Intensive Care Society

Critical Care Networks-National Nurse Leads

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NOrF The National Outreach Forum

Appendix 1: Enhanced Critical Care Outreach Competencies

Appendix 1

Enhanced Critical Care Outreach Competencies

Clinical Practice - Preceptorship Period (PP)

We have adopted existing national qualifications and competencies where they exist. These should be completed within **the** first 6-18 months of joining a CCO service. Evidence of completion should be provided and can take the form of certificates, completed courses or previous experience.

PP	Pre-requisite/initial training
I can demonstrate through practice and / or discussion:	
National Competency Framework for Registered Nurses in Adult Critical Care: Step 1 (if not already completed)	
National Competencies Framework for Registered Practitioners: Level 1 Patients and Enhanced Care Areas	
Immediate Life Support	
Decision making (clinical reasoning) (accredited HEI course)	
Physical assessment using the A to E framework (e.g. ALERT, AIM or similar)	
Basic introduction to history taking as part of an Outreach service	
Understanding of treatment escalation planning and resuscitation status	
Arterial blood gas sampling	
Arterial blood gas interpretation	
Assistance with rapid sequence induction	
Care of Central Vascular Access Devices	
Chest drain management	
Intra-osseous device insertion and management	
National Tracheostomy Safety Project e-learning (4 modules) competencies or local equivalent	
Transfer of the critically ill patient (completion of local Trust/Critical Care Network training)	
In addition, these basic pre-requisites, new CCO practitioners should be able to rapidly demonstrate the following: • Ability to establish relationships with patients and colleagues based on trust and mutual respect • Ability to work in partnership with patients to facilitate history taking and acute assessment • Ability to listen to and understanding the patients beliefs and expectations • Understanding of the cultural, linguistic and religious implications of history taking and initial assessment • Effective and compassionate communication with patients and colleagues • Ability to deal sensitively with patients emotions and concerns • Ability to create, fully document and communicate a structured management plan together with the patient, the medical, nursing and allied health professional teams	

Self-assessment	Competence Fully Achieved
Sign:	**Signed by Assessor:**
Date:	**Date:**

A. Clinical Practice Competencies

1. Airway

A.1.1	Principles of airway management
I can demonstrate through practice and / or discussion:	
The ability to assist with an airway emergency and implement appropriate interventions: • Initiate emergency intermediate life support algorithms as appropriate	
The common signs, symptoms and causes of airway obstruction and has basic understanding of underpinning pathophysiology, including (but not limited to): • Oropharyngeal (snoring/stertor) • Reduced GCS, obstructive sleep apnoea, angioedema, abscess (tonsillar and pharyngeal), tumour • Base of tongue / epiglottis • Angioedema, epiglottitis, • Glottis (inspiratory stridor / voice change) • Foreign body, laryngospasm, subglottic stenosis • Tracheal (expiratory stridor) • Retrosternal goitre, tracheal stenosis • Bronchial (wheeze) • Asthma, COPD	
A knowledge and understanding of basic airway techniques, the advantages, disadvantages, indications and contraindications of each technique: • Chin lift • Jaw thrust • Oral and nasopharyngeal airway • Supra-glottic devices – including LMA, Proseal, LMA supreme, iGel	

A.1.1	Principles of airway management

The signs and symptoms of airway obstruction or pending obstruction:

- Assesses work of breathing
  - Assessment of voice
  - Dyspnoea
  - Positional/nocturnal symptoms
  - Tracheal tug
  - Intercostal recession
  - Lip pursing
  - Accessory muscle use
- Demonstrates appropriate method to size and insert oral and nasopharyngeal airway
- Maintains adequate ventilation with bag mask valve ventilation – using self-inflating bag as well as Mapleson C circuit with or without an airway adjunct or advanced airway

A basic understanding of tracheal intubation, including:

- Indications for tracheal intubation – both electively and in the emergency situation and the differences between the two
- Awareness of different types of tracheal tube and indications for their use including standard, reinforced and nasal tubes
- Explains how to select correct size and length of endotracheal tube
- Understands different types of laryngoscopes and when they may be required – Macintosh, McCoy, McGrath, airTraq
- Aware of advanced airway adjuncts to assist intubation – including bougie and fibreoptic intubation
- Demonstrates use of transfer/portable ventilator and associated equipment including pre-use checks

Monitoring the airway:

- Demonstrates an understanding of the necessary equipment and monitoring required for safe insertion of supraglottic device and/or tracheal intubation outside of critical care
- Understands principles of and demonstrates correct placement of capnography – in line, side stream and colorimetric (eg Easy Cap)
- Aware of complications of intubation – including incorrect placement (endobronchial and oesophageal), trauma to airway and lung, accidental loss of the airway
- Aware of methods to reduce risk of accidental extubation and how to deal with it in the immediate setting
- Demonstrates an understanding of risk factors for and signs of regurgitation and pulmonary aspiration
- Understands how critical illness may affect gastric emptying and its implication of intubation in emergency situations/outside of critical care
- Aware of how to minimise the risk of regurgitation and aspiration
- Correctly demonstrates the technique of cricoid pressure
- Aware of local and national guidelines regarding minimum standards of monitoring and equipment for intubation Association of Anaesthetists (previously AAGBI standards of monitoring), Difficult Airway Society (DAS) Guidelines
- In relation to predicted and unpredicted difficult airway, is able to demonstrate an understanding of the difficult airway trolley, equipment and techniques used to optimise control of the airway

A.1.1	Principles of airway management

Indications for commonly used drugs specific to airway management) (refer to local emergency drugs protocols for Trust specific), including:

- Opiates
  - Fentanyl
  - Morphine
  - Oxycodone
- Sedation
  - Propofol
  - Midazolam
  - Thiopental
  - Ketamine
- Neuromuscular blocking agents
  - Atracurium
  - Rocuronium
  - Suxamethonium

An understanding and rationale for the use of other agents that may be used to optimise airway patency, including:

- Nebulisers
  - Sodium chloride
  - Salbutamol
  - Ipratropium bromide
  - Adrenaline
- Anti-muscarinic
  - Hyoscine
  - Glycopyrolate
- Other
  - Dexamethasone

Commonly used medications and indications for their use, including:

- Oxygen therapy
- Mucolytics
- Nebulisers
- Topical solutions and dressings for infection and bleeding
- Barrier creams for excoriation

A knowledge and understanding of:

- The anatomical differences between tracheostomy and laryngectomy and the importance of recognising this in a respiratory emergency
- The differences in emergency interventions for administration of oxygen via tracheostomy and laryngectomy
- The emergency equipment required for respiratory support via tracheostomy and via laryngectomy

A.1.1	Principles of airway management

Tracheostomy Tube changes

- Identifies when tube changes are required
- Can prepare the patient and environment for the routine tracheostomy tube change
- Can effectively access and use all emergency equipment
- Can safely/effectively perform a routine tracheostomy tube change as per local policy

Can demonstrate effective support for ward staff in managing tracheostomy and laryngectomy patients including locating and providing safety equipment and identifying training and educational requirements

Weaning and Decannulation

- Identifies criteria to commence weaning
- Can discuss physiological and psychological effects of weaning
- Demonstrates stages of weaning i.e. cuff deflation, use of speaking valves and decannulation caps
- Discusses criteria for decannulation
- Assesses appropriateness of decannulation
- Gathers appropriate equipment
- Is aware of process if airway problem encountered
- Removes tracheostomy tube and applies appropriate dressing as per local policy/procedure
- Assesses patient following decannulation and educates staff regarding secretion clearance and communication
- Understands requirement for ongoing assessment of stoma site and encourages wound healing
- Refers to Tissue Viability Nurse or ENT if problems with healing

Documentation

- Documents all assessments, plans and concerns clearly including discussions with parent team
- Demonstrates awareness of local policies, pathways and care sheets relating to tracheostomy/ laryngectomy care

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

2. Breathing

A.2.1	Breathing - Anatomy and Physiology
I can demonstrate through practice and / or discussion:	
An understanding of how the following might affect respiratory function: • Coronavirus • Sepsis • Cardiovascular (CVS) disorders • Inadequately treated pain • Overdose of opiate medications • Post anaesthesia	
Stages of respiration: • Pulmonary ventilation • External respiration • Internal respiration • Cellular respiration • Oxygen dissociation curve	
Understanding of normal lung volumes: • Functional residual capacity • Expiratory reserve volume • Residual volume • Tidal volume • Vital capacity • Total lung capacity	
The role and function of the components of the respiratory system in normal respiration: • Natural defence mechanisms • Ribs, intercostal muscles, and diaphragm (expansion and recoil) • Relationship between lung volume and pressure • Passive role of the lung • Thoracic wall compliance • Neural and chemical regulation	
Understanding of the following conditions: • Bronchiectasis / emphysema / pulmonary fibrosis • Asthma / COPD • ARDS/ALI • Pneumonia – community acquired vs hospital acquired • Pneumocystis pneumonia (PCP) • Pulmonary embolism	
Definition and causes of respiratory failure: • Type I respiratory failure • Type II respiratory failure • Ventilation/Perfusion (V/Q) mismatch	

