S[+] GEORGE'S
SCHOOL OF ANAESTHESIA

Intermediate Level Training Record

Curriculum for Anaesthetics 2010

Specialty Trainees Years 3 & 4

Trainee name .....

August 2015

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Contents

Introduction

This training record is to be used in conjunction with 'CCT in Anaesthetics [2010 Curriculum]'. It is for Specialty Trainees in years 3 & 4 who have already completed their Basic Level Training Certificate. Completion of this training record book provides supporting Notes that the trainee has completed the clinical aspects of the intermediate level units described in the curriculum.

Minimum requirements for ARCP

- All trainees must complete all clinical and non-clinical units with the exception of ophthalmic, plastics/burns and vascular, which are optional.
- All completed units must have a completion of unit of training certificate on the e-portfolio.

To complete a training unit the trainee will need to:

- **Core clinical learning outcomes**
  Demonstrate achievement of the core clinical learning outcomes (or learning objectives)

- **Logbook review**
  Perform an appropriate number of cases with a case mix and complexity appropriate for intermediate level training

- **Workplace based assessments**
  Complete an appropriate number of WPBAs – these must cover the core clinical learning outcomes:
  - For the 'general' units (and three optional units): a combination of A-CEX, ALMAT, DOPS and CBD as indicated in the units descriptions
    - For critical incidents & respiratory/cardiac arrest see relevant pages
  - For pain medicine attend 20 pain sessions (mixture of acute and chronic) and keep a pain a pain logbook (plus WPBAs as specified)
  - For the other clinical units a minimum of A-CEX/ALMAT ×1, DOPS ×1 and CBD ×1 for each unit
  - For management, academic and research, and teaching & learning see relevant page

- Complete an annual multi-source feedback

- There is an Assessment Guidance document on the college website
  https://www.rcoa.ac.uk/system/files/TRG-ASMT-GDNCE-2015_0.pdf

When trainees feel that they have completed a training unit and have the Notes in their training record and logbook, it is up to them to review this with their College Tutor or educational supervisor, who will complete their completion of unit of training on the e-portfolio or suggest ways of completing the unit if more training is required.
Note that many parts of the curriculum (especially from the 'general' and non-clinical sections) can be covered while in specialist anaesthetic and ICM Units.

Instructions to trainers

- It is the trainee's responsibility to ask for assessment.
- Any appropriate consultant can sign off individual elements of a unit of training.
- Some elements are topics for discussion and others are competencies to be observed
- The College Tutor, Clinical Unit Lead or an educational supervisor nominated by the College Tutor should sign off completion of a training unit.
- If the designated trainer cannot sign off a unit of training as expected, they should contact the College Tutor as soon as possible for advice.

Summary of Completed INTERMEDIATE units

Trainee name: ..... GMC no: .....

Trainer to sign and date when each unit is completed and signed off. All units are essential (unless specified).

Intermediate clinical units

	Trainer's signature	Date
Neuro anaesthesia.....		
Cardiac/Thoracic		
General duties		
Minimum no. of 'general duties' WPBAs completed		
Airway management		
Critical incidents		
Day surgery		
General, urological and gynaecological surgery		
Head, neck, maxillo-facial and dental		
Management of respiratory and cardiac arrest		
Non-theatre		
Ophthalmic *(optional)*		
Orthopaedic		
Plastics/Burns *(optional)*		
Regional		
Sedation		
Transfer medicine		
Trauma and stabilisation		
Vascular *(optional)*		
Intensive care *(intermediate 3 month block)*		
Obstetric		
Paediatric		
Pain medicine		

Intermediate non-clinical units

	Trainer's signature	Date
Academic and research (including audit)		
Teaching and learning		
Management		
Improvement Science, Safe and Reliable Systems (optional)		

Neuroanaesthesia

Anaesthesia for neurosurgery, neuroradiology and neurocritical care

Learning objectives:

- Application of basic science knowledge and understanding gained in CT1 & 2 to the principles and practice of neuroanaesthesia and neuro-critical care.
- Develop and modify the skills of administering general anaesthesia [as identified in the Introductory Curriculum and in the basic level sections entitled 'Trauma & Stabilisation' and 'Transfer'] to include a focus on the special difficulties presented by neurosurgery. This will include developing knowledge, skills and experience of the perioperative anaesthetic care of patients undergoing major elective and emergency surgery on the brain and spinal cord and associated bony structures as well as for neuroradiology.

Core clinical learning outcomes:

- Deliver safe perioperative anaesthetic care to uncomplicated ASA 1-3 adult patients undergoing non-complex elective intracranial and spinal surgery with direct supervision
- Deliver safe perioperative anaesthetic care to uncomplicated ASA 1-3 adult patients undergoing non-complex emergency surgery with distant supervision [e.g. insertion of V-P shunt/EVD]
- Be an effective team member for resuscitation, stabilisation and transfer of adult patients with brain injury with distant supervision

Requirements for completion of Unit:

- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, DOPS ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Anatomy of the skull, skull base, vertebral column and central nervous system relevant to neuroanaesthetic practice				
Applied physiology and pathophysiology related to the central nervous system relevant to neuroanaesthetic practice				
Techniques for decreasing intra-cranial pressure				
Indications for using neurophysiological monitoring [including EEG, evoked potentials and ICP measurement] to benefit patients requiring neurosurgery/neuro-critical care				
How drugs can impact on neurophysiological monitoring				
Pharmacology of drugs which act on the central nervous system				
Complications of positioning for neurosurgical procedures: prone, sitting, lateral, park bench				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Understanding of the perioperative anaesthetic management of patients for neurosurgery and neuroradiology. This includes: • Preoperative assessment and optimization of patients with neurological disease • Induction and maintenance and reversal of anaesthesia • Early postoperative care including specific areas of fluid management and control of pain				
Understanding of anaesthesia for neurosurgical procedures including but not exclusively: • Shunt surgery • Evacuation of intracranial haematoma • Emergency surgery for traumatic brain injury • Spinal column surgery • Planned supratentorial and posterior fossa surgery [including vascular disease and tumours]				
Principles of anaesthesia for neuroradiology including but not exclusively: • Emergency and elective imaging of the central nervous system [including the principles of stereotactic surgery] • Interventional procedures [including coiling of intracranial aneurysms]				
Anaesthetic implications of pituitary disease including endocrine effects and trans-sphenoidal surgery				
Anaesthesia for trigeminal neuralgia including thermocoagulation				
Anaesthetic implications of spinal cord trauma				
How to recognise an unstable cervical spine and management				
Indications for postoperative ventilation				
Techniques used for recognition and management of air embolism				
Special risk associated with prion diseases during neurosurgery				
Understanding of the principles of anaesthesia for patients with neurological disease [including but not exclusively]: • Guillain-Barré • Myasthenia gravis • Myasthenic syndrome • Dystrophia myotonica • Muscular dystrophy • Paraplegia and long term spinal cord damage				
Specific risks of venous thromboembolic disease in neurosurgical patients and how these are managed				
Understanding of the neurocritical care management of traumatic brain injury [including but not exclusively]: • Indications for ventilation • Recognition and management of raised ICP • Cerebral protection strategies • Fluid and electrolyte balance in the head injured patient • Systemic effects of traumatic brain injury				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Principles of management of acute spinal cord injury				
Control of status epilepticus				
Requirements for safe transfer of patients with brain injury				
Issues related to the management of organ donation in neuro-critical care				
Preoperative assessment, followed by optimization, of patients presenting with neurological disease				
Understanding of the problems of obtaining consent in patients who are not competent, including those with impaired consciousness and confusion				
Provision of safe perioperative anaesthetic care for a variety of neurosurgical procedures [including but not exclusively]: • Elective and emergency intracranial surgery • Shunt surgery • Cervical and lumbar spinal surgery				
Physiological and pharmacological techniques to improve intra-cranial homeostasis in pathological states				
How to manage patients with acute head injuries for: • Anaesthesia for emergency neurosurgery • Non-surgical management if indicated • On-going neuro critical care				
Safe patient positioning – prone, lateral [park bench]				
Ability to resuscitate, stabilise and transfer safely patients with brain injury				
Sensitivity in giving support to patients and relatives during end of life care				
Good communication with the surgical team including ensuring the exchange of relevant information				
Selection and use appropriate invasive monitoring when indicated in patients undergoing neurosurgical procedures				
Recognition and management of diabetes insipidus/SIADH				
Manipulation of blood pressure as appropriate for the clinical situation				
Management of emergence from anaesthesia in a smooth and controlled way				
Management of the neurosurgical patient in the immediate postoperative period				

