Appendix 3 –Specialised Study Unit Review Question Guide

*Prior to an SSU sign off a specialised study unit review is conducted and as part of this process, the specialised study unit supervisor will ask the trainee **three questions**, based on the learning outcomes from the specialised study unit (SSU) relevant to the review.*

The questions are determined by the specialised study unit supervisor on an independent basis and they must indicate in the training portfolio system that the questions have been satisfactorily answered by the trainee. The aim is not to produce the most difficult questions, it is rather to attempt to assess the trainee's knowledge and their understanding of the management of patients in that specialised study unit.

The following bank of SSU questions has been developed to assist supervisors with choosing the three questions to be asked at the review. The list of questions has been collated by the ANZCA Education Unit and Fellows. The list provides questions which can be used as they are or as a guide to the type of questions that can be asked; it is not meant to be prescriptive.

Please refer to the Handbook for training for further specialised study unit review information and guidance.

SSU review question guide

Code	Learning Outcome	Possible Question
Cardiac Surgery and Interventional Cardiology		
SS_CS 1.3	Describe pharmacological and non-pharmacological strategies to relieve anxiety in patients presenting for cardiac surgery	What are the goals of pre-operative assessment of a patient presenting for an elective cardiac surgical procedure? What information do you tell the patient and how can you best prepare them for the procedure?
SS_CS 1.4	Discuss the perioperative assessment of: • Myocardial ischaemia • Cardiac rhythm • Filling status • Left ventricular systolic and diastolic function • Right ventricular function and pulmonary artery pressure • Valve pathology • Shunts	How can you assess left ventricular filling status (preload) during anaesthesia for cardiac surgery? What would you consider the most accurate method and why?
		What evidence would suggest to you the presence of right ventricular ischaemia during anaesthesia for cardiac surgery?
		What would help to differentiate acute mitral valve regurgitation (for example, due to acute ischaemic papillary muscle rupture) from chronic mitral valve regurgitation?
SS_CS 1.7	Describe an appropriate anaesthetic technique for the following cardiac surgical procedures including haemodynamic goals: • Coronary artery bypass • Aortic and mitral valve replacement	What are your goals when anaesthetizing a patient for coronary artery grafting and how would you achieve these?
		What are your goals when anaesthetizing a patient for valve replacement surgery for a stenotic valve lesion (for example mitral stenosis)? Would there be a difference if the patient had a predominantly regurgitant lesion?
		How would the decision to perform coronary artery grafting off pump rather than on pump change your anaesthetic management?
SS_CS 1.11	Outline principles of programming cardiac pacemakers	How would you programme the pacemaker for epicardial pacing post cardiac surgery, and what problems might you encounter?
SS_CS 1.15	Outline the specific issues associated with ‘re-do’ cardiac surgery	In what ways does anaesthesia for a “redo” sternotomy differ from that for a primary sternotomy? What additional problems might the surgeon face and how would you prepare for these and manage them should they arise?
SS_CS 1.17	Outline the issues related to the care of patients undergoing cardiopulmonary bypass, including:	What drugs can you administer during the course of cardiac surgery to manipulate coagulation? What doses do you use and what are the most important side-effects?
		How can you monitor coagulation status in the peri-operative period?

Code	Learning Outcome	Possible Question
SS_CS 1.17	• Maintenance of anaesthesia during this period • Intraoperative myocardial protection • Potential neurocognitive effects and cerebral protection • Implications of aortic disease for aortic cannulation • Anticoagulation during cardiopulmonary bypass and point-of-care and laboratory methods of monitoring anticoagulation • Use of antifibrinolytics • Management of protamine reactions • Reperfusion injury and ischaemic preconditioning • Haematological and inflammatory effects of cardiopulmonary bypass • Steps to take to safely initiate and wean from bypass	What is the process of weaning a patient from the bypass pump? What checks are made prior to separation? What drugs do you know of that we might use to support the circulation after weaning from bypass? How (what doses) do we use these?
SS_CS 1.18	Describe an approach to the patient with heparin resistance, heparin induced thrombocytopenia and thrombosis (HITTS) and heparin induced thrombocytopaenia (HITS)	How would you manage heparin resistance and heparin induced thrombocytopaenia?
SS_CS 1.23	Outline the common complications presenting in the early postoperative period in cardiac surgical patients and their management	What are the most important complications of cardiac surgery and what steps can you take as the anaesthetist to mitigate them?
SS_CS 1.24	Outline a basic haemodynamic assessment using TOE or TTE	How would you use TOE or TTE to perform a rapid assessment of a patient's haemodynamic status?