A.2.1	Breathing - Anatomy and Physiology
The effects of poor ventilation and oxygenation on other systems including: • Cardiac • Renal • Gastrointestinal • Neurological • Skin	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

A.2.2	Assessment and Investigations
I can demonstrate through practice and / or discussion:	
The ability to perform and correctly document a thorough respiratory assessment including: • Respiratory rate, depth, pattern, and symmetry • Inspection and palpation – assessment of chest wall movement • Percussion (e.g. resonant / hyper-resonant) • Auscultation (e.g. wheeze/crackles/secretions) • Skin colour, peripheral and central cyanosis • Use of accessory muscles • Pulse rate • Cognitive function • Indications for, and limitations of, pulse oximetry • Cough strength/ability to expectorate • Sputum assessment	
Arterial blood gases sampling • Safely performs Arterial Blood Gas sampling • Interpretation of ABG results • Suggest appropriate plan following interpretation	
Spirometry • Perform spirometry • Interpretation of results	

A.2.2	Assessment and Investigations

Radiology

- Describes Indications for radiological imaging
  - Chest X-Ray
  - CT Chest
  - CT Pulmonary Angiography
  - Ultrasound
- Undertaken relevant Ionising Radiation (Medical Exposure) Regulations (IRMER) training
- Able to request radiological imaging as per local policy
- Undertakes basic chest x-ray interpretation:
  - Identifies normal anatomical features and landmarks including: trachea, carina, right and left main bronchi, lung hila, cardiac silhouette and its chambers, diaphragm, bony landmarks, soft tissue shadowing
  - Describes abnormal findings including: pneumothorax, widened mediastinum, consolidation, pulmonary oedema, pleural effusion, lobar collapse
- Refers on to appropriate professional

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
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A.2.3	Breathing - Management

I can demonstrate through practice and / or discussion:

Actions to restore respiratory function in response to observations and clinical assessment:

- Oxygen therapy
  - Indications and potential complications of oxygen therapy
  - Signs and symptoms of oxygen toxicity
  - Various methods of oxygen delivery
  - Use of humidification
  - Patient positioning
  - Deep breathing exercises / effective coughing
  - Respiratory physiotherapy assessment

Recognises when referral to Critical Care is appropriate and initiates discussions

A.2.3	Breathing - Management

An appropriate response to assessment including:

- Patient positioning
- Referral to respiratory physiotherapy
- Patient education on the importance of deep breathing and expectoration
- Use of incentive spirometer

The ability to select and assemble appropriate equipment and administer oxygen therapy via:

- Simple face mask
- Venturi system
- Nasal cannula
- Reservoir mask
- High-Flow Nasal Oxygen therapy
- Humidification circuit with appropriate oxygen delivery
- Set up and use pulse oximetry with appropriate alarm limits
- Appropriately select probe interface and site

The ability to select target saturations appropriate for the clinical condition being treated using local and national guidance

The advantages/disadvantages of prone positioning in the awake patient including:

- Indications and contraindications
- Patient positioning including manual handling techniques to achieve fully prone and lateral positions
- Supine vs High Fowlers position
- Patient understanding including psychological support and coaching
- Frequency of monitoring and position changes
- Documentation and escalation planning

Explains and demonstrates the chosen oxygen delivery system to the MDT and provides appropriate support in the clinical setting

Initiates appropriate weaning plans providing a sound clinical rationale

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

3. Non-Invasive and Invasive Ventilation

A.3.1	Non-Invasive and Invasive Ventilation - Management
I can demonstrate through practice and / or discussion:	
Decision making regarding the appropriateness of commencing treatment including discussion of patient understanding and wishes and treatment escalation planning	
Importance of appropriate escalation decisions • Limitations of treatment • Recognition of failure to respond to treatment • Recognises the importance of timely referral to senior clinicians	
Rationale for respiratory intervention determining their respective advantages and disadvantages: • Non-invasive therapies over invasive ventilation • Invasive ventilation therapies	

Selection of appropriate equipment including:
• Selection, sizing and securing appropriate interface
  • Oxygen mask
  • CPAP mask / hood
  • Nasal prongs
  • HFNO
• Ventilator
• Use of antibacterial/viral filters and placement within an appropriate circuit
• Selection of appropriate modes and settings
• Use of appropriate documentation	

Care and management of the patient requiring Non-Invasive ventilation (NIV) (Bi-level Positive Airway Pressure (BIPAP), Continuous Positive Airway Pressure (CPAP) and Nasal High Flow Oxygen (NHFO) • Indications • Contra-indications • Modes/settings used within ward environment • Ongoing management • Complications • Troubleshooting equipment • Consideration of infection control issues when using aerosol generating procedures	
Demonstrates sound clinical judgement when initiating weaning from respiratory support	
Promotes liaison with palliative care for patients not suitable for invasive ventilation demonstrating understanding of patient specific/individualised symptom control and end of life care planning	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

4. Care of the patient with a chest drain

A.4.1	Care of the patient with a chest drain - Indications
I can demonstrate through practice and / or discussion:	
Indications for chest drain insertion	
Equipment required to assist with chest drain insertion outside of critical care	

Care and management:
• Immediate post procedural care
• Observation checks
  • Drainage
  • Swinging
  • Bubbling
• Indications for use of chest drain clamps
• Indication for a bottle change
• Appropriate dressing choice
• Appropriate use of chest drain clamps
• Indications for removal of chest drain
• Completion of appropriate documentation
• Support for ward-based staff in providing ongoing care	

Indications for applying low thoracic suction to a chest drain and recommended safe suction pressure	
The management of potential complications associated with chest drains • Tube blockage • Chest drain dislodged / falls out • Air leak • Surgical emphysema • Swinging / bubbling stops • Underwater seal is lost • Tension pneumothorax • Haemorrhage • Controlled drainage to reduce the risk of re-expansion pulmonary oedema	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

A.4.2	Airway/Breathing - Pharmacology
I can demonstrate through practice and / or discussion:	
Awareness of local and national treatment guidelines of common respiratory conditions: • Coronavirus • Exacerbation COPD! • Acute asthma • Hospital acquired pneumonia • Community acquired pneumonia • Aspiration pneumonia • Pulmonary embolism Identification of clinical conditions and appropriately suggest medications commonly used in respiratory care: • Oxygen therapy • Bronchodilators • Mucolytic • Steroids • Antibiotics / anti-virals / anti-fungals • Analgesia	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

5. Cardiovascular:

A.5.1	Cardiovascular - Anatomy and physiology
I can demonstrate through practice and / or discussion:	
Normal cardiovascular anatomy and physiology in order to recognise and be able to help manage / treat abnormalities in patients. Including: The structure and function of the heart including: • Chambers and valves between them • Endocardium, myocardium, pericardium • Mediastinum • Coronary blood supply	

A.5.1	Cardiovascular - Anatomy and physiology

The structure of the blood vessels

- Arteries
- Capillaries
- Veins
- Valves within the veins
- Vasoconstriction and vasodilation - control of and possible influencers
- Normal blood flow including coronary, systemic and pulmonary circulation
- Normal cardiac cycle including diastole and systole

Blood pressure control and influencing factors including:

- Baroreceptors
- Central nervous control
- Hormonal control
- Pharmacological control

Components of blood pressure including reference to the following:

- Korotkoff sounds
- Circulating volume
- Cardiac output (CO)
- Heart rate (HR)
- Mean arterial pressure (MAP)
- Stroke volume (SV)
- Para / sympathetic nervous system influence
- Systemic vascular resistance (SVR)
- Preload (central venous pressure)
- Afterload
- Contractility/ force of contraction

Venous Thrombo-Embolic Disease

- The usual initial anatomical location of deep venous thrombosis (DVT)
- The risk factors, clinical features and investigations for this condition
- The range of clinical presentation and associated pathology of pulmonary embolic disease including the treatment for DVT, the methods of administering and monitoring appropriate treatments

The indications for primary thrombo-prophylaxis

Use of a risk assessment using a recognised risk scoring system

A.5.1	Cardiovascular - Anatomy and physiology

ECG Interpretation
Normal electrical conduction pathway as represented on an electrocardiogram (ECG) or rhythm strip

An ability to recognise any deviation from the normal ECG

The need for cardiac (ECG) monitoring including interpretation of the ECG in suspected acute coronary syndromes alongside other relevant investigations

