainee and training supervisor (from observation of daily performance by training supervisor and by other consultants within the ICU)

- JFICMI Fellowship examination:
- eLogbook review with training supervisor
- Entrustable professional activities: rated using workplace-based assessments, eLogbook and consultant observation of daily clinical performance (planned process of phased introduction)
- Interim meeting between trainee and JFICMI Training Committee members to ensure all year 1 (Clinical ICM Fellow) requirements satisfied and that trainee can progress to year 2 (Advanced Clinical Fellow)
- Final meeting (Exit Interview) between trainee and JFICMI Training Committee members to ensure all training requirements satisfactorily have been completed

MEDICAL COUNCIL DOMAINS OF GOOD PROFESSIONAL PRACTICE

- Relating to patients
- Clinical skills
- Communication and interpersonal skills
- Collaboration and teamwork
- Scholarship
- Patient safety and quality of patient care

DOMAIN 7: COMFORT AND RECOVERY

LEARNING OBJECTIVES – TRAINEE IS ABLE TO

- *identify and attempt to minimise the physical and psychosocial consequences of critical illness for patients and families*
- *manage the assessment, prevention and treatment of pain and delirium and other distress*
- *manage sedation and neuromuscular blockade*
- *Communicates the continuing care requirements of patients at ICU discharge to health care professionals, patients, and relatives*
- *manage the safe and timely discharge of patient from the ICU*

KNOWLEDGE

- Pain and anxiety

  - Causes of and methods of minimising distress in patients
  - Physiological effects of pain and anxiety
  - Recognition and methods of assessment of pain
  - Recognition and assessment of anxiety
  - Pharmakokinetics, pharmacodynamics, indications and complications of commonly used analgesic, hypnotic, and neuromuscular blocking drugs in patients with normal and abnormal organ system function
  - Principles of acute pain management
  - Patient-controlled analgesia
  - Indications, contra-indications, methods and complications of regional analgesia in critical illness
- Recognition of and the aetiology of neuropsychiatric and social complications of critical illness
  - Neuropsychiatric complications (depression, anxiety, post-traumatic stress disorders)
  - Adverse effects on socialisation and employment
  - Drug-related (e.g. hallucinations, drug withdrawal)
  - Sensory deprivation / sensory overload
  - Sleep deprivation and its consequences
  - Environmental factors (light, noise, pain, staff-patient interactions)
- Allied health issues
  - Methods of communicating with patients who are unable to speak
  - Principles of rehabilitation: physical and psychological
  - Supportive services integral to the long term rehabilitation of critically ill patients (physiotherapy, occupational therapy, speech and language therapy, orthotics, social services)
- Miscellaneous:
  - Consequences of immobilisation and mobilisation techniques (including disuse atrophy, foot-drop, ectopic calcification)
  - Causes, prevention and management of critical illness polyneuropathy, motor neuropathy, and myopathy
  - Principles of managing usual care to pressure areas, skin, mouth, eyes and bowels in critically ill patients
  - Resources available to patients and relatives for education and support (e.g. societies, local groups, publications, referral to allied health care professionals)

- Criteria for admission to, and discharge from ICU - factors influencing intensity and site of care (ward, high dependency unit (HDU), intensive care unit (ICU))
- Potential psychological impact of inter-hospital transfer and family dislocation
- Common risk factors for post-ICU mortality or ICU re-admission and their minimisation
- Methods of minimising the psychological impact of ICU discharge on patients and their families (in particular for long-stay ICU patients)
- Methods for assessing or measuring quality of life
- Management of tracheostomy care and avoidance of complications outside the ICU
- Facilitating patient speech when a tracheostomy is in situ
- Long-term ventilation outside the ICU environment (e.g. home ventilation)
- Persistent vegetative state
- The role of patient's relatives and their contribution to care
- Methods of measuring depth of sedation; effects of over-sedation and strategies to avoid this

SKILLS

- Identify complications associated with critical illness
- Work with colleagues and relatives to minimise patient distress
- Anticipate the development of pain and/or anxiety and adopt strategies for its prevention or minimisation
- Interpret data from scoring or scaling systems to assess pain and sedation
- Use analgesic, hypnotic and neuromuscular blocking drugs appropriately and safely
- Select & determine adequacy and route of administration of analgesia
- Minimise complications associated with opioid and non-opioid analgesics
- Obtain and interpret data from a nerve stimulator to monitor the degree of neuromuscular blockade
- Propose and implement a plan to provide adequate sleep and rest in ICU patients
- Communicate effectively with families who may be anxious, angry, confused, or litigious
- Participate in the education of patients/families
- Appropriate and timely referral to specialists / allied health professionals
- Identify discharge criteria for individual patients

- Ensure effective information exchange before patient discharge from ICU
- Take decisions to admit, discharge or transfer patients
- Liaise with medical and nursing staff in other departments to ensure optimal communication and continuing care after ICU discharge
- Change a tracheostomy tube electively
- Follow-up patients after discharge to the ward
- Participate in follow-up clinics / services where available
- Lead, delegate and supervise others appropriately according to experience and role

ATTITUDES

- Appreciates that physical and psychological consequences of critical illness can have a significant and long lasting effect for both patients and their relatives and demonstrates a commitment to mitigating these consequences
- Establishes trusting relationships with and demonstrates compassionate care of patients and their relatives
- Seeks to modify the stresses which the intensive care environment places upon patients, their relatives and members of staff
- Acknowledges the consequences of the language used to impart information; is clear in communicating with a providing explanations to patients and relatives
- Respects each patient as an individual with rights, agency and wills/preferences
- Respects the religious beliefs of the patient and is willing to liaise with a religious representative if requested by patient or family
- Willingness to communicate with and support families / significant others
- Embraces early planning for rehabilitation
- Recognises that intensive care is a continuum throughout the 'patient journey' and that transitions of care are high-risk and stressful periods for patients and their families
- Promotes appropriate and timely discharge from ICU, including the appropriate sharing of information with receiving healthcare teams

Fosters effective communication and relationships with medical and nursing staff in other wards / departments, including the patient's general practitioner

METHODS OF LEARNING AND ASSESSMENT

- Formative assessment/Learning:
    - Consultant feedback in the workplace
    - Training supervisor's report from interim competence assessment: feedback discussion between trainee and training supervisor during ICM module (from observation of daily performance by training supervisor and other consultants within the ICU)
    - Workplace-based assessments: CbD; Mini-CEX
    - eLogbook review with training supervisor
    - Trainee clinical and educational presentations
    - Trainee participation in ICU Multidisciplinary rounds with physiotherapy, occupational therapy and speech therapy services
- Summative Assessment:
    - Training supervisor's report from end-of-term competence assessment: feedback discussion between trainee and training supervisor (from observation of daily performance by training supervisor and by other consultants within the ICU)
    - JFICMI Fellowship examination:
    - eLogbook review with training supervisor
    - Entrustable professional activities: rated using workplace-based assessments, eLogbook and consultant observation of daily clinical performance (planned process of phased introduction)
    - Interim meeting between trainee and JFICMI Training Committee members to ensure all year 1 (Clinical ICM Fellow) requirements satisfied and that trainee can progress to year 2 (Advanced Clinical Fellow)
    - Final meeting (Exit Interview) between trainee and JFICMI Training Committee members to ensure all training requirements satisfactorily have been completed