Cardiac/Thoracic

Learning outcomes:
- Gain knowledge and understanding of the underlying principles of anaesthesia for cardiac surgery, both 'on' and 'off' pump, and thoracic surgery
- Understand the skills required to provide safe and effective anaesthetic care to patients undergoing elective cardiac and thoracic surgery
- Understand pathophysiology & presentation of advanced cardiac disease to better understand the peri-operative management of such patients who undergo coincidental surgery

Core clinical learning outcomes:
- Safe and effective perioperative anaesthetic care to patients undergoing elective coronary artery surgery and minor thoracic investigative procedures under direct supervision

Requirements for completion of Unit:
- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, DOPS ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Describes the principles of the perioperative anaesthetic management of patients for cardiac surgery				
Understands and explains the principles of cardiopulmonary bypass including the use of cardioplegia				
Learns from the perioperative management of patients with cardiac disease knowledge applicable to those requiring non-cardiac surgery				
Understands the pathophysiological changes and organ dysfunction associated with cardiac disease, and their implications in the perioperative period				
Assess the risk of operation in a patient who has cardiac or respiratory disease using common scoring systems				
Explains the results of special investigations used during the assessment of patient with cardiac disease including X-rays, coronary angiography, ECHO, and scanning techniques including CT, MRI and PET				
Understands and explains the principles of antibiotic prophylaxis in patients with cardiac disease				
Recalls/describes the anaesthetic and surgical problems associated with "off pump" cardiac surgery				
Demonstrates the problems associated with post-cardiac surgery including bleeding and the clinical signs and symptoms of cardiac tamponade and its management.				
Evaluates the indications for invasive and non-invasive cardiovascular monitoring and is able to interpret common findings				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Describes the methods used to cool and re-warm patients during cardiac surgery and the complications				
Explains the need for, and methods of, altering blood coagulability during cardiac surgery				
Recalls/describes the indications for cardiac pacing and lists the modes available				
Describes the principles of action, and the use of, intra-aortic balloon counter-pulsation and other assist devices				
Explains the abnormalities found in the adult patient with congenital heart disease (including corrected or partially corrected), and the implications for anaesthesia in these patients				
Explains the indications for the use of inotropes and vasodilators during cardiac surgery				
Explains the significance of preoperative functional investigations of respiratory and cardio-respiratory performance				
Describes specific risks associated with induction and maintenance of anaesthesia in patients requiring thoracic surgery and precautions to minimise these risks				
Describes commonly performed thoracic surgical procedures and the relevant anaesthetic problems				
Describes commonly used methods of local and general anaesthesia for bronchoscopy including techniques of ventilation				
Describes the airway management of a patient undergoing one lung ventilation and anaesthesia including placement of double lumen endobronchial tubes and bronchial blockers				
Management of patient undergoing one lung ventilation				
Explains the changes that occur during one lung ventilation and the strategies to manage these changes				
Recalls the causes, symptoms and signs of a pneumothorax and explains the principles of management				
Describes the common problems associated with the postoperative care of patient who have had thoracic surgery and the methods that can be used to minimise these				
Risk assessment for patients presenting for cardiac surgery including those with valvular and ischaemic heart disease				
Assess patients with intra thoracic aortic pathology such as aneurysm, dissection and coarctation, and give an informed judgement on the risks and benefits of anaesthesia and surgery for the procedure				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Anaesthesia for a patient undergoing elective coronary bypass including the management of: • A patient during cardiopulmonary bypass • A patient having cardiac surgery off bypass • Coagulation management				
Postoperative care plans appropriate to the surgery and the patient's condition including postoperative analgesia and respiratory support				
Invasive and non-invasive monitoring in patients with cardiac or respiratory disease including non-invasive cardiac output monitoring devices utilising a variety of technologies such as LIDCO, PICCO and ODM				
Effective and evidence based use of inotropes and vasodilators				
Anaesthesia for procedures in cardiac intensive care including re-sternotomy, reintubation, tracheostomy and cardioversion				
Anaesthesia for patients having cardiological electrophysiological procedures, including pacemaker insertion				
Assess and recommend treatments to optimise a patient for thoracic surgery				
Perioperative anaesthetic care to patients for minor thoracic procedures, in particular bronchoscopy, including the safe use of the Sanders injector				
Airway management for the thoracic procedures and the ability to insert single or double lumen endobronchial tubes and bronchial blockers				
Methods to confirm correct tube placement				
Anaesthetic for major thoracic procedures, including correct airway and ventilatory management, positioning and patient protection				
Management of patient undergoing one lung ventilation				
Post-operative care plans, taking into account patient's condition and the surgical procedure, including the need for management in intensive care or high dependency				

Airway management

Intermediate level learning outcomes are included in this section specifically relating to airway skills; most will also appear in ENT, maxillo-facial & dental.

Learning objectives:
- Build on the knowledge and skills gained in the Basic Level airway training
- Develop knowledge, skills and experience of safe airway management in more complex cases undergoing major elective and emergency surgery including fibreoptic intubation
- Be able to recognise the specific problems encountered with the airway

Core clinical learning outcomes:
- Be able to demonstrate the ability to perform elective fibreoptic intubation, either for an awake or an anaesthetised patient, with local supervision