Code	Learning Outcome	Possible Question
SS_CS 1.26	Describe the initial medical management of the patient with acute myocardial infarction and cardiogenic shock and outline the principles of providing anaesthesia for acute revascularisation (also refer to the *Resuscitation, trauma and crisis management* clinical fundamental)	How would you anaesthetise a patient presenting in the cardiac cath lab with an acute myocardial infarction and cardiogenic shock?
SS_CS 1.28	Outline principles of intra-aortic balloon counterpulsation	How and why would you use an intra-aortic balloon pump? What are some of the problems you might encounter when using one and how would you solve these?
SS_CS 2.4	Provide safe anaesthesia care for patients undergoing a range of interventional cardiology procedures. These may include: • Electrophysiological studies, radiofrequency and cryoablation for arrhythmias (V) • Pacemaker and defibrillator insertion (V) • Elective and urgent coronary artery stenting (V) • Insertion of percutaneous closure devices (V) Percutaneous valve replacement and valvuloplasty (V)	What problems might you encounter anaesthetizing a patient for the insertion of an AICD? What issues might you expect to encounter when anaesthetizing a patient for a percutaneous valve procedure
AR_PF 1.9	Discuss commonly encountered ethical issues including: • Relief of pain and suffering and end of life decisions • Involvement in procedures to which there may be moral, ethical or clinical	Can you recall any cardiac surgery patients you encountered who you and your consultant thought would have been better served by not having surgery? How was this resolved and do you think that the resolution was satisfactory?

Code	Learning Outcome	Possible Question
	objections, for example, termination of pregnancy • Prevention of futile medical care • Organ donation and transplantation • Consent • Choices between maternal and foetal wellbeing • Off label use of drugs	
General Surgical, Urological, Gynaecological and Endoscopic Procedures		
SS_GG 1.1	For the following discuss the key clinical features which influence anaesthetic management. (Also refer to the *Perioperative medicine* clinical fundamental): • Bowel disease • Disease of the oesophagus • Disease of the stomach • Gallbladder disease • Liver disease • Disease of the spleen • Renal and urinary tract disease • Pancreatic disease • Adrenal disease • Gynaecological disorders • Breast disease	What are the issues involved in a patient having a laparotomy who has liver disease and ascites?
SS_GG 1.2	Discuss the physiological changes associated with pneumoperitoneum and management of those changes	What are the physiological changes that occur during a laparoscopy?
SS_GG 1.3	Outline the differential diagnosis of the acute abdomen and the implications for anaesthetic management of the different causes	What are the anaesthetic issues involved in the management of a patient presenting with an acute abdomen for surgery?

Code	Learning Outcome	Possible Question
SS_GG 1.4	Outline the consequences of prolonged vomiting, bowel obstruction and malabsorption syndromes	What are the problems associated with a patient who has had prolonged vomiting and bowel obstruction?
SS_GG 1.6	Discuss the surgical requirements and implications for anaesthetic management of patients undergoing the following elective general surgery, urological, gynaecological and endoscopic procedures: • Major open abdominal surgery • Major open urological surgery • Major gynaecological operations • Minor general, urological and gynaecological surgery • Breast surgery • Laparoscopic surgery • Endoscopic procedures • Lithotripsy • Treatment for infertility	What are the anaesthetic considerations for a laparotomy for an abdominal hysterectomy and pelvic lymph node dissection in a 62 year old lady with ovarian malignancy?
		What are the anaesthetic issues involved in a patient having an open nephrectomy? What are the specific challenges of anaesthesia for ERCP?
		What are the anaesthetic considerations involved in a patient who will undergo anaesthesia for ureteroscopy and removal of a kidney stone?
		What are the surgical requirements and what is your anaesthesia management for a patient undergoing urological lithotripsy?
SS_GG 1.7	Discuss perioperative analgesia and fluid therapy options for elective general surgery, urological, gynaecological and endoscopic procedures, including strategies for 'fast track' recovery programs for major abdominal surgery	How do you determine fluid requirements for a patient who has had a bowel resection in the perioperative period?
		What is your analgesia regimen for a patient who has had a lower midline laparotomy and bowel resection?
SS_GG 1.8	Discuss the surgical requirements and implications for anaesthetic management of patients undergoing the following emergency general surgery, urological, gynaecological and endoscopic procedures:	What are the priorities in planning for an emergency laparotomy?
		What is your approach to the anaesthetic management of a patient with acute GI bleeding needing urgent upper endoscopy?