MEDICAL COUNCIL DOMAINS OF GOOD PROFESSIONAL PRACTICE

- Relating to patients
- Clinical skills
- Professionalism
- Communication and interpersonal skills

- Collaboration and teamwork
- Management (including self-management)
- Scholarship
- Patient safety and quality of patient care

DOMAIN 8: END OF LIFE CARE

LEARNING OBJECTIVES – TRAINEE IS ABLE TO

- *manage the process of withholding or withdrawing life sustaining treatment with the multidisciplinary team*
- *discuss end of life care with patients and their families / surrogates*
- *manage palliative care of the critically ill patient*
- *recognises and identifies criteria for brainstem death*
- *manage the process of and physiological support around organ donation (including donation after brainstem death, donation after cardiac death and normothermic regional perfusion)*

KNOWLEDGE

- Basic ethical principles: autonomy, beneficence, non-maleficence, justice
- Ethical and legal issues in decision-making for the incompetent patient (as applied to new and emerging legislation)
- Difference between euthanasia and allowing death to occur: principle of double effect
- Withholding and withdrawing treatment: omission and commission
- The limitations of intensive care medicine - expectations of what can and cannot be achieved
- Decision-making processes for withholding and withdrawing life sustaining therapies including documentation and iterative review
- Principles of delivering bad news to patients and families
- Availability and access to local support for dying patients and their families
- Bereavement: anticipating and responding to grief
- Cultural and religious practices of relevance when caring for dying patients and their families

- Principles of pain and symptom management
- Procedure for withdrawing treatment and support
- Causes and prognosis of vegetative states
- Causes of brainstem death
- Applied anatomy and physiology of the brain and nervous system including cerebral blood supply, base of skull, autonomic nervous system and cranial nerves
- Physiological changes associated with brainstem death
- Preconditions and exclusions for the diagnosis of brainstem death
- Clinical, imaging and electrophysiologic tests to diagnose brain death
- Legal aspects of brainstem death diagnosis, and of circulatory death (Maastricht classification of Donation after Circulatory death - Category I-V where category III is Controlled Circulatory Death)
- Cultural and religious factors which may influence attitude to brainstem death and organ donation
- Principles of management of the organ donor (according to national / local policy)
- Common investigations and procedures undertaken in the ICU prior to organ procurement (including donation after brainstem death and donation after circulatory death)
- Role of national organ/tissue procurement authority and procedures for referral (ODTI in Ireland)
- Responsibilities and activities of transplant coordinators
- Responsibilities in relation to legal authorities for certifying death (e.g. coroner, procurator fiscal or equivalent), and reasons for referral
- The value of autopsy (post-mortem) examination.
- Procedure for completion of death certification

SKILLS

- Recognise when treatment is unnecessary or futile
- Discuss end of life decisions with members of the health care team
- Ability and willingness to communicate and discuss issues pertaining to end of life with patients and relatives
- Differentiate competent from incompetent statements by patients

- Discuss treatment options with a patient or relatives before ICU admission
- Participate in timely discussion and regular review of 'do not resuscitate' orders and treatment limitation decisions
- Participate in discussions with relatives about treatment limitation or withdrawal
- Communicate effectively with relatives who may be anxious, angry, confused, or litigious
- Lead a discussion about end of life goals, preferences and decisions with a patient and/or their relatives
- Explain the concept of brainstem death and organ donation clearly (donation both after brainstem death and circulatory death)
- Obtain consent/assent for treatment, research, autopsy or organ donation
- Withdraw life sustaining treatment or organ support
- Relieve distress in the dying patient
- Document pre-conditions and exclusions to brainstem death testing
- Perform and document tests of brainstem function to confirm a diagnosis of brainstem death
- Consult and confirm findings of brainstem function tests with colleagues as required by local / national policy or as indicated
- Liaise with local transplant coordinators to plan management of the organ donor
- Recognise and rapidly respond to adverse trends in monitored parameters
- Aware of the emotional needs of self and others; seeks and offers support appropriately
- Establishes trusting relationships with and demonstrates compassionate care of patients and their relatives
- Integrity, honesty & respect for the truth underpin relationships with patients, relatives and colleagues
- Appreciates that the decision to withhold or withdraw treatment does not imply the termination of care
- Consult and take into account the views of referring clinicians; promote their participation in decision-making where appropriate

ATTITUDES

- Commitment to practice in an ethical, professional and respectful manner when managing patients and their relatives in the context of a terminal critical illness.
- Demonstrates a commitment to clear decision-making and communication
- Acknowledges the consequences of the language used to impart information
- Willingness to communicate with and support families / significant others
- Respects the ideas and beliefs of the patient and their family and their impact on decision making (does not impose own views)

- Respects the expressed wishes of competent patients
- Respects the religious beliefs of the patient and is willing to liaise with a religious representative if requested by patient or family
- Offers psychological, social and spiritual support to patients, their relatives or colleagues as required
- Committed to supporting patients, family, and other staff members appropriately during treatment withdrawal/end of life care
- Recognises personal limitations, and readily seeks support and input from other healthcare staff when reaching end of life decisions around patient care

METHODS OF LEARNING AND ASSESSMENT

- Formative assessment/Learning:
    - Consultant feedback in the workplace
    - Training supervisor's report from interim competence assessment: feedback discussion between trainee and training supervisor during ICM module (from observation of daily performance by training supervisor and other consultants within the ICU)
    - Workplace-based assessments: CbD; Mini-CEX
    - eLogbook review with training supervisor
    - Irish Donor Awareness Programme course (JFICMI) – mandatory
    - Guidelines on Brainstem Death and Management of the Organ Donor (Intensive Care Society of Ireland)
    - Medical Council Guide to Professional Conduct and Ethics
- Summative Assessment:
    - Training supervisor's report from end-of-term competence assessment: feedback discussion between trainee and training supervisor (from observation of daily performance by training supervisor and by other consultants within the ICU)
    - JFICMI Fellowship examination:
    - eLogbook review with training supervisor
    - Entrustable professional activities: rated using workplace-based assessments, eLogbook and consultant observation of daily clinical performance (planned process of phased introduction)