The risk factors, classification, clinical features, investigations and recommended treatment with reference to Resus Council UK Guidelines for:

- Asytole
- Bradycardia
- Tachycardia
- Supraventricular tachycardia (SVT)
- Atrial Fibrillation (AF)
- Atrial flutter
- Heart Blocks (1, 2 and 3rd degree)
- Ventricular Tachycardia (VT)
- Ventricular Fibrillation (VF)
- Pulseless Electrical Activity (PEA)

The indications for primary percutaneous coronary intervention

The indications for angioplasty or coronary artery bypass grafting

Blood Composition
A more advanced understanding of the composition of blood and its role in health

The rationale for the following investigations and an understanding and ability to interpret results:

- Acid base balance
- Full Blood Count
- Erythrocyte Sedimentation rate (ESR)
- Haemoglobin
- Red blood cells
- White blood cells
- Platelets
- Plasma proteins
- Electrolytes including potassium, calcium, sodium and magnesium (high and low levels)
- Ketones
- Coagulation Tests
- Diabetes and hypoglycaemia/hyperglycaemia
- Thyroid function tests
- Creatinine and glomerular filtration rate (eGFR)
- Markers of myocardial damage e.g. Troponin
- C-Reactive Protein
- Procalcitonin (may be specific to critical care only)

A.5.1	Cardiovascular - Anatomy and physiology

Clinical Findings
The altered physiology in relation to clinical manifestations of:

- Hypertension and Malignant Hypertension
- Hypotension
- Stable / unstable angina
- STEMI and NON STEMI myocardial infarction
- Peripheral Vascular Disease
- Acute Limb Ischaemia
- Vascular Trauma
- Anaemia including basic knowledge of common types, causes, investigations and treatment
- Oedema including pulmonary and peripheral

Shock
The definition of shock including more in-depth knowledge re the types of shock and the causes for each type of shock

The effects of each type of shock on the: heart, kidney, brain, lung, gut, immune system

The monitoring techniques that help in the diagnosis and management of shock (may need to be admitted to higher level of care)

The general principles of fluid, pharmacological and surgical management of shock as appropriate

Sepsis
A deeper understanding of the pathophysiology of sepsis including:

- The common sites for sepsis
- The common causative organisms including how these organisms may gain access to the body

The role of lactate in the diagnosis of sepsis

An ability to define and explain the differences between:

- Inflammatory response
- Infection
- Sepsis
- Severe sepsis
- Septic shock
- Neutropenic sepsis

Knowledge of those patients at greater risk of developing sepsis

The importance of screening when there is a suspicion of sepsis with an understanding of local screening tools and how to use them in practice, including:

- NEWS2 and altered vital signs
- Quick Sequential Organ Failure Assessment (qSOFA) (if used locally)
- Red flags / warning signs

The role and importance of antibiotic stewardship

A.5.1	Cardiovascular - Anatomy and physiology

Renal/Fluids

The anatomy and function of the key structures of the renal system including:

- Kidneys
- Glomerulus
- Nephron
- Ureters
- Bladder
- Urethra
- Renal blood supply and blood pressure

How the above structures play a part in:

- Filtration
- Reabsorption
- Secretion
- Excretion

Extracellular, intra-cellular and intravascular volume

Sensible and insensible fluid and electrolyte losses in routine post-operative care

Sensible and insensible fluid and electrolyte losses in a febrile patient

The main endogenous factors that affect renal control of sodium and water excretion

The symptoms and physical findings of dehydration

The common fluid and electrolyte and acid base abnormalities in patients with specific conditions including:

- Excessive gastric losses (upper and lower)
- Diabetic keto acidosis
- Closed head injury
- Major haemorrhage
- Pancreatitis
- Ascites
- Burns

The typically observed serum and urinary electrolytes/osmolality in patients with the following conditions:

- Acute renal tubular necrosis
- Dehydration
- Inappropriate ADH secretion (SIADH)
- Diabetes insipidus
- Congestive cardiac failure

A.5.1	Cardiovascular - Anatomy and physiology

Explain the main functions of the kidney including:

- Urine formation
- Regulation of concentration and volume
- Regulation of electrolyte balance
- Regulation of acid/base balance
- Blood pressure control
- Erythropoietin
- Vitamin D

The pathophysiology of Acute Kidney Injury (AKI)

Baseline risk factors of those at risk of developing AKI

The biochemical markers to identify AKI and local AKI screening tools and their use

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

A.5.2	Cardiovascular - Assessment and Investigations

I can demonstrate through practice and / or discussion:

The ability to perform a comprehensive clinical cardiovascular assessment of a patient and present my findings with a clear documented summary. This will involve direct observation of my doing the following:

- A thorough assessment of the patient's skin integrity, colour and temperature
- Finding/palpating peripheral and central pulses and counting the pulse rate manually
- Describing the regularity and character of the pulse i.e. weak, strong, bounding
- Location of the apex beat and description of its anatomical position within the chest
- Correct recording of BP (lying and standing where required) using a manual sphygmomanometer and being able to describe the Korotkov sounds
- Capillary refill assessment
- Assessment of skin, limbs, mouth and mucous membranes
- A visual assessment of the jugular venous pressure and interpretation of Central Venous Pressure (CVP) monitoring if being used
- Correct placement of electrodes for continuous ECG monitoring and a 12 Lead ECG recording, including interpretation of both

A.5.2	Cardiovascular - Assessment and Investigations

Interpretation of blood results specific to that patient (as listed above) and vital signs in addition to any of the following:

- Urinalysis /Urine dipstick/ culture
- Urine osmolarity
- Bladder scan
- Weighing of patients
- Chest x-ray / Imaging e.g. renal ultrasound
- ECHO of the heart
- Cystoscopy
- Renal biopsy

Effective basic life support but also advanced life support if trained to do so (use simulations where necessary).

- Team leadership skills during an arrest situation
- Cannulation (if trained to do so)
- Venepuncture (if trained to do so)
- Obtaining blood cultures (if trained to do so)
- AED and Manual Defibrillation (if trained to do so)
- Assisting with pacing (if trained to do so)
- Arterial Blood gas Sampling (if trained to do so)

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

A.5.3	Cardiovascular – Pharmacology

I can demonstrate through practice and / or discussion:

Commonly used drugs in use that predominantly affect the cardiovascular system. These may include drugs to treat (but not exclusive)

- Acute coronary syndromes including angina
- Cardiac arrest and peri arrest situations
- Heart failure acute and chronic
- Cardiac arrhythmias
- Coagulation disorders
- Emboli / suspected emboli
- Electrolyte disturbances

A.5.3	Cardiovascular – Pharmacology

- High cholesterol
- Hypertension
- Hypotension
- Myocardial ischaemia
- Shock

Commonly used drugs in sepsis with reference to :

- Covid 19 Pneumonia
- Fungal infections
- Bacterial infections
- Viral infections
- Neutropenia
- Post partum sepsis
- Blood pressure support

Common nephrotoxic drugs and ones to review when suspecting an AKI.

The rationale for administrating:

- Sodium bicarbonate
- Insulin and dextrose
- Calcium gluconate/chloride
- Calcium resonium
- Salbutamol nebuliser (not for respiratory relief)
- Diuretics

Fluid management pertinent to cardiovascular support including :

- Local policies regarding fluids that may be administered by CCOT and some trained nurses without a prescription (Patient Group Directives / PGD)

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

6. Disability

A.6.1	Disability - Anatomy and Physiology
I can demonstrate through practice and / or discussion:	
The normal function of the neurological system	
The major structures of the central nervous system including: • Lobes • Brain stem • Cerebellum • Meninges • Circle of Willis • Venous drainage • CSF pathway • Thalamus, hypothalamus and pituitary gland • Gross structures of the spinal cord • Blood brain barrier	
The major structures of the peripheral nervous system including: • Cranial nerves • Afferent pathways • Efferent pathways • Autonomic nervous system - sympathetic and parasympathetic • Gateway theory of pain perception • Reflex arc	
The protective layers of the brain and spinal cord	
The mechanisms for cerebral auto regulation including cerebral blood flow	
Difference between primary and secondary brain injury	
Describe how to minimise secondary brain injury	
The principles of raised intracranial pressure including: • Cerebral perfusion pressure (CPP) • Mean arterial blood pressure (MAP) • Intercranial pressure (ICP) • Cushing's triad • Monro-Kellie hypothesis	
Causes and clinical features of raised ICP	

Self-assessment	Competence Fully Achieved
Sign:	**Signed by Assessor:**
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A.6.2	Disability - Assessment and Investigations
I can demonstrate through practice and / or discussion:	
The purpose of neurological assessment tools including: • ACVPU • GCS	
The significance of abnormal results	