Code	Learning Outcome	Possible Question
	• Minor general, urological and gynaecological procedures • Major laparotomy and laparoscopy • Diagnostic laparoscopy • Gastroscopy • Ureteroscopy	
SS_GG 1.9	For patients undergoing the following complex operations, discuss the specific anaesthetic management, including options for perioperative analgesia and perioperative fluid therapy: • Renal transplant • Partial hepatectomy • Surgery for major liver trauma • Oesophagectomy • Pancreatectomy • Adrenalectomy, including phaeochromocytoma • Resection of carcinoid tumour • Bariatric surgery • Breast reconstruction (also refer to the *Plastics, reconstructive and burns surgery* specialised study unit) • Surgery for gynaecological and urological malignancy • Major bowel resection, p exenteration etc.	Outline your perioperative management of a patient undergoing adrenalectomy for a phaeochromocytoma What are the anaesthesia issues involved in bariatric surgery?
SS_GG 1.10	Discuss the diagnosis and management of the possible complications of surgical procedures including (also refer to the *Resuscitation, trauma and crisis management* specialised study unit): • Venous air embolus	What are the problems involved in a patient having a long procedure for transurethral resection of the prostate (TURP)? What are the anaesthetic issues involved in a patient undergoing a prolonged urological procedure in the head-down position?

Code	Learning Outcome	Possible Question
	• Rapid, life-threatening bleeding, including management of severe coagulopathy • Aspiration • Cardiovascular responses to insufflation of the peritoneal cavity • Sepsis • Hypo-osmolar syndromes • Reperfusion of ischaemic organs • Acid base imbalance, temperature control, positioning injuries	
Head and Neck, ENT, Dental Surgery and ECT		
SS_HN 1.2	Describe the indications for and features of special tracheal tubes used in ear nose and throat surgery, for example those used for: • Microlaryngeal surgery • Laser surgery • Laryngectomy	What are the key features of the following pieces of equipment used in airway surgery and anaesthesia? Laryngoflex tube Suspension laryngoscope Boyle-Davis gag Hunsaker Mon-Jet tube MicroLaryngoscopy Tube
SS_HN 1.7	Discuss the surgical requirements and the anaesthetic management of patients requiring common elective ear nose and throat procedures including: • Septo-rhinoplasty • Functional endoscopic sinus surgery (FESS) • Tonsillectomy and/or adenoidectomy • Microlaryngoscopy • Panendoscopy • Insertion of grommets • Myringoplasty or other middle ear surgery • Mastoidectomy • Laryngectomy or pharyngo-laryngectomy	What are the options for maintaining oxygenation during shared airway surgical procedures?

Code	Learning Outcome	Possible Question
	• Parotidectomy • Neck dissection • Tracheostomy	
SS_HN 1.8	Discuss the surgical requirements and the anaesthetic management of patients requiring emergency ear nose and throat procedures including: • Reduction of fractured nose • Removal of inhaled foreign body • Removal of foreign body from the oesophagus or pharynx • Surgical management for obstructing laryngeal lesions (also refer to the *Airway management* clinical fundamental) • Drainage of oro-pharyngeal cysts or abscess, including quinsy	What are the key features in the pre-operative assessment of a patient presenting with both emergency and non-life-threatening airway obstruction who will require a GA for airway surgery?
SS_HN 1.11	Evaluate the use of jet ventilation as a technique for managing the airway and ventilation in patients having ear nose and throat procedures	What are the steps involved in setting up and using jet ventilation and how do you ensure it is done safely?
SS_HN 1.12	Discuss the anaesthetic management of patients requiring thyroid or parathyroid surgery. In particular: • Use, effects and complications of thyroid hormones or anti-thyroid drugs used to stabilise patients perioperatively (also refer to the *Perioperative medicine* clinical fundamental)	What are the key features in the pre-operative assessment and anaesthetic technique for a patient with a retrosternal goitre?