- Interim meeting between trainee and JFICMI Training Committee members to ensure all year 1 (Clinical ICM Fellow) requirements satisfied and that trainee can progress to year 2 (Advanced Clinical Fellow)
- Final meeting (Exit Interview) between trainee and JFICMI Training Committee members to ensure all training requirements satisfactorily have been completed
-

MEDICAL COUNCIL DOMAINS OF GOOD PROFESSIONAL PRACTICE

- Relating to patients
- Clinical skills
- Scholarship
- Communication and interpersonal skills
- Professionalism
- Patient safety and quality of patient care

DOMAIN 9: PAEDIATRIC CARE (Desirable)

LEARNING OBJECTIVES – TRAINEE IS ABLE TO

- *Adopt a structured and timely approach to the recognition, assessment and stabilisation of the acutely ill paediatric patient with disordered physiology.*
- *Manage a cardiopulmonary resuscitation.*
- *Recognises a child and young person requiring airway intervention.*
- *Hand ventilates a child with severe respiratory compromise.*
- *Manages the airway safely until help arrives which may necessitate performing intubation in the collapsed patient.*
- *Performs this intubation safely with appropriate use of anaesthetic agents, sedatives, analgesics and muscle relaxants.*
- *Recognises and provides initial management of the child with cardiogenic shock, severe sepsis and septic shock.*
- *Recognises and seeks advice for managing the various cardiac rhythms e.g., SVT in a newborn.*
- *Assesses and provides initial management of the trauma patient.*

- *Assesses and provides initial management of the child with burns*

KNOWLEDGE

- Key stages of physical and psychological development
- Major anatomical and physiological differences between adults and children
- Awareness and interpretation of the early warning signs of critical illness, including impending airway, breathing, cardiovascular and/or neurological failure.
- Recognition of life threatening changes in physiological parameters.
- Recognition of when organ dysfunctions or failures are an immediate threat to life.
- Causes of cardio-respiratory arrest in children, identification of patients at risk and corrective treatment of reversible causes.
- Causes, recognition and management of :
- Pathophysiology and principles of management of disorders which are life-threatening to paediatric patients including:
    - Upper airway obstruction e.g choking, croup, tracheitis, epiglottitis and liaising early with senior help
    - Acute respiratory failure (acute severe asthma, bronchiolitis, pneumonia)
    - Cardiac arrhythmias
    - Cardiogenic shock including the cyanotic newborn and the indications for prostin.
    - Severe sepsis and septic shock
    - Neurological emergencies e.g. status epilepticus, CVA and liaising early with senior help and neurosurgery
    - Burns and polytrauma
    - Acute fluid and electrolyte disturbances e.g hyper/hyponatraemia, hypo/hyper kalaemia, hypo/hypercalcaemia
    - Endocrine emergencies e.g DKA
    - Metabolic disorders and liaising with the metabolic team
    - GI abnormalities e.g severe gastroenetritis
- Paediatric resuscitation, in particular the differences between adult and paediatric resuscitation
- Principles of paediatric airway management: methods & techniques; calculation of tube sizes; selection of masks and airways
- Principles of mechanical ventilation in a child
- Preparation for and methods of securing venous access
- Intraosseous cannulation

- Volume status in paediatrics: estimation of blood volume; replacement of fluid losses
- Paediatric dosing of common emergency drugs
- General principles for stabilising the critically ill or injured child until senior assistance arrives
- Operation of local paediatric referral /retrieval services
- Principles of communication (verbal and non verbal) with children of different ages; awareness of the consequences of the language used to impart information
- Legal and ethical aspects of caring for children
- Issues of consent in children
- National child protection guidelines
- Impact of occupational and environmental exposures, socio-economic factors, and life style factors on critical illness

SKILLS

- Paediatric resuscitation at advanced life support level (APLS, PALS or equivalent)
- Prepare equipment & drugs for paediatric intubation
- Demonstrate paediatric tracheal intubation
- Manages the unanticipated difficult airway until help arrives
- Secure venous access (including local anaesthesia pre-medication)
- Manage mechanical ventilation in a critically ill child
- Communicate effectively with, and attempt to reassure the child and parents
- Recognise and manage paediatric emergencies until senior specialist assistance arrives
- Manage and stabilise the injured child until senior assistance arrives

ATTITUDES

- Demonstrates a commitment to collect all relevant information (from history, clinical examination and investigations) when seeking to establish a critical illness diagnosis
- Appreciates the importance of timely ordering and interpretation of appropriate investigations
- Promotes respect for patient privacy, dignity and confidentiality
- Acknowledges the input of parents in the assessment and management of acutely unwell children as well as the psychological impact of acute paediatric illness on parents and guardians

- Avoids unnecessary tests or extensive invasive procedures or monitoring which cannot be adequately interpreted at the bedside
- Minimises patient discomfort and distress in relation to monitoring devices, procedures and investigations
- Ensures safe and appropriate use of equipment and devices
- Supports other staff in the correct use of devices
- Demonstrates compassionate care of patients, parents and guardians
- Maintains the highest standards in clinical and technical practice
- Is clear in communicating with and providing explanations to patients, parents/guardians and to staff
- Demonstrates courtesy and empathy during interactions with patients, parents/guardians and to staff
- Establishes trusting relationships with and demonstrates compassionate care of patients and their parents/guardians
- Models effective interpersonal behaviours with other healthcare staff, demonstrating the qualities of leadership, courtesy, collaboration and empathy
- Models good workplace behaviours, in particular is hard-working, motivated and dedicated to high quality patient care
- Demonstrates dedication to maintaining patient safety as a priority
- Demonstrates dedication to optimising workplace safety for self and healthcare staff (including appropriate infection control strategies)

Recognises personal limitations, seeks and accepts assistance or supervision (knows how, when and who to ask). Takes responsibility for patient up to but not beyond level of personal limitations (early involvement of paediatric specialists as required)

METHODS OF LEARNING AND ASSESSMENT

- Formative assessment/Learning:
    - Consultant feedback in the workplace
    - Training supervisor's report from interim competence assessment: feedback discussion between trainee and training supervisor during ICM module (from observation of daily performance by training supervisor and other consultants within the ICU)
    - Workplace-based assessments: DOPS; CbD; Mini-CEX
    - eLogbook review with training supervisor
    - Difficult airway workshop (College of Anaesthesiologists) - mandatory

- APLS/PALS – desirable
- Trainee clinical and educational presentations

- Summative Assessment:
  - Training supervisor's report from end-of-term competence assessment: feedback discussion between trainee and training supervisor (from observation of daily performance by training supervisor and by other consultants within the ICU)
  - JFICMI Fellowship examination:
  - eLogbook review with training supervisor
  - Entrustable professional activities: rated using workplace-based assessments, eLogbook and consultant observation of daily clinical performance (planned process of phased introduction)
  - Interim meeting between trainee and JFICMI Training Committee members to ensure all year 1 (Clinical ICM Fellow) requirements satisfied and that trainee can progress to year 2 (Advanced Clinical Fellow)
  - Final meeting (Exit Interview) between trainee and JFICMI Training Committee members to ensure all training requirements satisfactorily have been completed

Commented [EO1]: Would we plan to put paediatric questions anywhere in JFICMI exam??

