

R2 Shock, anaphylaxis and the septic patient

Assessment of these competencies via Mini-CEX, with final summative Mini-CEX to be completed by the end of the programme.

In addition, key DOPs could be carried out as part of this module including Peripheral line insertion (PP1), ABG (PP2), IV fluid bolus administration (PP15).

Potential situations in which these competencies could be assessed include the following:

- Any patient presenting with significant allergic response/ anaphylaxis to an allergen or toxin e.g. insect bite, snake/ insect bite, nut allergy
- Any patient presenting with signs of shock, whatever the cause e.g. major blood loss, cardiac event, neurogenic shock, shock secondary to major sepsis
- Any patient presenting with fever and signs of significant systemic sepsis: malaria, pneumonia, peritonitis, meningitis, encephalitis, pyelonephritis
- Any patient presenting with fever and signs of significant sepsis with an indwelling catheter, central line or permanent venous portal
- Any immunocompromised patient presenting with sepsis

Core competencies to achieve with adult patients, are EPA level 3 (Indirect active-partial supervision by senior clinician, no prompting or help provided, direct line of vision or supervisor immediately available). Paediatric competencies are to be assessed to EPA level 2 (Direct active – full supervision by senior clinician, with prompting/ verbal and actual guidance and help throughout)

Knowledge/ Skill/ Behaviour	Detail of competency
Knowledge	Demonstrates knowledge of the definitions of sepsis and septic shock and understand the patho-physiology, presentation and assessment of other causes of shock including cardiogenic, hypovolaemic and neurogenic shock
	Demonstrates knowledge of common bacterial (gram negative and gram-positive organisms) / vector borne diseases producing sepsis
	Is able to differentiate features of different infection types
	Demonstrates knowledge of special situations not limited to but including infection with: <ul style="list-style-type: none">• Toxin producing bacteria• Invasive Group A Streptococcus• Fungal organisms• Vector borne infections e.g. malaria• Multi-drug resistant organisms e.g. MDR-TB• Infectious presentations in the immunocompromised

Knowledge/ Skill/ Behaviour	Detail of competency
	<ul style="list-style-type: none"> • Infection amenable to source control e.g. abscess, infected device
	Elucidates causes of anaphylactic shock and demonstrates knowledge of treatment and follow up required, based on best practice guidance e.g. World Allergy Organisation Guidelines for the Assessment and Management of Anaphylaxis
	Recognises and can initiate management of neutropenic sepsis (see also IPC – CC3)
	Demonstrates knowledge of the pharmacology and rationale for the use of the following in sepsis management: <ul style="list-style-type: none"> • Renal replacement therapy • Vasoactive drugs • Adjunctive drugs
	Demonstrates understanding of indications for antibiotic prophylaxis with different infections; drugs required, for whom and for how long
Skills- History	Obtains a targeted history from patient, even in difficult circumstances including appropriate symptom patterns and potential triggers
	Obtains a collateral history from friends, family, paramedics- incl. PMH and hospital notes
	Identifies the risk factors in the history that may indicate an infectious disease e.g. travel, sexual history, IV drug use, animal contact, drug therapy, implanted medical devices/prostheses
Skills – Examination	Performs a rapid systematic clinical assessment using ABCDE approach (and using ALS algorithm where appropriate)
	Is able to perform a competent examination looking for possible source of infection and signs of secondary organ failure
	Recognises signs of other potential causes for shock such as trauma, particularly in the frail/elderly
Skills- investigation and treatment	Initiates immediate, simple resuscitation (oxygen, iv access, fluid resuscitation), takes appropriate investigations and administers first line treatment, including antibiotics and intravenous fluids in accordance with local guidance [Sepsis Six / Bundle]
	Demonstrates an understanding of the need to assess the fluid status of the acutely unwell patient, when such assessment is necessary, and the need for reassessment and additional monitoring
	Orders, interprets and acts on initial investigations appropriately: ECG, blood cultures, blood count, electrolytes, CVP measurements
	When meningitis/encephalitis is suspected, can outline the indications for lumbar puncture and when this should precede antibiotic therapy; and subsequently interpret CSF laboratory analysis results

Knowledge/ Skill/ Behaviour	Detail of competency
	Demonstrates an understanding of the use of glucose control, pressure area care, renal replacement therapies, thromboprophylaxis, gastrointestinal homeostasis and nutrition in all critically ill patients
	Identifies immediate life threats and readily reversible causes, recognising the need to initiate key treatment at the same time as carrying out history and examination
Skills- Clinical decision making, judgement [in addition to CC1]	Effectively assesses the response to a fluid bolus (PP15), and makes appropriate clinical decisions based on this response (urine output)
	Arranges suitable monitoring of relevant indices (oximetry, arterial gas analysis) and vital signs (BP, pulse & respiratory rate, temp, urine output) and communicates this to wider team
	Forms a diagnosis and differential diagnosis including: - including those that require critical care escalation, atypical presentations
	Escalates and calls for senior and or specialist help as appropriate
Behaviour- Communication & professionalism [in addition to CC7 & CC8]	Adopts a leadership role and demonstrates effective teamwork and communication with a calm, methodical approach
	Is able to communicate effectively and sympathetically with patient, understanding they may be extremely distressed or agitated
	Behaves in a professional manner, respects confidentiality, protects dignity of patients, remains sensitive to patients' opinions/ hopes/fears; explains plan and risk
Paediatric specific competences	Is able to recognise the child in shock and formulate a differential diagnosis and initiate immediate resuscitation
	Is able to recognise and institute treatment for life-threatening complications, including raised intracranial pressure

Additional optional competencies- EPA 1 or 2

Knowledge/ Skill/ Behaviour	Detail of competency
Skills- investigation and treatment	Familiar with use of transthoracic US to look for IVC compression and cardiac tamponade or right-side dilatation
	Insertion of an arterial line for invasive BP monitoring
	Insertion of a central line for access / vasoactive drug administration
	imitation of general anaesthesia / paralysis, endotracheal intubation (RSI) and formal invasive ventilation for post-arrest critical care
	Initiation of non-invasive ventilation in appropriate patients