Code	Learning Outcome	Possible Question
	• The effects and management of hyper and hypo-calcaemia • Potential airway management issues and their assessment including in the patient with a retrosternal goitre (also refer to the *Airway management* clinical fundamental) • Surgical positioning and the implications for patient protection and access • Airway, surgical and endocrine complications in the perioperative period and their management	
SS_HN 1.13	Discuss the implications of use of local anaesthetics and vasoconstrictive agents in head and neck surgery	What are the risks of the topical use of cocaine for nasal surgery?
SS_HN 1.15	Evaluate methods for the smooth emergence and/or extubation of patients to minimise bleeding following ear nose and throat and head and neck procedures	What technique do you use to achieve a smooth, cough-buck-free emergence from General Anaesthesia?
SS_HN 1.16	Discuss the indications, method and implications for anaesthetic management of monitoring facial nerve function intraoperatively	What are the indications for, and anaesthetic implications of, intraoperative facial nerve monitoring?
SS_HN 1.17	Discuss the clinical features and management of postoperative haemorrhage following head and neck and ear nose and throat surgery, particularly post tonsillectomy haemorrhage (also refer to the *Airway management* and	What is your plan for anaesthesia for a post-tonsillectomy bleed in a 2yr old?

Code	Learning Outcome	Possible Question
	Resuscitation, trauma and crisis management clinical fundamentals and the *Paediatric anaesthesia* specialised study unit)	
SS_HN 1.18	Describe the risks and management of airway fire	How is the risk of airway fire minimised and how would you manage an airway fire?
SS_HN 1.21	Discuss the anaesthetic management of patients requiring surgical fixation of facial, maxillary and mandibular fractures	What are the key questions to ask to plan your approach to anaesthetic induction and securing the airway in the patient presenting for repair of a mandibular fracture?
SS_HN 1.24	Discuss the anaesthetic management of patients requiring dental procedures including those with: • Intellectual impairment • Disorders of haemostasis	You are called to PACU as your patient is bleeding continuously after tooth extraction under GA. How do you manage and investigate this?
SS_HN 2.5	Provide safe anaesthesia care for patients undergoing electro-convulsive therapy (V)	How does your technique of general anaesthesia influence the effectiveness of ECT?
SS_HN 1.27	Describe the physiological response to electro-convulsive therapy	What is the physiological response to ECT?

Intensive Care		
SS_IC 1.11	Outline the long-term complications of prolonged intensive care admission	What are the long-term complications of prolonged intensive care admission?
SS_IC 1.13	Outline the management of the brain-dead patient awaiting organ donation	How do you manage a brain dead patient awaiting organ donation?
SS_IC 1.15	Define sepsis, severe sepsis and systemic inflammatory response syndrome (SIRS)	What is the difference between sepsis, septic shock, and systemic inflammatory response syndrome (SIRS)?
SS_IC 1.19	Discuss goal directed therapy of sepsis (also refer to the *Perioperative medicine* clinical fundamental)	What are the principles of managing sepsis according to the 'Surviving Sepsis' guidelines?
SS_IC 1.48	Describe the pathophysiology and management of acute severe asthma	How would you ventilate a severely hypoxic asthmatic patient?
SS_IC 1.51	Describe the prevention and management of ventilator associated pneumonia	How does ventilator-associated pneumonia develop and what are the risk factors? What prevention strategies can you use to reduce the incidence of VAP?
SS_IC 1.54	Evaluate ventilation strategies and non-ventilator therapies to optimise oxygenation and ventilation and minimise lung injury	What are the differences between basic spontaneous and manda ICU ventilator modes?
SS_IC 1.55	Discuss the complications of ventilation and the strategies to minimise ventilator-induced lung injury including the ventilation of patients with ARDS	What is Acute Respiratory Distress Syndrome (ARDS) and how is it treated?
SS_IC 1.57	Discuss the assessment and management of extubation in patients who have been intubated for airway obstruction, for	How would you plan and manage extubation in a patient who had been intubated for airway obstruction secondary to Ludwig's angina?