Requirements for completion of Unit:
- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, ALMAT ×1, DOPS ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Risks associated with awake fibreoptic endotracheal intubation and the process of obtaining consent for this procedure				
Identification and assessment of pathology in or around the airway, including: • History and examination • Anaesthetic chart review • Interpretation of investigations such as lateral C-spine X-ray, cross sectional imaging of the upper airway (MRI/CT), flow volume loops • Discussion with surgeons				
Anaesthetic management of potential threats to the airway, including: • External compression • Foreign body, blood clots, masses • Inhalational injury, inflammation • Blunt and penetrating trauma				
Indications for tracheostomy [Cross ref: ENT]				
Anaesthetic principles for tracheostomy				
Management of the obstructed/misplaced tracheostomy				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Specialised airway techniques used for laser surgery in, or near, the airway				
Causes, pathophysiology and management of obstructive sleep apnoea and the surgical procedure to treat it				
Follow up of an unexpected difficult intubation				
Various supraglottic airways for IPPV (risks, benefits, practical use)				
Airway management of patient undergoing one-lung ventilation and anaesthesia, including placement of double lumen endobronchial tubes and bronchial blockers [Cross ref: cardiac/thoracic]				
Equipment and airways devices used for surgery on and below the vocal chords, including bronchoscopes, Venturi devices and fibre-optic scopes [Cross ref: ENT]				
Principles of jet ventilation				
Principles underlying the use of helium				
Elective fibreoptic intubation under anaesthesia with or without LMAs or other airway adjuncts				
Effective teaching of basic airway manoeuvres, direct laryngoscopy and endotracheal intubation to novice students [e.g. nurses, CT1 anaesthetic trainees, paramedics, medical students]				

Critical incidents

Learning objectives:
- Build on the knowledge and skills learnt during basic training and develop skills at managing more complex critical incidents with distant supervision

Core clinical learning outcomes:
- To demonstrate leadership in the management of critical incidents as and when they arrive
- To provide assistance/leadership to more inexperienced colleagues if called to assist in the management of critical incidents
- To demonstrate leadership in ensuring good team work and communication to help reduce the risks of harm from critical incidents

Requirements for completion of Unit:
- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – CBD x 1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Significant event analysis or root cause analysis to examine a locally reported incident				
Importance of regular practice of response protocols using simulation and their place in the development of team working and communication between professional groups				
Leadership in resuscitation room/simulation when practicing response protocols with other healthcare professionals				
Appropriate use of team resources when practicing response protocols with other healthcare professionals				

Day surgery

Cross references with many of the other clinical units.

Learning objectives:
- Build on the knowledge, understanding and skills gained in the basic level day surgery curriculum
- Provide appropriate anaesthetic management for selected ASA 3 patients including insulin-dependent diabetics and patients with a BMI >35
- Gain knowledge of the organisational aspects of running a day surgery unit

Core clinical learning outcomes:
- Deliver safe perioperative anaesthetic care to ASA 1-3 patients having more extensive or specialised day surgery procedures with direct supervision

Requirements for completion of Unit:
- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs - A-CEX × 1, ALMAT × 1, CBD × 1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Key organisational issues surrounding day surgery including suitability of facilities and staffing				
Current local and national guidelines for provision of day surgical services				
Audit and other quality assurance activities relevant to day surgery				
Advances and controversies in anaesthesia for day surgery				
Perioperative anaesthetic care to ASA 1-3 patients including those with significant comorbidities including, but not limited to: • Obese patients [BMI > 35] • Insulin dependent diabetics • Those with significant cardiac and respiratory disease • Elderly patients				

Head, neck, maxillo-facial and dental surgery

It may not be possible for every trainee to become skilled in all the emergencies described, however all trainees are expected to obtain clinical teaching and training in this area.

Learning objectives:

- Build on the knowledge and skills gained in the Basic Level training for ENT, maxillo-facial and dental surgery. Develop knowledge, skills and experience of safe perioperative anaesthetic care of patients undergoing major elective and emergency surgery in these specialty areas
- Be able to recognise the specific problems encountered with the 'shared airway' and manage correctly
- Have the clinical judgement and skills to organise and manage the anaesthesia for routine ENT, dental and maxillo-facial operating lists involving ASA 1-3 patients requiring minor to intermediate surgery and such patients for emergency surgery without direct supervision

Core clinical learning outcomes:

- Deliver safe perioperative anaesthetic care to ASA 1-3 adult patients requiring routine and emergency non-complex minor/intermediate ENT and maxillo-facial surgery under distant supervision

Requirements for completion of Unit:

- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, ALMAT ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Special requirements of anaesthesia for all common procedures encountered in specialised head and neck surgery				
Principles of anaesthesia for middle ear surgery, including use of TIVA and hypotensive techniques				
Head and neck surgery: • Principles of management of anaesthesia • Pathophysiological changes and co-morbidities associated with head and neck cancer • Particular requirements for acute maxillo-facial emergencies e.g. fractured mandible, intra-oral abscesses • Other pathological causes of upper airway obstruction				
Causes, pathophysiology and management of obstructive sleep apnoea and the surgical procedures used to treat it				
Characteristics of the lasers used for surgery and the circumstances in which they are used				
Hazards of laser surgery				
Specialised airway techniques used for laser surgery in, or near, the airway				
Equipment and airways devices used for surgery on and below the vocal chords, including bronchoscopes, Venturi devices and fibre-optic scopes				
Specialised imaging techniques [CT, MRI] in planning anaesthesia and surgery for head and neck surgery				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Problems associated with chair dental procedures including consent, the specific needs of patients with learning disabilities, Child Protection [Cross ref: paed] and the Mental Capacity Act				
Recognition and appropriate management of acute ENT emergencies, including bleeding tonsils, epiglottis, croup, and inhaled foreign body				
Emergency management of fractures of the face including le Fort fractures and fractures of the mandible				
Emergency management of the obstructed airway including tracheostomy				
Indications for tracheostomy				
Principles of the care of the tracheostomy				
Principles of jet ventilation				
Principles underlying the use of helium				
Interpretation CT and MRI scans of the head and neck				
Correct use of a variety of advanced airway devices				
Use of hypotensive techniques where indicated				
Anaesthesia/sedation for outpatient dental surgery				
Perioperative anaesthetic management of more complex head, neck and maxillo-facial procedures including, but not limited to: • Laser surgery • Bronchoscopy • Surgery on the middle ear • Thyroid surgery • Maxillary and mandibular osteotomies				
Perioperative anaesthetic management of head, neck, maxillo-facial and dental emergencies including: • Bleeding tonsil • Obstructed upper airway • Mandibular and maxillary fractures • Obstructed lower airway				
Working with all members of the theatre and surgical teams to manage an operating list with a mixture of ASA 1- 3 non-complex minor/intermediate cases effectively, along with the ability to provide safe perioperative anaesthetic care for the patients				
Leading [where appropriate] the theatre team in the perioperative management of patients requiring out of hours minor/intermediate ENT, maxillo-facial and dental surgery, including understanding of when to seek help appropriately				
Specific measures needed to provide appropriate analgesia, and other postoperative care including oxygen therapy, airway monitoring, fluids and anti-emetics in patients following major head, neck, maxillo-facial and dental surgery				

General, urological and gynaecological surgery

Learning objectives:

- Build on the knowledge, understanding and skills gained in Basic Level training and become confident at managing more complex cases
- Gain knowledge of the anaesthetic management of patients with transplanted organs for non-transplant surgery
- Gain knowledge, skills and experience of the perioperative anaesthetic care of patients requiring major general urological and gynaecological surgery, including the immediate management of major blood loss
- To manage the peri-operative care of an elderly patient in general, urological or gynaecological surgery, focussing on the issues of advancing age

Core clinical learning outcomes:

- Deliver safe perioperative anaesthetic care to complex ASA 1-3 adult patients requiring elective and emergency intra-abdominal surgery [both laparoscopic and open] with distant supervision
- Manage a list with complex ASA 1-3 adult patients for elective and emergency surgery in all disciplines with distant supervision

Requirements for completion of Unit:

- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, ALMAT ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Principles off the peri-operative management of the commoner complex cases including, but not exclusively: • Pancreatic and liver resection • Oesophagectomy [including one lung ventilation] • Resection of neuroendocrine tumours [e.g. carcinoid and phaeochromocytoma] • Splenectomy • Resection of retroperitoneal masses [including management of pleural breach]				
Effects of chemotherapy/radiotherapy, and the implications for anaesthesia				
Anaesthetic considerations of co-existing diseases including problems such as spinal injury				
Ethical considerations of cadaveric and live-related organ donation for the donor [and relatives], recipient and society as a whole				
Issues of anaesthesia for renal transplant surgery				
Anaesthetic management of patients with transplanted organs for non-transplant surgery				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Anaesthetic complications related to disturbance of fluid balance, oedema, and dehydration				
Anaesthetic implications of bariatric surgery; practical management of the morbidly obese patient				
Principles of enhanced recovery programmes				
Rationale and principles of perioperative haemodynamic management and optimisation				
Principles of preoperative evaluation of patients at risk of post-operative morbidity, including risk stratification tools, for example scoring systems and measures of functional capacity [including cardiopulmonary exercise testing]				
The importance of timing of non-elective surgery and the effect this may have on delivery of emergency surgery				
Recognise when it is/is not necessary to order complex preoperative assessment tests such as cardiopulmonary exercise testing and echocardiography prior to anaesthesia /surgery				
Manage safely and effectively the peri-operative care of patients requiring elective and/or emergency resection of the lower bowel or similar complexity urological and/or gynaecological case (open or laparoscopic) with distant supervision				
Manage the effects of sudden blood loss effectively				
Work with all members of the theatre and surgical teams to manage an operating list with a mixture of ASA 1-3 cases effectively, along with the ability to provide safe perioperative anaesthetic care for the patients				
Leads (where appropriate) the theatre team in the perioperative management of surgical patients requiring out of hours surgery, including an understanding of when to seek help appropriately				
Demonstrates the ability to present a balanced judgement to the patient and their relatives of the perceived risks and complications of anaesthesia and surgery				

Management of respiratory and cardiac arrest

Because of the nature of this learning, and the fact that episodes where skills and knowledge can be tested occur infrequently and unexpectedly, it is intended that competence is only tested in simulation in the course of organised courses such as ALS and APLS.

Learning objectives:
- Build upon the knowledge and skills obtained during the management of respiratory and cardiac arrest during basic training.
- Develop the skills necessary to manage patients safely and effectively in the peri-arrest period

Core clinical learning outcomes:
- Is an effective member of the multi-disciplinary member of the resuscitation team and takes responsibility for the initial airway management

Requirements for completion of Unit:
- Pass a certified life support course e.g. ALS, APLS, ATLS or similar (or have 'current' certification)
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Interpretation of arrhythmias seen in the peri-arrest period, including but not limited to: • Narrow complex tachycardias • Broad complex tachycardias • Atrial fibrillation • Paroxysmal SVT • Bradycardia • 1st 2nd and 3rd degree heart block				
Pharmacology of drugs used to treat common arrhythmias, dosage and frequency, including but not limited to: • Adenosine • Digoxin • Magnesium • Beta-blockers • Amiodarone • Atropine				
Indications for performing cardioversion and the energies used				
Indications for, and principles of, pacing including percussion, external and transvenous				
Indications for use of thrombolysis				
Indications and principles of therapeutic hypothermia after cardiac arrest				
Indications and principles of: • Open chest cardiac compressions • Resuscitative thoracotomy [Cross ref: cardiothoracic]				
Principles of managing cardiac arrest in the prone position				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Difference in aetiology of cardiac arrest between adults and children				
Recognition of the sick/deteriorating ill child and what treatment should be initiated to reverse such deterioration and prevent, where possible, respiratory or cardiac arrest				
Specific conditions likely to deteriorate to respiratory or cardiac arrest in children [e.g. meningococcal sepsis] and their initial management				
Indications for, and use of, cuffed and uncuffed tubes in the critically ill child requiring tracheal intubation				
Describes how to • Recognise supraglottic airway obstruction and understands the indications/contraindications of supra-glottic airway devices to bypass obstruction • Manage complications of tracheostomy in children				
Principles of safe inter-hospital transfer of the resuscitated patient				
Demonstrates the use of external cardiac pacing				
Demonstrates the treatment of arrhythmias using drugs and cardioversion				
With reference to the paediatric airway demonstrate the ability to : • Control the airway • Perform positive pressure ventilation				
Establishing vascular access in children with 'difficult veins', including the use of intraosseous devices				
Leadership during resuscitation, including supporting less experienced members of the team				
Ability to teach and assess basic competencies				
Provides feedback to staff and relatives in post-resuscitation attempts brief				

Non-theatre

Learning objectives:
- To build on the competencies gained in basic curriculum to include managing patients in a greater variety of out of theatre environments.

Core clinical learning outcomes:
- To deliver safe peri-procedure anaesthesia/sedation to adult patients outside the operating theatre, but within a hospital setting, for painful or non-painful therapeutic procedures under distant supervision

Requirements for completion of Unit:
- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Different techniques of anaesthesia/sedation for adults and children for procedures that may take place outside the operating theatre, but within a hospital setting, either diagnostic or therapeutic for both elective and emergency procedures, including but not exclusively in the following settings: • X-Ray • CT scan • Angiography • MRI scan • Radiotherapy • ECT				
Indications/contraindications of sedation for patients in the non-theatre environment [Cross ref: sedation]				
Problems of providing safe post-anaesthetic care for patients in the out of theatre environment				
Unique safety precautions required in each of the environments, particularly MRI , ECT				
Specific physical and physiological effects of ECT				
Rationale behind the choice of anaesthetic technique for ECT				
Physical and psychological needs of patients who present for ECT				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
The Mental Capacity Act in relation to the provision of ECT				
Common interventional procedures and their pathophysiological consequences				
Anaesthetic management of patients for endovascular procedures				
Anaesthetic management of patients for neurological procedures				

Ophthalmic

Optional Intermediate unit

Learning objectives:
- Gain knowledge, skills and experience of the perioperative anaesthetic care of patients undergoing ophthalmic surgery
- Understand the rationale behind the choice of local or general anaesthesia for common ophthalmic procedures

Core clinical learning outcomes:
- Deliver safe perioperative anaesthetic care to adults and children requiring routine ophthalmic surgery under direct supervision, and emergency anaesthesia for ASA 1 and 2 patients requiring minor/intermediate ophthalmic surgery under distant supervision
- Demonstrate the ability to provide local anaesthesia for eye surgery with competence in one technique