The appropriate methods of:
• Scoring of eye-opening response:
  • Correct method of assessment of eye opening to voice and painful stimulus
  • Correct type of painful stimulus to assess for eye opening
• Pupil assessment:
  • Correct method of assessing pupil response to light including direct and consensual light reflexes as an adjunct to GCS
• Scoring system for verbal response:
  • Correct method for assessing orientation and verbal response
• Scoring system for motor response:
  • Use of correct method to apply painful stimulus when assessing limb response
  • Differentiating between normal power, mild weakness and severe weakness
  • Recording of best limb response from arms	

Correct use of trapezius pinch	
Contra indications to orbital pressure and sternal rub	
Recommended frequency of GCS assessment and escalation of frequency	
Limitations of GCS as an assessment tool	
Intracranial and extra-cranial reasons for deteriorating GCS	
Indications for CT scanning according to local, national and professional guidance	

A.6.2	Disability - Assessment and Investigations

The importance of the following in caring for neurologically compromised patients including:

- Body temperature control
- Blood glucose control and nutrition
- Blood pressure monitoring
- Maintenance of accurate fluid balance
- Maintenance of sodium balance
- Venous Thromboembolism (VTE) prophylaxis (mechanical and pharmacological where appropriate)
- Patient positioning
- Aspiration pneumonia
- Swallowing and feeding
- Corneal abrasion
- Communication
- Falls prevention
- Pressure ulcer prevention
- Vasopressors
- Sedatives
- Neuro-muscular blocking agents

Clinical situations in which:

- Further imaging of the brain may be required
- Targeted temperature management may be used
- Cerebral function monitoring / electroencephalography (EEG) would be used

Perform a cranial nerve assessment

Perform a motor sensory assessment

The distinction between confusion, new confusion, and delirium

Delirium screening tools

How neurological deficit could compromise patient safety and how this can be managed

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

A.6.3	Disability - Management
I can demonstrate through practice and / or discussion:	
Working within an MDT planning for and delivering safe patient intra and inter hospital transfer for ongoing management	
The signs and symptoms of Diabetes insipidus (DI) in relation to: • Urine output • Urine specific gravity • Urinary sodium • Urine and serum osmolarity	
State which observations and investigations are required for a patient with abnormal sodium level	
The types of meningitis/central nervous system infection including the investigations required for diagnosis	
The types of and causes of encephalitis: • Infective • Autoimmune • Other	
An underpinning knowledge and rationale for medications used in neurological management including: • Fluid resuscitation • Osmotic therapy • Analgesia • Sedation • Neuromuscular paralysing agents • First line anticonvulsant therapy • Vasoactive therapy • Steroids • Nimodipine	
Clinical situations in which the following may be considered: • Targeted temperature control • Deep sedation • Advanced monitoring options which may be offered in a tertiary critical care setting	
Potential complications of spinal cord injury (SCI) and immobility in relation to: • Respiratory insufficiency and the reasons for this • Paralytic ileus • Psychological implications of SCI • Thromboembolic problems • Mucosal ulceration and preventative measures	
The terminology of: • Tetraplegia • Paraplegia	
The importance and principles of spinal alignment and positioning	
Autonomic dysreflexia, pathophysiology, potential causes and treatment	

A.6.3	Disability - Management
Surgical and non-surgical methods of stabilisation	
Assessment, selection, sizing, fitting of neck collars (if supported by local policy) and care and management of these patients	
Assisted movement (log rolling) of a patient with a (suspected or actual) spinal injury	
Bowel management of a patient with a SCI in accordance with neurogenic bowel management guidelines	
Vital lung capacity and why this is important for SCI patients	
The causes of seizures (intra and extra cranial), including: • Seizure types • Generalised seizure activity • Focal seizure activity • Non-convulsive seizures • Status Epilepticus	
The monitoring and treatment options to manage seizures and status epilepticus • Intermittent or continuous electroencephalograph (EEG) • Describes common anticonvulsant therapy (indications, contra indications, side effects, loading / maintenance dose and therapeutic level monitoring)	
An understanding of Myasthenia Gravis (MG) and the physiological effects	
Treatments for MG including: • Steroids • Anticholinergic drugs • Intravenous immunoglobulin (IVIg) • Thymectomy	
An awareness on drugs contraindicated for patients with MG	
An awareness of the risk of deterioration in respiratory function in MG	
The assessment of a patient with appropriate frequency using vital capacity as an assessment tool	
An understanding of Guillain-Barré Syndrome (GBS) and its physiological effects	
How the peripheral nerve and cranial nerve pathways are affected in GBS	
Explain the pathophysiology of demyelination GBS	
Treatment for GBS: • Intravenous immunoglobulin (IVIg) • Plasma exchange	
An awareness of specific pain management issues in GBS in relation to demyelination of nerves and neuropathic pain	
Knowledge of the effect of GBS on the autonomic nervous system including cardiovascular manifestations: • Vagus nerve stimulation • Blood pressure fluctuations • Cardiac arrhythmias • Asystolic events	

A.6.3	Disability - Management
Aware of the risks of respiratory failure in the spontaneously ventilating patient	
Assesses a patient with appropriate frequency using vital capacity as an assessment tool	
Identify and outline the national and local guidance on the care of stroke patients	
Differentiates between thrombus and haemorrhagic strokes	
Use of strict blood pressure control in stroke patients, benefits and potential complications if uncontrolled	
Medications commonly used for BP control in stroke patients	
Role of CT scanning in stroke	
Appropriate escalation of concerns regarding clinical symptoms of the stroke patient	
The causes of hypernatraemia in the patient with a neurological disorder	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

7. Gastrointestinal System

A.7.1	Gastrointestinal System - Anatomy and Physiology, Assessment and Management
I can demonstrate through practice and / or discussion:	
An underpinning knowledge of common gastrointestinal disorders and common causes	
A systematic approach for conducting a complete GI physical examination	
Important health history components that provide information about GI system status	
Biochemistry/Haematology blood tests used to evaluate: • Pancreatic function • Liver function • Other GI disorders	

A.7.1	Gastrointestinal System - Anatomy and Physiology, Assessment and Management

Specific diagnostic studies used to assess the GI tract, including:

- Radiology
- Gastric lavage
- Paracentesis
- Biopsy
- Ultrasound
- Endoscopy
- Colonoscopy

An underpinning knowledge of common gastrointestinal medications and indication for use, including:

- Antacids
- Histamine receptor agonists
- Proton pump inhibitors
- Pancreatic enzymes
- Anti-diarrhoeal
- Laxatives
- Anti-emetics

The anatomy and physiology of diseases of the pancreas

A critical understanding of:

- Pancreatic function tests
- Pancreatic insufficiency
- Chronic pancreatitis
- Pancreatic cysts
- Pancreatic cancer

The management of pancreatitis including:

- Fluid and electrolyte replacement
- Pain management
- Nutritional support

Identify and discuss the management of the following complications:

- Pulmonary
- Cardiovascular
- Renal
- Metabolic

The common signs and symptoms of hepatitis

Knowledge of causes of hepatic inflammation including:

- Infectious diseases
- Drugs and toxins
- Autoimmune diseases
- Congenital diseases
- Miscellaneous causes

A.7.1	Gastrointestinal System - Anatomy and Physiology, Assessment and Management
An underpinning knowledge of complications of liver disease including: • Cirrhosis • Hepato-encephalopathy • Hepato-Renal Syndrome • Spontaneous bacterial peritonitis	
An underpinning knowledge to support the management plan for cirrhosis and/impending liver failure including • Fluids/electrolytes • Nutrition • Gastric lavage • Decreased cardiac output	
Laboratory studies for hepatic disease monitoring including: • Bile formation • Protein studies • Fat metabolism • Liver detoxification • Enzyme production	
Common causes and management of upper and lower gastrointestinal bleeding in relation to: • Diagnosis • Resuscitation • Therapeutic intervention	
Can demonstrate knowledge of the causes of small bowel obstruction (SBO)	
Can identify the clinical features of ileus and obstruction	
Can describe the assessment and management of SBO, including: • Medical management • Surgical management	
Discusses the importance of nutrition in acute critical illness	
Demonstrates insertion of bridled nasogastric tube in line with Trust policy	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

8. Haematology

A.8.1	Haematology - Anatomy and Physiology
I can demonstrate through practice and / or discussion:	
Explain the main functions of haemoglobin, white cells and platelets	
A basic understanding of the clotting cascades	
Common haematological disorders including: • Anaemia • Sickle cell disease • Porphyria • Rare blood disorders • Coagulation disorders • Haemophilia and related clotting disorders • Hypercoagulability syndromes • Thrombocytopenia	