MEDICAL COUNCIL DOMAINS OF GOOD PROFESSIONAL PRACTICE

- Relating to patients
- Clinical skills
- Scholarship
- Communication and interpersonal skills
- Professionalism
- Patient safety and quality of patient care

DOMAIN 10: TRANSPORT

LEARNING OBJECTIVE – TRAINEE IS ABLE TO

- *undertake transport of the mechanically ventilated critically ill patient outside the ICU*

JFICMI Curriculum & Minimum Training Requirements
October 2023

KNOWLEDGE

- Indications, risks and benefits of patient transfer (intra- / inter-hospital)
- Criteria for admission to, and discharge from ICU - factors influencing intensity and site of care (ward, high dependency unit (HDU), intensive care unit (ICU))
- Principles of patient safety before, during and after episode of transfer
- Strategies to manage the unique problems associated with patient transfer - limitations of space, personnel, monitoring & equipment
- Advantages and disadvantages of road ambulance, fixed and rotary wing aircraft including problems associated with altitude, noise, lighting conditions, vibration, acceleration and deceleration
- Selection of mode of transport based upon clinical requirements, distance, vehicle availability and environmental conditions
- Determination of required number of physicians / nurses / others during transfer and the role of paramedical personnel
- Selection and operation of transport equipment: size, weight, portability, power supply/battery life, oxygen availability, durability and performance under conditions of transport
- Principles of monitoring under transport conditions
- Physiology associated with air transport
- Homeostatic interaction between patient and environment (e.g. thermoregulation, posture / positioning)
- Communication prior to and during transport
- Operation of locally available retrieval services
- Potential psychological impact of inter-hospital transfer and family dislocation

SKILLS

- Determine when the patient's needs exceed local resources or specialist expertise (requirement for transfer)
- Take decisions to admit, discharge or transfer patients
- Communicate with referring and receiving institutions and teams
- Check transfer equipment and plan transfers with personnel prior to departure
- Select appropriate staff based upon patient need
- Prepare patients prior to transfer; anticipate and prevent complications during transfer - maintain patient safety at all times

- Adapt and apply general retrieval principles where appropriate to pre-, intra-, and inter-hospital transportation
- Consider the need for stabilisation before transfer
- Undertake intra-hospital transfer of ventilated patients to theatre or for diagnostic procedures (e.g. CT, MRI, Interventional radiology)
- Undertake inter-hospital transfers of patients with single or multiple organ failure (desirable)
- Maintain comprehensive documentation of the patient's clinical condition before, during and after transport including relevant medical conditions, therapy delivered, environmental factors and logistical difficulties encountered
- Lead, delegate and supervise others appropriately according to experience and role

Commented [EO2]: Mandatory or desirable?

ATTITUDES

- Appreciates the importance of communication between referring, transporting and receiving staff
- Anticipates and prevents problems during transfer
- Maintains the highest standards in clinical and technical practice
- Demonstrates a desire to minimise patient distress while transported outside the ICU
- Demonstrates dedication to maintaining patient safety as a priority
- Recognises personal limitations, seeks and accepts assistance or supervision (knows how, when and who to ask)

METHODS OF LEARNING AND ASSESSMENT

- Formative assessment/Learning:
    - Consultant feedback in the workplace
    - Training supervisor's report from interim competence assessment: feedback discussion between trainee and training supervisor during ICM module (from observation of daily performance by training supervisor and other consultants within the ICU)
    - Workplace-based assessments: DOPS; CbD
    - eLogbook review with training supervisor (of particular importance for recording patient transfers)
    - Difficult airway workshop (College of Anaesthesiologists) - mandatory
    - BASIC course (Intensive Care Society of Ireland) – mandatory
    - ACLS – mandatory
    - ATLS – desirable

- National Transport Medicine Course (desirable)
- Trainee clinical and educational presentations

- Summative Assessment:
  - Training supervisor's report from end-of-term competence assessment: feedback discussion between trainee and training supervisor (from observation of daily performance by training supervisor and by other consultants within the ICU)
  - JFICMI Fellowship examination:
  - eLogbook review with training supervisor
  - Entrustable professional activities: rated using workplace-based assessments, eLogbook and consultant observation of daily clinical performance (planned process of phased introduction)
  - Interim meeting between trainee and JFICMI Training Committee members to ensure all year 1 (Clinical ICM Fellow) requirements satisfied and that trainee can progress to year 2 (Advanced Clinical Fellow)
  - Final meeting (Exit Interview) between trainee and JFICMI Training Committee members to ensure all training requirements satisfactorily have been completed

MEDICAL COUNCIL DOMAINS OF GOOD PROFESSIONAL PRACTICE

- Relating to patients
- Clinical skills
- Scholarship
- Collaboration and teamwork
- Communication and interpersonal skills
- Patient safety and quality of patient care

DOMAIN 11: PATIENT SAFETY AND HEALTH SYSTEMS MANAGEMENT

LEARNING OBJECTIVES – TRAINEE IS ABLE TO

- *lead a daily multidisciplinary ward round*

- *comply with local infection control measures*
- *identify environmental hazards and promote safety for patients and staff*
- *identify and minimise risk of critical incidents and adverse events, including complications of critical illness*
- *organise a case conference*
- *critically appraise and apply guidelines, protocols and care bundles*
- *describe commonly used scoring systems for assess of severity of illness, case mix and workload*
- *demonstrate an understanding of the managerial and administrative responsibilities of the ICU specialist*

KNOWLEDGE

- Clinical issues
    - Recognition of patient groups at high risk for developing complications
    - Pathogenesis, risk factors, prevention, diagnosis and treatment of complications of ICU management including:
        - Nosocomial infection
            - Epidemiology and prevention of infection in the ICU
            - Types of organisms - emergence of resistant strains, mode of transfer, opportunistic and nosocomial infections; difference between contamination, colonisation & infection
            - Risk of colonisation with potentially pathogenic micro-organisms and the factors associated with patient,
            - staff, equipment and environmental colonisation
            - Autogenous infection: routes and methods of prevention
            - Cross infection: modes of transfer and common agents
            - Universal precautions and preventative infection control techniques (hand washing, gloves, protective
            - clothing, sharps disposal etc.)
            - Requirements for microbiological surveillance and clinical sampling
            - Local patterns of bacterial resistance and antibiotic policy
            - Benefits and risks of different prophylactic antibiotic regimens
            - Principles of aseptic technique and aseptic handling of invasive medical devices
            - Methods of sterilisation and cleaning or disposal of equipment
            - Infections from contaminated blood / body fluids; strategy if contaminated (e.g. needle stick injury)