Requirements for completion of Unit:
- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, DOPS ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Preoperative assessment of ophthalmic patients with particular reference to associated co-morbidities; how the care of high risk patients requiring ophthalmic surgery may be optimised				
Effects of physiological changes associated with ageing and altered pharmacological responses				
Choice of local or general anaesthetic techniques in relation to the patient and surgery including their advantages, disadvantages and indications with particular reference to some or all of the following: • Cataract surgery • Strabismus surgery • Glaucoma surgery • Vitreoretinal surgery • Oculoplastic surgery				
Oculocardiac reflex, its treatment and prevention				
Action of anaesthetic drugs on the eye				
Physiological mechanisms which control intraocular pressure				
Drugs which may alter intraocular pressure				
Precautions required for revision surgery in patients who have had a previous injection of intraocular gas				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Techniques of anaesthesia for patients with penetrating eye injury				
Operating conditions required for successful outcomes in ophthalmic surgery and how these can be achieved				
Special requirements of children undergoing ophthalmic surgery				
Advantages and disadvantages of sedation techniques for ophthalmic procedures				
Safety precautions required during the use of lasers in ophthalmic surgery				
Applied anatomy for insertion of local anaesthetic blocks for ophthalmic surgery				
Techniques of local anaesthesia for ophthalmic surgery including their advantages, disadvantages and indications with particular reference to: • Topical anaesthesia: local anaesthesia drops • Superficial injection anaesthesia: subconjunctival block • Cannular blocks: sub-Tenon's anaesthesia • Needle blocks: extraconal [peribulbar] and intraconal [retrobulbar] injections				
Risks associated with needle blocks				
National guidelines regarding local anaesthesia for intraocular surgery				
Specific risk of wrong-site surgery when operating on paired organs such as the eyes				
Specific factors in the postoperative care of patients who have had ophthalmic surgery				
Perioperative anaesthetic care in patients with significant co-morbidities and with consideration of the specific requirements for ophthalmic surgical procedures including: • Cataract surgery • Strabismus surgery • Glaucoma surgery • Vitreoretinal surgery • Oculoplastic surgery				
Airway maintenance techniques for general anaesthesia for ophthalmic procedures				
Control of perioperative intraocular pressure				

Orthopaedic

Learning objectives:
- Build on the knowledge, understanding and skills gained in Basic Level training
- To gain knowledge, skills and experience of the perioperative anaesthetic care of patients requiring major spinal and pelvic orthopaedic surgery

Core clinical learning outcomes:
- Deliver safe perioperative anaesthetic care to complicated ASA 1-3 adult patients for all elective and emergency orthopaedic/trauma surgery identified at the Basic Level as well as those requiring lower limb primary joint replacement surgery
- Manage elective and emergency operating sessions with such patients with distant supervision

Requirements for completion of Unit:
- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, ALMAT ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Difference in anaesthetic and surgical complexity between primary and secondary lower limb arthroplasty				
Principles of perioperative anaesthetic care for elective and emergency spinal surgery including but not exclusively: • Scoliosis surgery including the need for, and implications of, neurophysiological monitoring • Spinal trauma and the associated complications of spinal cord trauma				
Principles of perioperative anaesthetic care for pelvic bone and joint surgery				
Blood conservation strategies used in orthopaedic surgery				
Perioperative anaesthetic care for a variety of orthopaedic surgical procedures in patients with significant co-morbidities [including but not exclusively]: • Primary and revision lower limb arthroplasties • Upper limb surgery in the head-up and sitting positions • All ORIF surgery				
Management of elective and emergency orthopaedic and trauma theatre sessions safely and effectively				

Plastics/Burns

Optional Intermediate unit

Learning objectives:

- Gain knowledge of the initial resuscitation and management of a patient with severe burns prior to transfer to a specialist centre
- Gain an understanding of the specific requirements of anaesthesia for burns and plastic surgery including the principles of safe perioperative anaesthetic care to patients for a wide range of surgical procedures undertaken by plastic surgeons [to include microsurgery and free-flap reconstructive techniques]

Core clinical learning outcomes:

- Deliver safe perioperative anaesthetic care to ASA 1-3 adult patients for minor to intermediate plastic surgery [e.g. tendon repair or split skin grafting] with distant supervision

Requirements for completion of Unit:

- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, DOPS ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Specific features of preoperative assessment of patients for major plastic surgery procedures				
Anaesthetic techniques appropriate for plastic surgical procedures including major reconstructive cases procedures				
Methods for improving blood flow to the surgical field during plastic surgery				
Pathophysiology of burn injury including thermal airway injury and smoke inhalation				
Initial assessment and management of a patient with severe burns, including electrical & chemical burns; analgesia, airway and fluid management				
Principles of anaesthetic management of burns patients for surgery including dressing changes, grafting and related procedures				
Strategies to improve the surgical field by pharmacological [including induced hypotension] and non-pharmacological methods				
Initial assessment and management of the patient with severe burns				

Regional

If training in some of the regional blocks identified is not available it should be deferred to Higher Training years [ST 5/6/7] years. While all the blocks listed below may not be available trainees should achieve a broad spread of block experience.

Learning objectives:
- Build on the basic knowledge and skills gained in basic regional anaesthesia
- Increase the range of block techniques practiced
- Become skilled in performing some more complex blocks under direct supervision
- Become skilled in performing some simple nerve blocks with distant supervision

Core clinical learning outcomes:
Perform one each of the following blocks satisfactorily under local supervision:
- Thoracic epidural and/or combined spinal/epidural
- Upper limb plexus block with peripheral nerve stimulation or ultrasound guidance
- Lower limb plexus block with peripheral nerve stimulation or ultrasound guidance
- Demonstrates understanding of basic sciences as applied to all regional anaesthetic blocks

Requirements for completion of Unit:
- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, ALMAT ×1, DOPS ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Advantages and disadvantages, techniques and complications [including management] of a wide variety of blocks including, but not exclusively, major peripheral blocks of the limbs, some cranial nerve blocks and blocks used to treat chronic pain conditions				
Understanding in the choice of local anaesthetic agents, opioids, use of additives and techniques of administration				
Principles of continuous catheter techniques for peripheral nerve blockade and for postoperative analgesia				
In-depth understanding of the principles of ultra sound guided nerve blocks including: • Principles of scanning including machine ergonomics, probe selection/handling, use of acoustic couplant [ultrasound gel] to improve skin contact • Importance of the angle of insonation on visibility of structures [anisotropy] specifically related to nerves and tendons • Normal sonoanatomy of peripheral nerves and surrounding structures • Concepts of needling • Spread of local anaesthetic under ultrasound guidance, distinction between normal, intraneural and intravascular injection				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Perioperative management of patients receiving regional techniques [identified below] including liaison with theatre staff, surgeons, recovery staff, acute pain teams and ward staff				
Central nerve blocks including caudal and thoracic epidural and CSE				
Major nerve blocks including: • Upper limb brachial plexus blocks [minimum of one such block] • Lower limb blocks such as Sciatic nerve block and Lumbar plexus block [minimum of one such block]				
Minor nerve and other blocks including as many of these as possible: • Superficial cervical plexus block • Trunk [penile, rectus sheath, intercostal and inguinal blocks] • Upper limb [elbow and distal] • Lower limb [ankle and distal] • Ophthalmic blocks [Cross reference ophthalmic anaesthesia] • IVRA • Infiltration and fascial plane blocks				
Recognition and management of adverse effects and complications of the more complex regional anaesthesia described at this level				