A.8.2	Haematology - Assessment and Investigation
I can demonstrate through practice and / or discussion:	
The clinical signs and symptoms in relation to: • Haemorrhagic shock • Bleeding (GI, GU, trauma, other source) • Neutropenic sepsis • Haematological malignancy • Coagulopathy	
Medications that affect blood clotting including: • Anticoagulants • Antiplatelet drugs • Fibrinolytics • Antifibrinolytics/haemostatic drug therapy	
Signs and symptoms of anaemia: • Anaemia • Easy bleeding and bruising • Lymphadenopathy	
The haematological management of the bleeding patient	
Safe venepuncture and taking and labelling of specimens	
Describe a normal full blood count and discuss what abnormal values may signify	
A normal coagulation screen and discuss what abnormal values may signify	

Self-assessment	Competence Fully Achieved
Sign:	Signed by Assessor:
Date:	Date:

A.8.3	Haematology - Management
I can demonstrate through practice and / or discussion:	
The management plans for haematological disorders including: • Anaemia (in a stable patient) • Major blood transfusion • Coagulopathy • Neutropenic sepsis	
Indications for blood transfusion	
The activation of major haemorrhage protocols outside of critical care	
The different components used in transfusion (packed red cells, FFP, platelets, cryoprecipitate)	
The importance and need to counsel/consent patient for blood transfusion	
The safe administration of blood (including use of locally used blood warming device)	
The possible reactions and adverse events associated with blood transfusion and immediate emergency management	
Commonly used anticoagulant medication may be reversed in a significant bleed	
The application of the local care bundle, based on national guidance for neutropenic sepsis	
Recognise which patients may benefit from a higher level of care	

Self-assessment	Competence Fully Achieved
Sign:	Signed by Assessor:
Date:	Date:

9. Endocrinology and Diabetes

A.9.1	Endocrinology and Diabetes - Anatomy and Physiology
I can demonstrate through practice and / or discussion:	
The location and function of the hypothalamus, pituitary, thyroid, adrenals, parathyroids and pancreas	
The basic functions of hormones, their actions and feedback mechanisms	
The key differences between Type 1 and Type 2 diabetes	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

A.9.2	Endocrinology and Diabetes - Assessment and Investigation
I can demonstrate through practice and / or discussion:	
The ability to obtain a patient's diabetes history	
The common insulin regimes in Type 1 diabetes	
The common management in Type 2 diabetes including: • Oral agents • Insulin • Weight loss • Prevention of cardiovascular complications	
The importance of supportive longer-term specialist care in chronic conditions and makes appropriate referrals	
The psychological impact chronic physical conditions can have	
Examination and recognition of signs and symptoms including • Poor long-term control of diabetes mellitus • Hypoglycaemia • Diabetic Ketoacidosis (DKA) • Non acidotic hyperosmolar coma • Adrenocortical insufficiency • Thyroid emergencies • Hypo/hypernatraemia • Hypo/hypercalcaemia	

A.9.2	Endocrinology and Diabetes - Assessment and Investigation

Order and perform urgent investigations in suspected:

- Hypoglycaemia
- DKA
- Non acidotic hyperosmolar coma
- Adrenocortical insufficiency
- Thyroid emergencies
- Hypo/hypernatraemia

Self-assessment	Competence Fully Achieved
Sign:	Signed by Assessor:
Date:	Date:

A.9.3	Endocrinology and Diabetes - Management

I can demonstrate through practice and / or discussion:

Create a management plan for patients with:

- Hypoglycaemia
- DKA
- Non acidotic hyperosmolar coma
- Adrenocortical insufficiency
- Thyroid / para-thyroid emergencies
- Hypo/hypernatraemia

Recognise which patients may benefit from a higher level of care

Self-assessment	Competence Fully Achieved
Sign:	Signed by Assessor:
Date:	Date:

10. Transfer of the critically ill patient

Transfer of the critically ill adult has been recognised as an intervention during which patients may be exposed to increased risk (Faculty of Intensive Care Medicine (FICM) (2019)). It is a prerequisite for CCOT staff to undergo a transfer training course/support programme and these competencies serve to reinforce those taught on such courses.

A.10.1	Transfer of the Critically Ill Patient
I can demonstrate through practice and / or discussion:	
The underpinning national and local policies/guidelines related to the transport of the critically ill patient including: • FICM, ICS guidelines • Regional transfer standards including audit processes • Local policy regarding CCOT and their role in the transfer of the critically ill	
Indications for intra hospital transfer including transfer to: • CT scan • MRI scan • The Critical Care Unit	
Indications for inter and intra hospital transfer	
The importance and implications of the right patient, right time, right reason. Being able to communicate effectively with all involved including: • Patient and family • Parent team, ward nurses and other teams if applicable i.e. critical care team • Other department staff i.e. Radiographers • Portering, allied and clerical staff • Operating Department Practitioners (particularly for their experience with transfers / their airway skills) • Ambulance control/personnel if involved with inter hospital transfers	
The need to monitor the patient during transfer and report any events making use of: • Safety check lists prior to transfer • Local / regional dedicated transfer forms with space for continuous observations • Local/regional incident reporting process	
The importance of a risk assessment prior to transfer including consideration to potential: • Effect on patient if transfer did NOT occur • Loss of invasive lines and tubes • Altered pathophysiology/ haemo-respiratory stability during transfer • Loss of oxygen supply • The ability to calculate the amount of oxygen needed for the journey • Safety concerns, including miscommunication, equipment failure, infection prevention and control issues. • Psychological effects of patient	

A.10.1	Transfer of the Critically Ill Patient

The expected role and responsibility of each team member, including:

- Patient assessment and optimisation prior to transfer
- Equipment checking and preparation
- Competency and skills required during transfer
- Communication with all health care professionals involved, including handover if not escorting patient back to original place
- Patient and staff safety including knowledge of ergonomics and human factors
- Completion of documentation

Evidence of competency in the use of medical devices required for transfer including:

- A CEN1 compliant transfer trolley (if involved with inter hospital /ambulance transfers. Please refer to transfer course details)
- A suitable transfer trolley /bed and safe practice for both the patient and equipment being transferred
- Portable ventilator and ETCO2 monitoring
- Portable oxygen cylinders
- Other respiratory devices including spare equipment / intubation kit
- Portable cardiovascular monitoring
- Volumetric infusion devices and infusions
- Suction equipment
- Transfer defibrillator
- Transfer bag and familiarity and competence with its contents
- Any specific drugs required for the transfer-safely stored and prepared/checked by two practitioners
- Any MRI specific transfer equipment
- Standard checks and alarm settings for any medical devices used

Appropriate action required in the event of an untoward/ life-threatening incident occurring during transfer including being able to:

- Interpret monitor / equipment / ventilator alarms and provide remedial action
- Alter treatment plans / titrate therapy within prescribed parameters to maintain homeostasis
- Perform endotracheal suction
- Secure an alternative airway including being able to recognise and remove a blocked tracheostomy
- Ventilate a patient manually
- Assist with an intubation (rapid sequence induction)
- Source alternative equipment in the event of equipment failure
- Provide basic/advanced life support
- Summon appropriate help

A.10.1	Transfer of the Critically Ill Patient
Specific considerations for certain patient groups, including: • Neurological including spinal injuries • Cardiac • Obstetric • Burns • Paediatrics (Note: This may differ depending on Trusts / role of CCOT within transfers)	
An ability to help ward teams improve on their knowledge and skills with transferring critically ill patients, including: • Exhibiting the skills and competence as a role model • Providing education and support • Providing resources not available on the ward i.e. monitor and education/support with use of same • Providing opportunities to debrief and share learning	
An understanding of the importance of incident reporting post transfer	
An understanding of the importance of accurate completion of any Critical Care Network/Trust transfer documentation and its use in improving safety in the transfer of the critically ill patient	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

11. Rehabilitation after Critical Illness (RaCI)

CCO can enable discharges from critical care areas by supporting the continuing recovery of patients on the general wards. There is however much inconsistency in the rehabilitation service offered to post critical illness patients by CCO teams across the country.

The following competency statements relate to the assessment and management of patients post critical illness whereby a fully established CCO service is in place to help provide this.