- Ventilator associated pneumonia (VAP)
  - Ventilator associated lung injury (pulmonary barotrauma, pulmonary oxygen toxicity)
  - Thromboembolism (venous, arterial, pulmonary, intracardiac)
  - Stress ulceration
  - Malnutrition
  - Critical illness polyneuropathy, motor neuropathy & myopathy
  - Neuropsychiatric complications (pain, delirium, PTSD, depression, cognitive impairment)
  - Haemorrhage

- Issues related to infrastructure:
  - Principles of local / national health care provision; strategic planning of the ICU service (structure, function, financing) within the wider health care environment
  - Physical requirements of ICU design
  - Staffing models in the ICU
  - Electronic health records, digital health, the impact of AI on ICM
  - Equipment requirements and selection: clinical need & priority; accuracy, reliability, safety and practical issues (ease of use, acceptance by Staff)
  - Local process for ordering consumables and maintaining equipment
  - Difference between absolute requirement and possible benefit when applying expensive technology to critically ill patients
  - Factors that determine the optimum staff establishment for specialist and junior medical staff, nurses and allied professional and non-clinical ICU staff
- Issues related to process of care:
  - Methods of effective communication of information (written; verbal etc)
  - Triage and management of competing priorities
  - Principles of crisis management, conflict resolution, negotiation and debriefing
  - Roles of different members of the multidisciplinary team and local referral practices
  - Purpose and process of quality improvement activities such as evidence based practice, best practice guidelines & benchmarking and change management

- Local policies, procedures and guidelines relevant to practice
- Treatment algorithms for common medical emergencies
- Published standards of care at local, national and international level (including consensus statements and care bundles)

- Issues related to quality assurance
  - Purpose and methods of clinical audit (e.g. mortality/morbidity reviews, complication rates)
  - Translating audit findings into clinical practice
  - Principles of a quality improvement including the implementation of a QI cycle (e.g. PDSA)
  - Recent advances in medical research relevant to intensive care
  - Principles of appraisal of evidence: levels of evidence; interventions; diagnostic tests; prognosis; integrative literature (systematic reviews, meta-analyses, RCTs, pragmatic research design, adaptive studies, practice guidelines, decision & economic analyses)
  - Electronic methods of accessing medical literature
  - Identification and critical appraisal of literature; integration of findings into local clinical practice
  - Principles of applied research and epidemiology necessary to evaluate new guidelines / forms of therapy
  - Critical incident or error monitoring
- Miscellaneous:
  - Principles of risk prevention
  - Common sources of error and factors which contribute to critical incidents / adverse events (ICU environment, personnel, equipment, therapy and patient factors)
  - Staff safety: susceptibility to harmful physical, chemical and infectious hazards in the ICU
  - Environmental control of temperature, humidity, air changes and scavenging systems for waste gases and vapours
  - Measurement of gas and vapour concentrations, (oxygen, carbon dioxide, nitric oxide, and volatile anaesthetic agents) - environmental safety
  - Hazards associated with ionising radiation and methods to limit these in the ICU
  - Electrical safety: conditions which predispose to the occurrence of macro-shock / micro-shock; physical dangers of electrical currents; relevant standards regarding safe use of electricity in patient care; basic methods to reduce electrical hazards.
  - Confidentiality and data protection - legal and ethical issues

- Professional responsibility and duty of care to patients placed at risk by the actions of fellow clinicians
- Plan of action / local procedures to be followed when a health care worker is noticed to be in distress, whether or not patients are considered to be at risk
- Principles of outcome prediction / prognostic indicators and treatment intensity scales; limitations of scoring systems in predicting individual patient outcome
- Process and outcome measurement
- Principles of general and organ-specific scoring systems and their usefulness in assessing likely outcome of an illness (e.g. Glasgow Coma Scale, APACHE II and III, PRISM, organ system failure scores, injury severity scores)
- Influence of injury or illness being considered on the validity of a scoring system as a predictor of likely outcome (e.g. Glasgow Coma Score (GCS) in head injury versus drug overdose)
- One general method for measuring severity of illness
- Principles of case mix adjustment
- Principles of care legislation applicable to ICM practice
- The non-clinical role of the ICU specialist and how these activities contribute to the efficacy of the ICU, the profile of the ICU within the hospital and the quality of patient management
- Principles of resource management; ethics of resource allocation in the face of competing claims to care
- Concept of risk:benefit ratio and cost effectiveness of therapies
- Principles of health economics, departmental budgeting, financial management and preparation of a business plan
- Principles of workforce planning
- Practical application of equal opportunities legislation

SKILLS

- Propose realistic initiatives / projects to promote improvement
- Contribute to departmental / ICU audit and quality-improvement activities
- Acquire, interpret, synthesize, record, and communicate (written and verbal) clinical information
- Assemble clinical and laboratory data, logically compare all potential solutions to the patient's problems, prioritise them and establish a clinical management plan
- Confirm accuracy of clinical information provided by members of the health care team

- Consider risk-benefit and cost-benefit of alternative drugs & therapies
- Consider potential interactions when prescribing drugs & therapies
- Establish a management plan based on clinical and laboratory information
- Awareness of relevant guidelines and consensus statements and apply these effectively in every day practice under local conditions
- Implement and evaluate protocols and guidelines
- Use a systematic approach to locate, appraise, and assimilate evidence from scientific studies relevant to a patient's health problem
- Use electronic retrieval tools (e.g. PubMed and UptoDate) to access information from the medical & scientific literature
- Recognise the need for clinical audit and quality improvement activities to be non-threatening and non-punitive to individuals
- Participate in the processes of clinical audit, peer review and continuing medical education
- Manage resistance to change in the ICU / hospital environment in order to optimize the outcome of a task
- Record relevant clinical information accurately
- Professional and reassuring approach - generates confidence and trust in patients and their relatives
- Organise multidisciplinary care for groups of patients in the ICU
- Plan long-term multidisciplinary care for patients in the ICU
- Identify members of the health care team which require representation at a case conference
- Timely organisation - liaise with members of the health care team to identify a suitable time and place for a case conference to maximise attendance
- Identify necessary notes / investigations to support discussion during a case conference
- Summarise a case history
- Accept personal responsibility for the prevention of cross infection and self-infection
- Demonstrate routine application of infection control practices to all patients, particularly hand washing between patient contacts
- Use protective clothing (gloves / mask / gown / drapes) as indicated
- Apply methods to prevent autogenous infection (e.g. posture, mouth hygiene)
- Implement prophylactic regimens appropriately
- Maximise safety in everyday practice