Sedation

Learning objectives:
- Build on the knowledge, understanding and clinical skills in sedation developed in basic level training
- Be able to discuss where and when deeper levels of sedation may be indicated
- Be able to deliver pharmacological sedation to patients of all ages, safely and effectively, whilst recognising their own limitations

Core clinical learning outcomes:
- To recognise the important principal of minimum intervention, where the simplest and safest technique which is likely to be effective is used to achieve the clinical goal
- Provision of safe and effective sedation to any adult patient using multiple drugs if required

Requirements for completion of Unit:
- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, ALMAT ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
'Deep sedation', when its use may be justifiable, associated risks and how these may be minimised to ensure patient safety is not compromised				
How multiple drug use may enhance sedation techniques, and how this increases risks				
Titration multiple drugs [sedatives, analgesics and anaesthetic agents] to effect; possibility of differing times of onset, peak effect and duration causing unpredictable responses				
Infusions compared to bolus doses; target-controlled infusions [TCI], and the pharmacological models and pump technology relevant to their use				
Options for 'alternative' route of delivery of drugs used for conscious sedation including intra-nasal and rectal				
Unpredictable nature of sedation techniques in the 'extremes of life' and strategies for safe delivery [Cross ref: paeds]				
Sedation in the high risk patient and the advantages/disadvantages of general anaesthesia as opposed to sedation to cover necessary investigations/procedures in such patients				
Administer and monitor sedation techniques to all patients for appropriate clinical procedures, safely and effectively				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
When considering the choice of sedation technique: • No one technique is suitable for all patients; the most appropriate technique is that based on minimum intervention, using the simplest and safest effective technique based on patient assessment and clinical need • Techniques using multiple drugs/anaesthetic drugs should only be considered where there is a clear clinical justification, having excluded simpler techniques				

Transfer Medicine

Learning objectives:

- Build on the knowledge, understanding and skills obtained in Basic Level training; develop greater confidence and ability to provide clinical care to patients requiring transfer, including those for inter-hospital transfer

Core clinical learning outcomes:

To deliver safe and efficient transfer [with distant supervision] of:

- Complex patients for intra-hospital including retrieving a newly referred ITU patient from A&E or the wards
- An uncomplicated ventilated patient for inter-hospital transfer by land [less than 4 hours]

Requirements for completion of Unit:

- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, ALMAT ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Risks/benefits of Interhospital patient transfer				
Concept of primary/secondary/tertiary transfer				
Hazards associated with Interhospital transfer, including but not limited to physical, psychological and organisational				
Increased risks to critically ill patients of transfer and the reasons for these risks				
Strategies to minimise risk during Interhospital transfer, including but not limited to: • Stabilisation • Pre-emptive intervention • Sedation • Monitoring • Packaging • Choice of mode of transfer				
How critical illness affects the risk of transfer				
How time-critical elements may influence risks to the patient and transfer personnel and how these should be managed to reduce them				
Increased risk of interventions during Interhospital transfer				
Specific considerations for transfer of patients with specific clinical conditions, including but not limited to: • Critically ill medical patients • Burns • Head, spinal, thoracic and pelvic injuries • Children • Pregnant women				
Critical care equipment used during transfer including but not exclusively: • Ventilators • Infusion pumps • Monitoring				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Different modes of ventilation and selection of appropriate settings in e.g. asthma/COPD, ARDS				
Different modes of transport available for inter-hospital transfer, including risks/benefits				
Safety implications of electrical and hydraulic equipment that may be used during patient transfer				
Physiological effects of transport including the effects of acceleration and deceleration				
Effects of high ambient noise on patients and alarm status				
Reasons for patients becoming unstable during transfer and strategies for management				
How to manage patients who develop sudden airway difficulties whilst in transit [both in the intubated and un-intubated patient]				
Ethical issues related to patient transfer, including the need to brief patients and their relatives				
Laws relating to deaths in transit				
National register of critical care beds				
Regional protocols for organising transfers between units				
Importance of maintaining communications between the transfer team and the base/receiving units				
Roles and responsibilities of all staff accompanying the patient during transfer including the ambulance technicians and paramedics				
Personal equipment needed when leading a transfer, especially when a prolonged journey is anticipated				
Auditing practice and reporting critical incidents that arise during Interhospital transfer and the need for appropriate research				
Determining when patients are in their optimum clinical condition for transfer				
Packaging a patient optimally for Interhospital transfer to minimise risks				
Establishing appropriate ventilation, monitoring & sedation required of a critically ill patient for interhospital transfer				
Organisational and communication skills in managing inter-hospital transfers; recognition of the importance of maintaining contact with base/receiving units if necessary whilst on transfer				

Trauma and stabilisation

Learning objectives:

- Build on the knowledge, understanding and skills obtained in Basic Level training; develop greater confidence and ability to provide clinical care to patients with multiple injuries
- Gain an in-depth understanding of how to manage massive blood loss in the multiply injured patient with an associated head injury
- Gain in-depth understanding of the problems associated with trauma: severe burns; electrical injuries; drowning/near drowning; hypothermia

Core clinical learning outcomes:

- Be an effective member of the multi-disciplinary trauma team and take responsibility for the initial airway management of the multiply injured patient with distant supervision
- Be able to manage acute life-threatening airway problems safely and effectively with distant supervision
- Provide safe perioperative anaesthetic care [from arrival in the Emergency Department through to post-operative discharge to the ward from recovery or intensive care] for ASA 1-3 patients with multiple injuries with distant supervision, whilst demonstrating understanding of knowing when to seek senior help

Requirements for completion of Unit:

- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, ALMAT ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Complex pathophysiological changes that occur in all patients [including children] with multiple injuries				
Perioperative anaesthetic management of patients with multiple injuries including head, facial, neck/spinal, thoracic, abdominal, pelvic and peripheral trauma				
Hospital triage of trauma patients and scoring systems used				
Specific ethical and ethnic issues associated with managing the multiply injured patient, including issues that relate to brain stem death and organ donation				
Strategies for minimising secondary brain injury in patients with multiple injures				
Initial assessment, management and resuscitation of patients with: • Severe burns • Electrical injuries • Drowning and near drowning • Hypothermia				
Management of massive blood loss including the use of rapid infusion devices				
Implications, prevention and management of coagulopathy, hypothermia and acidosis in multiply injured patients				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Management of children with multiple injuries, comparing and contrasting with that of adults [Cross ref: Paeds]				
Indications and contraindications of regional anaesthesia and peripheral nerve blocks in multiply injured patients for the provision of analgesia, both initially and perioperatively				
Principles of clinical management for stabilisation of patients with multiple injuries requiring inter-hospital transfer strategies used, how safe transfer is undertaken, monitoring requirements and the options for modes of transfer [Cross ref: Transfer]				
Leading the multi-disciplinary trauma team; ensuring that the primary survey, resuscitation and secondary surveys are conducted appropriately in non-complex trauma patients				
Advanced airway management skills in trauma patient [including those with suspected unstable cervical spine] including surgical airway techniques				
Effective communication with: • Senior colleagues when planning/organising definitive care • Colleagues in the referral centre when organising the transfer of a patient • Relatives, showing due compassion and understanding				
Perioperative anaesthetic management of patients with multiple injuries requiring early surgery, including management of major blood loss and associated coagulopathy, hypothermia and acidosis				
Preparation of patients for safe transfer including ensuring adequate resuscitation, appropriate accompanying personnel and the use of checklists				
Inter-hospital transfer of stable trauma patient[s], including those with brain injury, whilst also ensuring the safety of accompanying personnel				
Interpreting imaging relevant to the primary survey				