A.11.1	Rehabilitation after Critical Illness
I can demonstrate through practice and / or discussion:	
Knowledge of NICE 83 guidance: Rehabilitation after critical illness in adults (2009) and Quality Standards (2017)	
What a short clinical assessment entails and how this may trigger a more comprehensive clinical assessment	
Physical and non-physical sequelae post critical illness and how these might manifest and be addressed/treated	
The difference between short, medium- and long-term goals and their importance in rehabilitation	
The time frames and stages of a hospital stay when a clinical assessment should be performed	
The importance of communication aids so that patients can participate in their care, when without them they are unable to do so	
The importance of written information in a language they can read, for patients to help inform their recovery from critical illness	
The importance of follow up services after discharge from critical care and ultimately, the Trust	
Experience with caring for critically ill patients and an ability to recognise physical and non-physical sequelae post critical illness	
The rehabilitation post critical illness pathway / operational policy within own Trust. This must include: • Familiarity with the formal handover of care which includes an individualised structured rehabilitation programme-between critical care and the wards • Knowledge and familiarity with any tools used within Trust for assessing rehabilitation needs and planning on-going care e.g. CPAx, IPAT, UK-PTSS-14, HADS etc. (see references and bibliography) • Familiarity with patient diaries if used in own Trust and how these might help in the recovery process • Knowledge and familiarity with any follow up service offered and inclusion/exclusion criteria • Various support groups and services available to patients post critical illness and how to refer onto /access them e.g. ICUSteps etc. (see references and bibliography)	

A.11.1	Rehabilitation after Critical Illness

The ability to offer basic help and advice on the following (not inclusive) and seek expert help when indicated:

- Anxiety /worry
- Appetite loss
- Aches/pains
- Anger
- Concentration- lack of
- Constipation
- Depression
- Dysphagia
- Guilt- survival
- Hallucinations/Flashbacks
- Hyper arousal
- Joint stiffness
- Low self esteem
- Muscular tension / weakness
- Nightmares
- Palpitations
- Panic attacks
- Relocation anxiety
- Sleep hygiene
- Speech issues
- Swallowing issues
- Tearfulness
- Withdrawal from others

The ability to perform a follow up visit according to Trust policy, on a patient after discharge from critical care assessing their physical, psychological and cognitive status and then collaboratively plan their rehabilitation goals along with the MDT accordingly

The facilitation of a visit back to critical care, or even to an outside area (as per Trust Policy) if felt to be of benefit to the patient. Understanding how the re-introduction of normality and/or putting fact to 'fictional' memories can aid recovery

When there is a need to refer the patient to other members of the MDT, have an ability to do this and/or communicate this need and document it clearly in the medical notes

The ability to review the patient regularly according to Trust policy and amend their care plans, accordingly, discharging them from the CCO service when deemed safe to do so

In addition to medication, the ability to utilise non-pharmacological tactics in the treatment of delirium and to support ward staff in doing this

The importance of rehabilitation post critical illness and the need to develop the service by auditing compliance against national guidance, and the collection of data supporting time and activities spent with such patients

Self-assessment	Competence Fully Achieved
Sign:	Signed by Assessor:
Date:	Date:

A.11.2	RaCI - Pharmacology
I can demonstrate through practice and / or discussion:	
Commonly used medication in the treatment of delirium (and local Trust policy) whilst in critical care and when on a general ward	
Knowledge of other medications that might be useful in the rehabilitation of patients post critical illness including those to help sleep deprivation, depression, anxiety, neuropathy pain, secretion reduction, VTE prophylaxis etc.	

12. Maternal Competencies

The following competency statements relate to the assessment and management of the deteriorating critically ill woman during pregnancy (ante-natal), labour and the post-partum (post-natal) period.

The involvement of Critical Care Outreach (CCO) will vary in each organisation and it is important to be familiar with, and practice within local guidelines.

CCO can be called to assess, treat and support maternal patients and various practitioners in multiple locations across the hospital environment including emergency and maternity departments as well as surgical and medical wards. As part of the emergency response / cardiac arrest team you might also attend women in outpatients and / or general visitors to the hospital who require emergency support.

You will encounter women that are at varying stages of pregnancy from ante-natal to post-partum (up to 6 weeks post-delivery). It is vital to understand not just the anatomical and physiological changes of varying stages of pregnancy and how these impact on clinical presentation and care delivered, but also the psychological impact of maternal illness on the whole family and the importance of your role in supporting them.

Care of the pregnant woman differs from that of the non-pregnant woman, as there are two living entities rather than one, requiring an understanding of the fundamental ethical and legal principles that apply. You must understand and appreciate that the health of the baby, whether ante-natal or post-natal, is integrally linked to that of the mother, and should be assessed and managed alongside that of the mother at every stage of care delivery.

A.12.1	Maternal Competencies

I can demonstrate through practice and / or discussion:

Knowledge of recent key guidance pertaining to the maternal patient and its content/implications to practice including:

- RCoA, (2018) Care of the critically ill woman in childbirth; enhanced maternal care
- RCoP, SAM (2019) Acute care toolkit 15 Managing acute medical problems in pregnancy
- CC3N (2019) Maternal Specialist Competencies
- NICE (2020) Intrapartum care: existing medical conditions and obstetric complications
- MBRRACE-UK (2021) Saving Lives, Improving Mothers' Care
- RCoG (2022) Treatment of Covid-19 in pregnant patients
- RCoG (2011) Providing Equity of Critical and Maternity Care for the Critically ill Pregnant or Recently Pregnant Woman
- Local Trust and national guidance including major haemorrhage policy, sepsis and resuscitation protocols with reference to the maternal patient including immediate neonatal life support

A.12.2	Maternal Competencies – Anatomy and Physiology

I can demonstrate through practice and / or discussion:

Knowledge of the causes and implications of changes to anatomy and physiology during pregnancy including:

- Position and size of fully gravid uterus
- Impaired venous return
- Increase in vascular volume and reduction in haemoglobin level
- Secondary circulation
- Breast size increase/engorgement
- Diaphragmatic splinting
- Increased risk of aspiration
- Potential difficulties with airway management / intubation
- Laryngeal oedema
- Decreased gastric motility
- More relaxed oesophageal sphincter

A.12.2	Maternal Competencies – Anatomy and Physiology

Knowledge of complications and risk factors that may cause the pregnant / recently pregnant woman to become critically ill including:

- Acute fatty liver
- Acute kidney injury
- Amniotic fluid embolism
- Cholestasis
- Disseminated Intravascular Coagulation (DIC)
- Gestational diabetes
- Haemolysis, Elevated Liver enzymes and Low Platelets (HELLP)
- Haemorrhage
- Hyperemesis gravidarum
- Myocardial infarction and other causes of chest pain in pregnancy
- Mental health issues e.g. depression, self-harm, suicide
- Peri-partum cardiomyopathy
- Pre-eclampsia / Eclampsia
- Placental abruption
- Placenta previa
- Pulmonary embolism / other thromboembolic events
- Reduced/ absent foetal movements (asking mother about any changes/concerns)
- Sepsis
- Spontaneous rupture of membranes
- Uterine rupture
- Vaginal bleeding
- Wound dehiscence

A.12.3	Maternal Early Warning Score (MEWS) / (MEOWS) and Obstetric Emergencies

I can demonstrate through practice and / or discussion:

Knowledge and use of:

The early warning score specifically related to maternity patients used in your hospital such as MEWS/ MEOWS. (NB although the pregnant woman may be on a general ward being monitored via NEWS2, it is advisable that this is changed to an obstetric specific tool such as MEWS/MEOWS).

Knowledge of how physiological triggers within the maternal early warning score (MEWS/MEOWS) differs from those of a normal 'adult' early warning score (NEWS2), including:

- An increased heart rate and cardiac output
- Increased oxygen consumption
- Decreased arterial PCO2 (leading to higher pH) – respiratory alkalosis common in pregnancy
- Blood pressure (with focus on both systolic and diastolic BP)
- Local protocols and escalation triggers to summon the appropriate clinical teams to coordinate on-going management and care AS EARLY AS POSSIBLE
- Local protocols for referral and escalation to enhanced maternal care and critical care facilities
- Resuscitation Council UK: obstetric cardiac arrest guidelines including positioning of mother, rapid evacuation of the uterus, summoning appropriate personnel: obstetrician, midwife, neonatologist etc

A.12.3	Maternal Early Warning Score (MEWS) / (MEOWS) and Obstetric Emergencies

Knowledge of appropriate assessment and management of sepsis in the pregnant/ recently delivered woman:

- Inpatient maternal / general patient sepsis screening and action tool
- Common causes of sepsis including pathogens
- Risk factors for sepsis: diabetes, miscarriage, abortion, pre labour rupture of membranes (PROM), retention of products etc.