- Prescribe antibiotics safely and appropriately
- Demonstrate an interest in quality control, audit and reflective practice
- Seek expert help to ensure all equipment in the ICU conforms with the relevant safety standard
- Monitor complications of critical illness
- Document adverse incidents in a timely, detailed and appropriate manner
- Inform colleagues, patients and relatives as applicable, of medical errors or adverse events in an honest and appropriate manner (full disclosure)

ATTITUDES

- Leads, delegates and supervises others appropriately according to experience and role
- Respects, acknowledgse & encouragse the work of others
- Listens and communicates effectively
- Collaborates with other team members to achieve common goals
- Manages inter-personal conflicts which arise between different sectors of the organisation, professionals, patients or relatives
- Demonstrates initiative and motivation in problem solving
- Accepts responsibility for patient care and staff supervision
- Recognises impaired performance (limitations) in self and colleagues and takes appropriate action
- Recognises personal limitations, seeks and accepts assistance or supervision (knows how, when and who to
- ask)
- Consults, communicates and collaborates effectively with patients, relatives and the health care team
- Establishes collaborative relations with other health care providers to promote continuity of patient care as appropriate
- Consult and take into account the views of referring clinicians; promote their participation in decision making where appropriate
- Demonstrates a commitment to keep up to date with evidence and literature pertinent to clinical practice and to strive to apply relevant evidence to daily practice

METHODS OF LEARNING AND ASSESSMENT

- Formative assessment/Learning:
    - Consultant feedback in the workplace

- Training supervisor's report from interim competence assessment: feedback discussion between trainee and training supervisor during ICM module (from observation of daily performance by training supervisor and other consultants within the ICU)
- eLogbook review with training supervisor
- Consultant feedback on management and leadership skills
- Involvement in organisational, administrative and committee activities at ICU departmental and hospital levels
- Consultant feedback on involvement in departmental audit, mortality/morbidity meetings and journal club activities
- National Patient Safety Conference attendance (College of Anaesthesiologists of Ireland/HSE National Patient Safety Office NPSO) (desirable)
- Quality Improvement course (Royal College of Physicians in Ireland/College of Anaesthesiologists of Ireland) (desirable)

- Summative Assessment:
  - Training supervisor's report from end-of-term competence assessment: feedback discussion between trainee and training supervisor and at least one other ICM consultant at the end of ICM module (from observation of daily performance by training supervisor and other consultants within the ICU)
  - JFICMI Fellowship examination: SAQs, Viva examination
  - eLogbook review with training supervisor
  - Interim meeting between trainee and JFICMI Training Committee members to ensure all year 1 (Clinical ICM Fellow) requirements satisfied and that trainee can progress to year 2 (Advanced Clinical Fellow)
  - Final meeting (Exit Interview) between trainee and JFICMI Training Committee members to ensure all training requirements satisfactorily have been completed

MEDICAL COUNCIL DOMAINS OF GOOD PROFESSIONAL PRACTICE

- Relating to patients
- Clinical skills
- Professionalism
- Scholarship
- Collaboration and teamwork
- Communication and interpersonal skills

- Management (including self-management)
- Patient safety and quality of patient care

DOMAIN 12: PROFESSIONALISM

LEARNING OBJECTIVES – TRAINEE IS ABLE TO

- *demonstrate leadership in the planning of patient care involving all stakeholders (patients, relatives and all members of the MDT caring for the patient)*
- *communicate effectively with patients and relatives*
- *communicate effectively with members of the health care team*
- *maintain accurate and legible records / documentation*
- *involve patients (or their surrogates if applicable) in decisions about care and treatment*
- *demonstrate respect of cultural and religious beliefs and an awareness of their impact on decision-making*
- *respect privacy, dignity, confidentiality and legal constraints on the use of patient data*
- *collaborate and consult; promote team-working*
- *ensure continuity of care through effective hand-over of clinical information*
- *support clinical staff outside the ICU to enable the delivery of effective care*
- *appropriately supervise, and delegate to others, the delivery of patient care*
- *take responsibility for safe patient care*
- *formulate clinical decisions with respect for ethical and legal principles*
- *seek learning opportunities and integrate new knowledge into clinical practice*
- *participate in multidisciplinary teaching*
- *participate in research or audit*

KNOWLEDGE

- Basic ethical principles: autonomy, beneficence, non-maleficence, justice
- Consent and assent in the competent and non-competent patient

- Ethical and legal issues in decision-making for the incompetent patient
- Confidentiality and data protection - legal and ethical issues
- Management of information
- Principles of crisis management, conflict resolution, negotiation and debriefing
- Principles of delivering bad news to patients and families
- Sources of information about different cultural and religious attitudes and beliefs to life threatening illness and death available to health care professionals.
- Impact of occupational and environmental exposures, socio-economic factors, and life style factors on critical illness
- Strategies to communicate to the general population critical care issues and their impact on the maintenance and improvement of health care.
- Principles of adult education and factors that promote learning
- Principles of professional appraisal and constructive feedback
- Purpose and process of quality improvement activities such as evidence based practice, best practice guidelines & benchmarking and change management
- Methods of audit and translating findings into sustained change in practice
- Use of information technology to optimize patient care and life-long learning
- Electronic methods of accessing medical literature
- Identification and critical appraisal of literature; integration of findings into clinical practice
- Principles of appraisal of evidence: levels of evidence; interventions; diagnostic tests; prognosis; integrative literature (meta-analyses, practice guidelines)
- Principles of applied research and epidemiology necessary to evaluate new guidelines/therapies
- Principles of medical research:
    - Research questions
    - Protocol design
    - Power analysis
    - Data collection and analysis
    - Interpretation of results

- Manuscript preparation and publication
- Ethical principles involved in conducting research (including subject protection, consent, confidentiality and competing interests and national ethical approval processes)

- Ethical management of relationships with industry
- Requirements of ICM training at local and national level

SKILLS

- Demonstrate the ability to lead a ward round
- Demonstrate the ability to manage a critical care area for periods of time (for year 2 Advanced Clinical Fellows)
- Communicate with patients and relatives - give accurate information and re-iterate to ensure comprehension
- Discuss treatment options with a patient or relatives before ICU admission
- Differentiate competent from incompetent statements by patients
- Communicate effectively with relatives who may be anxious, angry, confused, or litigious
- Obtain consent/assent for treatment, research, autopsy or organ donation
- Use non-verbal communication appropriately
- Use available opportunities and resources to assist in the development of personal communication skills
- Manage inter-personal conflicts which arise between different sectors of the organisation, professionals, patients or relatives
- Acquire, interpret, synthesize, record, and communicate (written and verbal) clinical information
- Involve patients in decisions about their care and treatment
- Professional and reassuring approach - generates confidence and trust in patients and their relatives
- Act appropriately as a member or leader of the team (according to skills & experience)
- Lead, delegate and supervise others appropriately according to experience and role
- Communicate effectively with professional colleagues to obtain accurate information and plan care
- Collaborate with other team members to achieve common goals
- Consult and take into account the views of referring clinicians; promote their participation in decision making where appropriate
- Liaise with medical and nursing staff in other departments to ensure optimal communication and continuing care after ICU discharge