Vascular

Optional Intermediate unit

Core clinical learning outcomes:

- Gain knowledge of the perioperative anaesthetic management of patients undergoing elective and emergency abdominal aortic surgery and newer stenting techniques

Requirements for completion of Unit:

- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, DOPS ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Cardiovascular physiology and pharmacology relevant to perioperative vascular surgery				
Methods of assessment of the patient's functional cardiovascular capacity				
Preoperative management of the patient with atherosclerotic disease				
Perioperative management of the patient for major vascular surgery				
Resuscitation and management of major vascular accidents including management of ruptured aortic aneurysm				
Management of endovascular radiological procedures [e.g. Stenting] including anaesthesia in isolated locations [Cross ref: non-theatre]				
Management of elective carotid artery surgery with general or regional anaesthesia				
Principles and anaesthetic implications of sympathectomy, including thoracoscopic procedures				
Postoperative management and critical care of vascular patients				
Effects of smoking on health				
Morbidity and mortality associated with vascular surgery				
Principles of blood conservation and red cell salvage when major haemorrhage is predicted				
Pathophysiology of aortic cross-clamping and of renal protection strategies				

Obstetrics

Learning objectives:
- To build on experience of basic training to be able to work with distant supervision

Core clinical learning outcomes:
- Able to provide emergency and non-emergency obstetric anaesthetic care in the majority of patients including those with co-morbidities and obstetric complications with distant supervision
- Perform immediate resuscitation of acute obstetric emergencies

Requirements for completion of Unit:
- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, DOPS ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Influence of common concurrent medical diseases on pregnancy				
Obstetric and anaesthetic management of a premature delivery				
Obstetric and anaesthetic management of multiple pregnancy				
Classification of placenta praevia and the associated risk to the patient				
Recognition and management of amniotic fluid embolus				
Recognition and management of inverted uterus				
Management of accidental dural puncture and post dural puncture headache				
Local anaesthetic toxicity – recognition and 'lipid rescue'				
Common causes of maternal morbidity and mortality, including national reports				
Particular sensitivity of patient choices in obstetric practice, even when this is not in line with accepted Notes based best practice e.g. choice of birth plan, refusal of blood products				
Assessment of pregnant woman presenting for anaesthesia / analgesia including those with concurrent disease				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Communicating a balanced view of the advantages, disadvantages, risks and benefits of various forms of analgesia and anaesthesia appropriate to individual patient				
CSE, subarachnoid, and epidural analgesia for labour				
Intravenous opiate analgesia including PCA for labour				
Complications of regional block including failure to achieve an adequate block				
CSE for operative delivery				
Choosing the most appropriate regional technique for an operative delivery and justifying the decision				
Intra uterine resuscitation for the “at risk” baby				
Anaesthesia for a caesarean section for placenta praevia [under direct supervision]				
Managing a high dependency obstetric patient [with distant supervision]				
Basic neonatal resuscitation				

Paediatric

Learning objectives:
- Build on the knowledge and skills gained during Basic Level training
- Develop in-depth knowledge and understanding of the anaesthetic needs of children and neonates
- Understand the potential hazards associated with paediatric anaesthesia and have obtained practical skills in the management of such events

Core clinical learning outcomes:
- Deliver safe perioperative anaesthetic care to ASA 1 and 2 children aged 5 years and over for minor elective and emergency surgery (e.g. inguinal hernia repair, orchidopexy, circumcision, superficial plastic surgery, grommets, manipulation of fractures, appendicectomy) with distant supervision

Requirements for completion of Unit:
- Appropriate numbers of cases & case mix
- Appropriate number of WPBAs – minimum A-CEX ×1, DOPS ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Applied basic sciences relevant to all age groups including neonates				
Implications of paediatric medical and surgical problems including major congenital abnormalities (e.g. tracheoesophageal fistula, diaphragmatic hernia), congenital heart disease and syndromes (e.g. Down's) for anaesthesia				
Adverse effects of starvation and hypoglycaemia in neonates and children				
Specific factors in preoperative assessment and preparation of neonates for surgery				
Special anaesthetic techniques for neonates				
Thermoregulation in the newborn and the measures required to prevent hypothermia				
The law as it relates to children in respect of Consent, Restraint and Research and the concept of 'Gillick competence'				
Anaesthetic management of neonates and infants for minor operations, major elective and emergency surgery				
Specific anaesthetic and monitoring equipment required for neonates				
Common anaesthetic problems in the neonatal period and their perioperative anaesthetic management [e.g. inguinal hernia, intestinal obstruction, pyloric stenosis]				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Special problems of the premature and ex-premature neonate				
Child Protection and how to be responsible for taking appropriate action when non-accidental injury is suspected				
Recognition and management of the critically ill child with e.g. sepsis, trauma, convulsions, diabetic emergencies				
Principles of stabilisation and safe transport of critically ill children and babies				
Ability to resuscitate all ages, both basic and advanced [BLS and ALS]				
Preoperative assessment in all ages down to 1 year				
Induction, maintenance and monitoring for elective and emergency anaesthesia				
Selection, management and monitoring of children requiring diagnostic and therapeutic procedures carried out under sedation				
Maintenance of perioperative physiology [e.g. glucose, fluids and temperature] in children down to 5 years of age				
Strategies for, and the practical management of, anaesthetic emergencies in children [e.g. loss of airway, laryngospasm, failed venous access, anaphylaxis including latex allergy]				
Postoperative pain management, including the use of regional and local anaesthetic techniques, simple analgesics, NSAIDs and opioids				
Communicating clearly with children & young people, parents and carers. including those with cognitive, communication or behavioural problems				

Pain medicine

Learning objectives:
- Build on the competencies gained during Basic Level training
- Be fully competent in the assessment and management of acute surgical and non surgical and acute on chronic pain in most patient groups and in most circumstances
- Be an effective member of the acute pain team
- Have a knowledge of the assessment, management and wider treatment options for chronic and cancer pain in adults
- Be aware of the need for multi-professional input and to embrace this in the management of chronic and cancer pain

Core clinical learning outcomes:
- To be competent in the assessment and management of acute surgical and non-surgical pain in most patient groups and circumstances
- To be an effective member of the acute pain team
- To understand the importance of managing acute on chronic pain in a timely manner
- To have knowledge of assessment and management of chronic and cancer pain

Requirements for completion of Unit:
- Minimum of 20 pain sessions (including a balance of acute and chronic, with a minimum of 12 chronic)
- Appropriate number of pain logbook cases
- Appropriate number of WPBAs – minimum A-CEX ×1, DOPS ×1, CBD ×1
- Achievement of core clinical learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Assessment and management of acute pain in all types of surgery				
Assessment and management of acute non surgical pain				
Assessment and management of acute pain in special groups to include children, infants, the older person, the cognitive impaired, those with communication difficulties, the unconscious and critically ill patient				
Basic assessment and management of chronic pain in adults				
Basic assessment and management of cancer pain in adults				
Advanced pharmacology of drugs used to manage pain including neuropathic pain				
Basic assessment and management of neuropathic pain				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Rationale for the use of opioids in the management of chronic non malignant pain				
Requirement for the multidisciplinary management of chronic pain				
Undertaking a significant role in an acute pain service				
Management of acute pain in those on background large dose opioids				
Continuity of care and communication in the management of pain				