Location and preparation of emergency resuscitation equipment for mother and baby including:

- Resuscitaire / cardiac arrest trolley
- Neonatal equipment (for use by appropriate personnel)
- Equipment for resuscitative hysterotomy / Peri-Mortem Caesarean Section
- Equipment for emergency transfer of woman to operating theatre/critical care (See also section on transfer of the critically ill)

A.12.4	Maternal Competencies – Pharmacology

I can demonstrate through practice and / or discussion:

Knowledge and reasons for use of pharmacological interventions that may be required during pregnancy / the post-partum period including an awareness of own limitations and scope of practice in the prescribing and/or administration of such):

- Analgesia
- Antacids
- Anti-convulsant
- Anti-emetics
- Anti-hypertensives
- Anti- infectives
- Fluid replacement
- Insulin
- Oxytocin and other uterotonic drugs
- Tranexamic acid
- Vasopressors
- Vitamin K
- VTE prophylaxis

Knowledge that certain medications are unsafe for use in pregnancy and breastfeeding and understanding the importance of liaising with pharmacy and maternity teams if there is uncertainty about whether a specific medication is safe to use

A.12.5	Maternal Competencies – Communication, Psychological And Social Care
I can demonstrate through practice and / or discussion:	
The importance of clear, detailed communication and management planning with the midwifery and obstetric team which may include the following: • Mother and baby bonding including the importance of skin-to-skin contact and prevention of separation where at all possible • How /where to source assistance with hand expression of milk • How / where to source assistance with care of and feeding of the infant • Provision of care for mother and baby in the same room. If not possible support the use of local initiatives such as Camera in Crib Phone App facilities etc. • Mutually acceptable and flexible visiting policy for maternal partner • Recognition of the overriding needs of mother in relation to baby • Issues relating to viability of baby based on gestational age • Mental wellbeing support for mother and family • Local policy regarding neonatal death • Bereavement support for mother and family • Local policy regarding maternal death including reporting mechanisms • Local safeguarding policy with regards to mother, baby and other siblings	

13. Independent Prescribing

Independent prescribing is optional at enhanced practice level, but is strongly recommended if the individual CCOP does not wish to progress to advanced practice level. (see p91 in Appendix 2, Advanced Clinical Competencies)

B. Leadership Competencies

1. Working together

B.1	Working Together
I can demonstrate through practice and / or discussion	
Behaviours that are supportive and empathetic to other members of the team	
An understanding of own responsibilities and how to escalate	
An ability to recognise and respond constructively to areas for development	
Understands the impact of the wider financial / organisational pressures on services and how this influences others behaviours / work	
Ensures effective handover and clear documentation of care to ensure ongoing management	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

2. Working with others

B.2	Working With Others
I can demonstrate through practice and / or discussion	
An understanding of your role and how you meet the expectations within multi-disciplinary team	
The ability to help others to see the value of their individual contribution	
Collaboration with others and the inclusion of the patient/service user and their families/network as part of the healthcare team	
An understanding of the structure of the NHS and the management of the local healthcare system	
The ability to create opportunities for critical care professionals to meet and learn/discuss patient care and service developments	
How a team with complementary skills can work actively together to achieve a common purpose	

Self-assessment	Competence Fully Achieved
Sign:	Signed by Assessor:
Date:	Date:

3. Strategy and Vision

B.3	Strategy and Vision
I can demonstrate through practice and / or discussion	
That a strategy and vision is visible and available to all stakeholders	

Self-assessment	Competence Fully Achieved
Sign:	Signed by Assessor:
Date:	Date:

4. Leading with care and compassion

B.4	Leading With Care and Compassion
I can demonstrate through practice and / or discussion	
An ability to communicate in a clear and honest and timely manner to all involved	
Participation in Trust wide Critical Care and Critical Care Outreach initiatives	
How my behaviour may influence / affect the immediate team / wider healthcare teams overall care / service we deliver	
The ability to be empathetic even though I may disagree with someone	
Is able to recognise patient safety issues and escalate concerns to appropriate seniors	
An ability to support other professionals (outside of own professional background) on a regular basis	
Ongoing development of individual managerial and leadership skills	
The use of reflection and self-analysis to identify areas for improvement	
My role within in clinical governance process and review	

5. Improving services

B.5	Leading With Care and Compassion
I can demonstrate through practice and / or discussion	
How to benchmark our service with regards to Key Performance Indicators (KPIs)/Trust Quality Priorities	
The value of diverse ideas to harness creativity and focused solution outcomes	
The ability to engage in and support multi-professional development in critical care / critical care outreach services	
The ability to engage appropriately to influence relevant leadership to support multi-professional service change / developments	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

C. Facilitation of Learning Competencies

1. Learning Opportunities

C.1.1	Continuous Professional Development
I can demonstrate through practice and / or discussion:	
A knowledge and understanding of professional national codes of conduct and its application to lifelong learning e.g. NMC, CSP	
The need for post-registration learning and further continuous professional development	
Evidence of academic study relating to education e.g. Clinical supervisor training, practice teacher award, PGCert	
A broad knowledge of other relevant professional and national guidance related to role and responsibilities: • Revalidation • Standard Framework for Education • Standards for student supervision and assessment (SSSA) • Future nurse curriculum	
An awareness of relevant local education, training and development policies	
An understanding of the principles of facilitating effective learning and teaching of adult learners	

C.1.1	Continuous Professional Development
The support of others to develop teaching programmes and new curricula	
Promotes a culture of learning within CCOT and the wider organisation	
A self-awareness of own limitations, educational needs and the ability to seek appropriate support	
Ability to respond to local, professional and national educational developments and care provision based on relevant up to date evidence-based findings	
The engagement with others in the CCOT in order to understand roles, new skills and knowledge	
Compliance with statutory and mandatory training	
Continuous professional development to meet the registration requirements of the relevant professional regulatory body	
A continuing professional portfolio with evidence of personal reflection on practice	
The ability to seek out learning opportunities to improve knowledge and skills and implements these in practice	
How to use the diverse, often unpredictable ward environment to reflect on practice as a key learning opportunity for complex decision-making	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

C.1.2	Engagement within the Critical Care Outreach Team
I can demonstrate through practice and / or discussion:	
An understanding of the differing roles, development of new skills and knowledge within the team, in clinical practice and service delivery	
How MDT education is implemented in a manner that facilitates holistic knowledge and supports the retention of information provided	
The importance of integration, co-ordination, collaboration and continuity of multidisciplinary learning	
Effective leadership, teaching and role-modelling for the CCOT when caring for acutely ill patients in clinical practice	
Effective leadership, peer support and role-modelling for the CCOT when teaching in clinical practice or in different settings	
Understanding of clinical limitations of self and others	
Provision of mentorship for team in managing critical care outreach caseloads and prioritisation of tasks	
Support of the MDT with decision making when assessing, planning and treating acutely ill/ deteriorating patients	

C.1.2	Engagement within the Critical Care Outreach Team
Clear and constructive feedback to junior staff and peers	
An ability to select suitable CCO patients for case review with peers	
Management of the CCOT caseload to allow time for teaching, supervision and support	
Effective clinical governance as part of the role including reporting, investigating and learning from adverse incidents and near misses	
The use of learning from themes identified and incorporates them into training	
The ability to enable direct referral to other members of the MDT	
Evaluation of learning within the team to improve service delivery and local practice	
Benchmarking of existing local training and education to influence future service development, training and inform clinical practice	
Participation in MDT meetings: Patient safety/ deteriorating patient / mortality and morbidity	
Support of junior CCO staff with training and learning opportunities	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

2. Developing Others

C.2.1	Teaching and Supporting Educational Activities / Programmes
I can demonstrate through practice and / or discussion:	
An understanding of innovative ways of delivering teaching and learning to enhance the learner experience, including: • Knowledge of different teaching styles / methods • Knowledge of variations in adult learning styles • Assessment of prior learning • The value of critical thinking/reflective learning	
A positive approach to engage and teach junior staff in clinical practice including: • Patient assessment • Anatomy and pathophysiology relating to acute illness	
An understanding of national and local education guidance or policy that will affect their practice	
A positive approach to engage in learning, facilitation and development of others including staff, patients and family members	

C.2.1	Teaching and Supporting Educational Activities / Programmes
A proactive engagement of learners and others in the development and delivery of education and training	
Teaching and educational activities to multi-disciplinary staff and support all learner groups with: • Critical thinking/ reflective practice • Clinical debrief	
Participates in classroom based and in-situ simulation, case-based learning and problem based learning to help teach the following: • Risk management • Teamwork • Situational awareness • Clinical decision making • Effective pre-briefing and de-briefing	
Supports and provides opportunities for learners that drives quality improvement in service	
Evidence of acting as a mentor/preceptor	
Assessing competence of others	
Coaching of CCO team and wider MDT	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

C.2.2	Appraisal and Review
I can demonstrate through practice and / or discussion:	
An awareness of local education policy, learning and organisational development strategies and appraisal guidelines	
Support and opportunities for learners that drives quality improvement in service	
An awareness of how appraisal links to organisational training needs analysis	
The importance of building and maintaining professional relationships within teams	
An understanding of own training needs and learning for future career development	
Continuous professional development and engagement with annual appraisal	
Effective role modelling to other CCO team members and the wider MDT	
Evidence of contribution to and participation in staff individual performance review and the development of proactive personal development plans of others	
Evidence of experiential learning – undertaking constructive feedback and facilitated reflection	