- Participate appropriately in educational activities and teaching medical and non-medical members of the health care team
- Contribute to professional meetings - understand their rules, structure and etiquette
- Respect, acknowledge & encourage the work of others
- Take decisions at a level commensurate with experience; accept the consequences of these decisions
- Attentive to detail, punctual, reliable, polite and helpful
- Contribute to departmental / ICU activities
- Participate in the processes of clinical audit, peer review and continuing medical education
- Propose realistic initiatives / projects to promote improvement
- Utilise personal resources effectively to balance patient care, learning needs, and outside activities.
- Develop, implement and monitor a personal continuing education plan including maintenance of a professional portfolio
- Use learning aids and resources to undertake self-directed learning
- Use electronic retrieval tools to access information from the medical & scientific literature
- Use a systematic approach to locate, appraise, and assimilate evidence from scientific studies relevant to a patient's health problem
- Demonstrate initiative in problem solving
- Maximise safety in everyday practice

ATTITUDES

- Recognises that the wellbeing of the patient takes precedence over the needs of society or research
- Demonstrates a desire to contribute to the development of new knowledge in the area of ICM
- Espouses that integrity, honesty & respect for the truth underpin relationships with patients, relatives and colleagues
- Establishes trusting relationships with and demonstrates compassionate care of patients and their relatives
- Consults, communicates and collaborates effectively with patients, relatives and the health care team Sensitive to the reactions and emotional needs of others
- Balances courtesy and empathy with effective clinical judgement during interactions with patients, relatives and staff
- Is clear in communicating with and providing explanations to patient, relatives and staff confronted with critical illness
- Promotes respect for patient privacy, dignity and confidentiality
- Acknowledges the consequences of the language used to impart information

- Sensitive to patients' expectations and responses; considers their perspective in order to understand their conduct and attitudes
- Respects the cultural and religious beliefs of the patient; demonstrate an awareness of their impact on decision making
- Respects the expressed wishes of competent patients
- Seeks to modify the stresses which the intensive care environment places upon patients, their relatives and members of staff
- Recognises impaired performance (limitations) in self and colleagues and takes appropriate action
- Fosters effective communication and relationships with medical and nursing staff in other wards / departments
- Accepts responsibility for patient care and staff supervision
- Generates enthusiasm amongst others
- Contributes actively and effectively to interdisciplinary team activities.
- Participates in and promotes continuing education of members of the health care team.
- Takes responsibility for his/her personal physical and mental health, especially where impairment may affect patient care and professional conduct
- Recognises and uses teaching and learning opportunities arising from clinical experiences, including errors
- Recognises and manages circumstances where personal prejudices or biases may affect behaviour, including cultural, financial and academic aspects
- Demonstrates a commitment to keep up to date with evidence and literature pertinent to clinical practice and to strive to apply relevant evidence to daily practice

METHODS OF LEARNING AND ASSESSMENT

- Formative assessment/Learning:
    - Consultant feedback in the workplace
    - Training supervisor's report from interim competence assessment: feedback discussion between trainee and training supervisor during ICM module (from observation of daily performance by training supervisor and other consultants within the ICU)
    - Workplace-based assessments: CbD
    - eLogbook review with training supervisor
    - Involvement in departmental educational, administrative, research and audit activities

- Trainee clinical and educational presentations
- Summative Assessment:
  - Training supervisor's report from end-of-term competence assessment: feedback discussion between trainee and training supervisor (from observation of daily performance by training supervisor and by other consultants within the ICU)
  - JFICMI Fellowship examination:
  - eLogbook review with training supervisor
  - Entrustable professional activities: rated using workplace-based assessments, eLogbook and consultant observation of daily clinical performance (planned process of phased introduction)
  - Interim meeting between trainee and JFICMI Training Committee members to ensure all year 1 (Clinical ICM Fellow) requirements satisfied and that trainee can progress to year 2 (Advanced Clinical Fellow)
  - Final meeting (Exit Interview) between trainee and JFICMI Training Committee members to ensure all training requirements satisfactorily have been completed

MEDICAL COUNCIL DOMAINS OF GOOD PROFESSIONAL PRACTICE

- Relating to patients
- Collaboration and teamwork
- Professionalism
- Communication and interpersonal skills
- Management (including self management)
- Patient safety and quality of patient care

JFICMI Curriculum & Minimum Training Requirements
October 2023

3) MINIMUM REQUIREMENTS FOR TRAINING IN INTENSIVE CARE MEDICINE

During ICM training, each trainee is expected to satisfy the following minimum training requirements. The requirements are divided into four key sections; training plan, training activities, education/quality activities and assessments.

Curriculum Requirement	Year 1 Required or Desirable	Year 2 Required or Desirable	Minimum requirement
Section 1 – Training plan			
Personal goals plan (discussion between trainee and supervisor of training at the start of each training post)	Required	Required	1 per training placement
Working timetable (record of daily shifts and on-call shifts recording in eLogbook)	Required	Required	1 per training placement
Section 2 – Training activities			
Ward rounds			
Consultant-led rounds (recorded in eLogbook)	Required	Required	80 per training year
Trainee-led rounds (recorded in eLogbook)	Required	Required	10 in year 1 30 in year 2
Multidisciplinary rounds (radiology / microbiology / physiotherapy, speech therapy, occupational therapy) (recorded in eLogbook)	Required	Required	10 (of each) per training year
Out-of-ICU assessments (recorded in eLogbook)	Required	Required	40 per training year
Patient case mix managed (all recorded in eLogbook)*			
Cardiovascular failure	Required	Required	Not specified
Respiratory failure	Required	Required	Not specified
Sepsis/septic shock	Required	Required	Not specified

JFICMI Curriculum & Minimum Training Requirements
October 2023

Curriculum Requirement	Year 1 Required or Desirable	Year 2 Required or Desirable	Minimum requirement
Gastrointestinal failure	Required	Required	Not specified
Acute kidney injury	Required	Required	Not specified
Neurological failure	Required	Required	Not specified
Liver failure	Required	Required	Not specified
Injury due to environmental hazards	Required	Required	Not specified
Haematology / oncology illness	Required	Required	Not specified
Polytrauma	Required	Required	Not specified
Metabolic / endocrine / rheumatology	Required	Required	Not specified
High risk surgical patient	Required	Required	Not specified
Cardiac surgical patient	Required	Required	Not specified
Neurosurgical (non-traumatic) surgical patient	Desirable	Required	Not specified
Heart transplant / Heart lung transplant	Desirable	Desirable	Not specified
Liver transplant	Desirable	Desirable	Not specified
Brain stem death patient	Required	Required	2 per training year
End of life care of ICU patient	Required	Required	Not specified
Procedures performed[#] (all recorded in eLogbook)			
Standard tracheal intubation	Required	Required	100 (50 per year or training)