Academic & research [including audit]

Essential intermediate non-clinical unit of training

Learning objectives:
- Consolidate understanding of evidence based practice and audit
- Be able to undertake simple audit projects independently
- Extend critical abilities with regard to clinical science
- Be an assured presenter in clinical audit meetings and journal clubs

Requirements for completion of Unit:
- Record satisfactory attendance at 15 of local audit, MDT, morbidity & mortality and journal club meetings
- Reflective portfolio of attendances
- Present at Journal club, Audit or Morbidity & Mortality meeting
- Portfolio showing clinical critical incidents and reports

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Rationale and methodology of meta-analysis				
How clinical guidelines are produced				
Major national audit processes, including but not exclusively the National Confidential Enquiry into Patient Outcomes and Death [NCEPOD]				
Links between audit and quality improvement				
Methodology and processes of clinical research, including but not exclusively: • Ethical and approval considerations raised by research • Importance of study design in clinical research • Importance of statistical analyses				
GMC guidance on good practice in research				
Local and national research guidelines				
A knowledge of research principles				
How to test, refine and verify hypotheses				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
How reasoning leads to hypothesis within the context of clinical likelihood				
Difference between population-based assessment and unit-based studies; evaluation of outcomes for epidemiological work				
Principles of meta-analysis				
Critical review an article to identify the level of evidence and submits the same for objective review				
National and local databases used for audit such as specialty data collection systems, cancer registries, and for reporting and learning from clinical incidents and near misses in the UK				
Supports audit with the multidisciplinary team				
Attends morbidity and mortality meetings, contributes to discussion and presents cases				

Completion of Intermediate Level Unit of Training

Academic & research [including audit]

Trainee name: …… GMC no: ……

Record of meetings attended
Has the trainee recorded satisfactory attendance at 15 local audit, MDT, M & M and journal club meetings and with a reflective portfolio of attendances? Yes No

Presentation
Has the trainee presented at a Journal club, audit or M & M meeting? Yes No

Portfolio of critical incidents
Has the trainee a record in their portfolio of clinical critical incidents? Yes No

Comments

Signed: ..... Name (Print): ..... Date: .....
(College Tutor, Unit Lead or Educational Supervisor)
When unit is complete please also sign summary page at front of record book

Signed: ..... Name (Print): ..... Date: .....
(Trainee)

Teaching & learning

Essential intermediate non-clinical unit of training

Core learning outcomes:

- Continue to participate appropriately in the management of their own teaching, learning and assessment
- Contribute to institutional educational programmes as participant and presenter developing upon the learning gained in CT1 & 2; now actively seeking feedback on own performance
- Undertake appropriate supervision and practical teaching within the clinical team
- Give appropriate feedback when they have taught and supervised
- Undertake opportunistic teaching and in less structured, informal, educational contexts

Requirements for completion of Unit:

- Portfolio recording engagement in teaching and learning; including reflections
- Record of participation in formal educational meetings and teaching
- Feedback on teaching delivered, including own reflections
- A-CEX relating to own teaching and supervision of a more inexperienced trainee
- CBD on selected education topic

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
How to design and implement a personal learning plan for an educational activity related to own learning				
How to create a framework in which to teach a practical skill safely				
Which teaching method to select for effective learning in a variety of situations				
How to give and receive effective feedback				
How to perform WBA for foundation and less experienced anaesthetic trainees				
Roles and responsibilities of educational agencies involved in postgraduate medical education				
Lists basic concepts and role of human factor and team based training including crisis resource management in ensuring patient safety				
Knows value of inter-professional learning				
Participates in departmental education and learning				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Creates clinical learning opportunities for others				
Plans and conducts a teaching session				
Provides appropriate clinical supervision to less experienced colleagues				
Performs self-critical review of own educational practice				
Participates in human factor and patient safety training				

Completion of Intermediate Level Unit of Training

Teaching & learning

Trainee name: …… GMC no: ……

Assessments
Has the trainee completed successfully an appropriate number of WPBA? Yes No

Portfolio
Has the trainee a record of engagement in teaching & learning including reflections and feedback received? Yes No

Multi-source Feedback
Has a MSF been completed? Yes No

Comments

Signed: ..... Name (Print): ..... Date: .....
(College Tutor, Unit Lead or Educational Supervisor)
When unit is complete please also sign summary page at front of record book

Signed: ..... Name (Print): ..... Date: .....
(Trainee)

Management

Essential intermediate non-clinical unit of training

Learning outcomes:
- Understand the structure of local management
- Engage with departmental organisational processes
- Observe local and national systems for clinical governance

Requirements for completion of Unit:
- Achievement of learning outcomes

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Guidance given by the GMC regarding doctors in management				
Local management structures facilitating clinical governance				
Role of the clinical director and medical director				
How working practices are affected by national and European legislation on hours of work and rest periods				
Processes of trust indemnity for errors in patient management				
Areas of liability that may not be covered by trust indemnity				
Principles of recognising equality and diversity in the workplace				
Management framework of medical education, including the role of the RCoA, Postgraduate Dean, and the General Medical Council				
Local processes for scheduling work and organising supervision				
Inter-professional understanding, cooperation and learning				
Role of IT in the modern NHS				

Knowledge/Skills	Tick if confident/ discussed	Trainer initial	Date	Notes
Complies with local mandatory training and local practices for health and safety, control of infection etc.				
Organises personal anaesthetic service effectively when responsible				
Demonstrates use of IT in the workplace				

Completion of Intermediate Level Unit of Training

Management

Trainee name: …… GMC no: ……

Learning outcomes

Has the trainee demonstrated achievement of the learning outcomes? Yes No

Comments

Signed: ..... Name (Print): ..... Date: .....
(College Tutor, Unit Lead or Educational Supervisor)
When unit is complete please also sign summary page at front of record book

Signed: ..... Name (Print): ..... Date: .....
(Trainee)

Improvement Science, Safe and Reliable Systems

Optional intermediate non-clinical unit of training

Learning Outcomes:

- Consolidates understanding of Quality Improvement principles
- Demonstrates enhanced knowledge and skills of Improvement Science
- Can present evidence of quality improvement outcome and impact of change implemented
- Can demonstrate quality improvement benefit to patient, staff and organisation

Assessment

- Has personally led a Quality Improvement project
- Presentation of a Quality Improvement project (case study, oral or poster presentation)
- Participates in learning sets (face to face or web based)

Requirements for completion of Unit:

- Achievement of learning outcomes

Completion of Intermediate Level Unit of Training

Improvement Science, Safe and Reliable Systems

Trainee name: …… GMC no: ……

Learning outcomes

Has the trainee demonstrated achievement of the learning outcomes? Yes No

Comments

Signed: ..... Name (Print): ..... Date: .....
(College Tutor, Unit Lead or Educational Supervisor)
When unit is complete please also sign summary page at front of record book

Signed: ..... Name (Print): ..... Date: .....
(Trainee)