Self-assessment	Competence Fully Achieved
Sign:	**Signed by Assessor:**
Date:	**Date:**

3. Learning Resources

C.3.1	Educational development, implementation and support in practice for early recognition and response to acutely ill / deteriorating patients
I can demonstrate through practice and / or discussion:	
The ability to determine a learner's level of competence, confidence and experience in practice and identify strategies to support learners not achieving these and developing talent and clinical excellence in others	
Knowledge and significance of national research with relation to excellence in clinical practice including the following: • Track and trigger tools such as NEWS2 and escalation policies • Sepsis • Acute Kidney Injury • NICE clinical guidelines relevant to own practice	
The value of constructive feedback on clinical and professional performance – appropriate to the individual learner needs	
Production of teaching materials, learning outcomes and educational support to enhance training of staff regarding early recognition of the acutely ill/deteriorating patient	
Appraisal of human factors during training and exploration of strategies to promote safer working practices	
Optimisation of the quality of the acutely unwell/ deteriorating patient's treatment, care and experience by developing self and others, including: • Sharing of outcomes of education and training • Evidence based practice • Research • Innovation	
Local policy and educational development of strategies to improve standards of care to improve patient safety e.g. NEWS2	

Self-assessment	Competence Fully Achieved
Sign:	Signed by Assessor:
Date:	Date:

4. Creating the learning environment

C.4.1	Foster an inclusive approach to all staff and patients. Actively encourage learners to participate in new ways of working and learning
I can demonstrate through practice and / or discussion:	
Inclusive behaviours that will promote professional confidence, performance and self-esteem	
The ability to describe behaviours in others that may undermine learning professional confidence, performance or self-esteem and develop strategies to overcome these	
The use of teaching materials to enhance the facilitation of learning for all Critical Care Outreach Practitioners and ward staff responsible for early recognition and response to acutely ill/deteriorating patients	
The ability to represent and teach locally to inform and educate all staff about their role in critical care outreach	
Respect for all team members, learners, patients and their families	
How to facilitate approaches to learning through effective reporting mechanisms, feedback and local clinical governance activities	
Provision of educational support and how to raise clinical concerns regarding patient safety, standards of care, education and training and ethics	

Self-assessment	Competence Fully Achieved
Sign:	Signed by Assessor:
Date:	Date:

C.4.2	Continuous Professional Development
I can demonstrate through practice and / or discussion:	
A knowledge and understanding of professional national codes of conduct and its application to lifelong learning e.g. NMC, CSP	
Evidence of post-registration learning and further continuous professional development	
Evidence of academic study relating to education e.g. Clinical supervisor training, practice teacher award, PGCert	
Broad knowledge of other relevant professional and national guidance related to role and responsibilities, including: • Revalidation • Standard Framework for Education • SSSA standards • Future nurse curriculum	
An awareness of relevant local education, training and development policies	
An understanding of the principles of facilitating effective learning and teaching	
The support of others to develop teaching programmes and new curricula	
Promotion of a culture of learning within CCO team and the wider organisation	
A self-awareness of own limitations, educational needs and the ability to seek appropriate support.	
An ability to respond to local, professional and national educational developments and care provision based on relevant up to date evidence-based findings	
Engagement with others in the CCO team in order to understand roles, new skills and knowledge	
Compliance with statutory and mandatory training	
Continuous professional development to meet the registration requirements of the relevant professional regulatory body	
A continuing professional portfolio with evidence of personal reflection on practice	
How to seek out learning opportunities to improve knowledge and skills. Implements these in practice	
How to use the diverse, often unpredictable ward environment to reflect on practice as a key learning opportunity for complex decision-making	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

C.4.3	Engagement within the Critical Care Outreach Team
I can demonstrate through practice and / or discussion:	
Understanding of the differing roles, development of new skills and knowledge within the team, in clinical practice and service delivery	
How MDT education is implemented in a manner that facilitates holistic patient care	
The importance of integration, co-ordination, collaboration and continuity of multidisciplinary learning	
Effective leadership, teaching and role-modelling for the CCOT when caring for acutely ill patients in clinical practice	
An understanding of clinical limitations of self and others	
Mentorship for team in managing CCO caseloads and prioritisation of tasks	
Support of the MDT with decision making when assessing, planning and treating acutely ill/ deteriorating patients	
The ability to deliver clear and constructive feedback to junior staff	
An ability to select suitable critical care outreach patients for case review with peers	
An ability to manage the CCOT caseload to allow time for teaching, supervision and support	
An ability to undertake effective clinical governance as part of the role including: reporting, investigating and learning from adverse incidents and near misses	
The use of identified themes to support learning and incorporates them into training	
The ability to enable direct referral to other members of the MDT	
Evaluation of learning within the team to improve service delivery and local practice	
An ability to undertake benchmarking of existing local training and education to influence future service development, training and inform clinical practice	
Participation in MDT meetings: Patient Safety/ Deteriorating Patient / Mortality and Morbidity	
Supports junior CCO staff with training and learning opportunities	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

D. Research, Evidence Based Practice and Improvement

D.1	Research: Knowledge and Delivery
I can demonstrate through practice and / or discussion:	
An understanding of the role and responsibility of: • Health Research Authority/National Institute for Health Research (NIHR), Clinical Research Network • NIHR Internship/Fellowship /Involvement with local NIHR ARCs • Integrated Research Application System	
Interpretation of the legal and ethical requirements pertaining to health care research, including: • Professional Codes of Conduct (NMC 2018) • General Data Protection Regulation Act (2016) • Freedom of information Act (2000) • Equality Act (2010) • Good Clinical Practice guidelines for the ethical conduct of research (HRA 2020)	
An awareness of appropriate research agenda/priorities for: • National and local acute and critical care outreach services • Organisation/Institution	
A broad knowledge and understanding of: • Qualitative and quantitative research methods • Statistical/thematic analysis	
Rudimentary knowledge and understanding of key local processes and requirements for research study applications, including: • Formulation of priority research questions • Resources available to support research applications • Registering/applying to undertake research • Ethical approval	
Promotion of a research culture which questions, critiques and supports the implementation of research proposals	
An ability to undertake a research project relevant to critical care services by: • Working in partnership with research and development, national studies relevant to acute and critical care practice • Undertaking a Post-Graduate academic programme of study • Working towards the building of a portfolio of research	
The use of knowledge to promote and support the recruitment, implementation and conduct of research in practice underpinned by the UK policy framework for health and social care research (2017)	
Support of others to develop research questions and proposals	
Dissemination and sharing of research findings through publication, professional presentation locally, and nationally	

Self-assessment	Competence Fully Achieved
Sign:	**Signed by Assessor:**
Date:	**Date:**

D.2	Evidence Based Practice
I can demonstrate through practice and / or discussion:	
Knowledge and understanding of the evidence-base/national policy for critical care outreach service	
The ability to critically appraise and synthesise the outcomes/recommendations of: • Relevant research • Service evaluation • National policy and audit, using the results to underpin decision -making in practice and service delivery	
The application of evidence to support complex decisions in practice	
An ability to apply the appropriate evidence base/national policy/guidelines to practice, including: • Local guidelines • Competency development • Educational resources	
A positive approach to engage and supervise junior staff to undertake critical appraisal and/or translate evidence into practice relevant to the critical care outreach service	
A positive approach to engage and supervise junior staff to utilise a range of quality/ outcome measures in clinical practice including: • Clinical outcomes • Patient-reported outcomes • Patient experience	

Self-assessment	Competence Fully Achieved
Sign:	**Signed by Assessor:**
Date:	**Date:**

D.3	Service Improvement and Evaluation
I can demonstrate through practice and / or discussion:	
An understanding of the appropriate process required to address improvements in: • Clinical practice • Service delivery	
The design service evaluation and audit projects across professional and/or organisational boundaries, addressing local and regional practice	
The dissemination of local, regional or national service evaluation and audit findings through appropriate media/forums: • Local • Regional	
The appraisal of research/audit to evaluate own and others' practice, selecting and applying valid arguments to the evidence base	
Service evaluation and audit activity gaps within local practice or service delivery	
An ability to undertake service evaluation and audit projects across professional and/or organisational boundaries, addressing local and regional practice	
The benchmarking of activity locally, regionally or nationally to inform practice	
Action on local/regional audit to influence clinical practice and the critical care outreach service	
The support of junior staff in completing service evaluation / audit projects and translating findings into practice	
A contribution, where relevant, from a local perspective to national priority audit programmes	
The ability to seek out networking opportunities to improve service provision	
A respect for others when completing local/regional audits	
A clear view of relevant stakeholders within service provision	

Self-assessment	**Competence Fully Achieved**
Sign:	**Signed by Assessor:**
Date:	**Date:**

Notes

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