JFICMI Curriculum & Minimum Training Requirements
October 2023

Curriculum Requirement	Year 1 Required or Desirable	Year 2 Required or Desirable	Minimum requirement
Difficult airway management	Required	Required	Not specified
Fibreoptic bronchoscopy +/- bronchoalveolar lavage	Required	Required	5 per training year
Management of mechanical ventilation – invasive and non-invasive	Required	Required	50 per training year
Tube thoracostomy insertion (Observer / Insertion)	Required	Required	2 total
Arterial catheterisation	Required	Required	Not specified
Central venous catheterisation – subclavian, internal jugular, femoral	Required	Required	50 total
Use of ultrasound for vascular localisation	Required	Required	Not specified
Defibrillation and cardioversion	Required	Required	Not specified
Cardiac pacing – transvenous and epicardial (Observer)	Required	Required	Not specified
Cardiac pacing – transthoracic	Required	Required	Not specified
Management of advanced invasive haemodynamic monitoring (cardiac output)	Required	Required	Not specified
Management of continuous renal replacement therapy	Required	Required	Not specified
Lumbar puncture	Required	Required	Not specified
Placement (or management) of epidural catheter	Required (Management)	Required (Management)	Not specified
Abdominal paracentesis (Observer)	Required	Required	Not specified
Insertion of Sengstaken tube or similar (Observer)	Desirable	Desirable	Not specified
Management of patient with Sengstaken tube or similar	Required	Required	Not specified

JFICMI Curriculum & Minimum Training Requirements
October 2023

Curriculum Requirement	Year 1 Required or Desirable	Year 2 Required or Desirable	Minimum requirement
Percutaneous tracheostomy	Required	Required	5 per training year
Transthoracic echocardiography	Desirable	Required (FUSIC standard)	50 total (FUSIC standard)
Transoesophageal echocardiography	Desirable	Desirable	Not specified
Extracorporeal life support (ECLS)	Desirable	Desirable	Not specified
Intra- and Inter-hospital transfer of critically ill patient	Required	Required	5 intrahospital t/fers per year (2 Interhospital t/fers per year)
Section 3 – Educational / Quality activities			
Mandatory courses			
BASIC (Basic assessment and Support in Intensive Care) course	Required	Required	1
Irish Donor Awareness Programme course	Required	Required	1
ICU simulation course	Required	Required	1
Difficult airway workshop	Required	Required	1
Adult cardiac life support (ACLS)	Required	Required	1
Desirable courses			
Beyond BASIC – Nephrology	Desirable	Desirable	1
Advanced Trauma Life Support (ATLS)	Desirable	Desirable	1
JFICMI Short course for Fellowship examination	Desirable	N/A[§]	1

JFICMI Curriculum & Minimum Training Requirements
October 2023

Curriculum Requirement	Year 1 Required or Desirable	Year 2 Required or Desirable	Minimum requirement
Beyond BASIC – Mechanical Ventilation	Desirable	Desirable	1
APLS/PALS or equivalent	Desirable	Desirable	1
Transport Medicine course	Desirable	Desirable	1
Quality Improvement Course	Desirable	Desirable	1
National Patient Safety Conference	Desirable	Desirable	1
Other educational activities			
Departmental journal clubs (Attendance or Participation)	Required (Attendance)	Required (Participation)	5 per training year
Presentation at departmental educational meeting	Required	Required	Not specified
Contribution to formal teaching activities – to medical students, nurses or medical colleagues	Required	Required	Not specified
Departmental mortality and morbidity/Quality/Audit meeting (Attendance or participation)	Required (Attendance)	Required (Participation)	Not specified
National / International meeting attendance	Required	Required	1 per training year
Audit in the field of intensive care medicine	Required	Required	1 per training year
Research project	Desirable	Required	1
Research with peer reviewed publication	Desirable	Desirable	Not specified
Participation in departmental and/or hospital committee	Desirable	Required	Not specified
Contribution to writing a departmental protocol, policy or guideline	Desirable	Required	Not specified
Section 4 - Assessments			

JFICMI Curriculum & Minimum Training Requirements
October 2023

Curriculum Requirement	Year 1 Required or Desirable	Year 2 Required or Desirable	Minimum requirement
Workplace-based assessments (WBAs)			
DOPS (Direct Observation of a Practical Skill)	Required	Required	Total 1 WBA for each month of ICM training (Modular or Fellowship posts). WBA can be DOPS, CbD or Mini-CEX
CbD - Case-based discussions	Required	Required	
Mini-CEX - Mini-clinical evaluation examinations	Required	Required	
Other training milestones/assessments			
Entrustable Professional Activities (EPAs)** Trainees rated 1-5 according to level of practice achieved/supervision required *for each individual EPA* 1: Pre-Practice (observational role only with no supervision required)_ 2: Direct supervision required 3: Indirect supervision required 4: Able to practice independently 5: Able to practice independently and supervise/educate junior learners	Required	Required	Once JFICMI EPA list is finalised, trainees will be required to reach at least level 4 (able to practice independently) in all EPAs over the course of their training.
Early in-term training discussion	Required	Required	1 per training post
Mid in-training assessment	Required	Required	1 per training post
End-of-term training assessment	Required	Required	1 (At end of each training post)
Interim or Final assessment interview between trainee and JFICMI Training Committee	Required	Required	1 each at end of year 1 and year 2
Joint Faculty of Intensive Care Medicine of Ireland Fellowship examination***	Required	Required if not already passed in year 1	

JFICMI Curriculum & Minimum Training Requirements
October 2023

Table notes:

- * The minimum required number of patients from each disease category is not specified. Supervisors of Training are asked to comment on the breadth of clinical experience of each trainee during training assessments. Trainees also record patients from each disease category in their eLogbook for evaluation at final assessment interview.
- #The minimum required number is not specified for most procedures. Supervisors of Training are instead asked to comment on the overall procedural competency of the trainee in the training assessments. Trainees also record all procedures in their eLogbook for evaluation at final assessment interview.
- ** Decisions about level of competency for entrustable professional activities (EPAs) will be based on workplace based assessments and observation of daily clinical practice. Once the JFICMI EPA list has been finalised, trainees completing year 1 Clinical Fellow will be expected to have reached at least level 4 in all *clinical* EPAs. Trainees completing year 2 Advanced Clinical Fellow will be expected to have reached level 4 in *all* EPAs (*clinical and non-clinical*) and level 5 in a majority of EPAs
- *** Progression to year 2 of training requires that FJFICMI exam is passed or attempted