	example, epiglottitis, angioneurotic oedema, Ludwig's angina	
SS_IC 1.63	Outline the indications for hyperbaric oxygen therapy in the critically ill patient and the problems associated with providing this treatment	What are the indications for hyperbaric oxygen therapy in the critically ill patient and the problems associated with providing this treatment?
SS_IC 1.73	Outline the principles of postoperative care of the renal transplant recipient	What are the principles of postoperative care of the renal transplant recipient?
SS_IC 1.75	Outline the intensive care management of severe hypothermia.	How do you manage severe hypothermia in intensive care?

SS_IC 1.77	Discuss the management of endocrine emergencies, including thyroid storm, adrenocortical insufficiency, diabetic ketoacidosis and hyperglycaemic non-ketotic coma	What are the principles of managing diabetic ketoacidosis in ICU?
SS_IC 1.84	Discuss the management of cerebral vasospasm	How is cerebral vasospasm minimised and treated?
SS_IC 1.86	Discuss the intensive care management of: • Raised intracranial pressure • Acute traumatic brain injury • Prolonged seizures • Acute spinal cord injury	What pathophysiological insults can exacerbate a primary brain injury following head trauma and how can they be minimised?
SS_IC 1.87	Outline the principles of management of: • Hemiplegia, paraplegia, quadriplegia. • Postoperative neurosurgical patients • Diabetes insipidus • Cerebral salt wasting	How do you diagnose and manage disorders of sodium haemostasis such as Diabetes insipidus and cerebral salt wasting in ICU patients?
SS_IC 1.93	Outline the diagnosis and management of acute pancreatitis	What are the principles of managing acute pancreatitis in the ICU?
SS_IC 1.95	Discuss the intensive care management of patients who have undergone major abdominal surgery	What complications may occur after partial hepatectomy and how do you manage them?
SS_IC 1.102	Outline the intensive care management of: • Electrocution • Burns • Near drowning • Envenomation • Drug overdose • Corrosive ingestion	How do you manage a patient who has survived a near drowning?

	• Altitude sickness • Decompression syndromes	
Neurosurgery and Neuroradiology		
SS_NS 1.4	Outline the changes to cerebral blood flow control and cerebral perfusion pressure in patients with intracranial pathology	What are the changes in cerebral blood flow control and cerebral perfusion pressure in patients with intracranial pathology?
SS_NS 1.7	Outline the radiological features of common acute neurosurgical conditions	What are the indications for clot retrieval? What are the benefits over traditional treatments? What radiological features would confirm the diagnosis, and demonstrate success of the procedure?
SS_NS 1.9	Outline methods to reduce secondary injury and limit disability in traumatic brain injury and intracranial haemorrhage	Outline methods to reduce secondary injury in intracranial haemorrhage and traumatic brain injury
SS_NS 1.12	Describe the mechanism and management of disorders of sodium control detected after neurosurgery	What are the possible mechanisms of impaired sodium homeostasis after neurosurgery, and how are they assessed and managed?
SS_NS 1.23	Discuss the risks associated with patient positioning for neurosurgical procedures and the methods of risk minimisation	What are the risks associated with positioning for neurosurgical procedures and how do you mitigate them?
SS_NS 1.26	Discuss the anaesthetic management of patients requiring the following neurosurgical procedures: • Clot retrieval for stroke • Craniotomy for intracranial tumour • Craniotomy for intracranial aneurysm or haemorrhage (acute and chronic)	How do you anaesthetise a patient undergoing elective craniotomy for an intracranial tumour? What are the principles in anaesthetising a patient for aneurysmal clipping following an acute subarachnoid bleed and how do you manage anaesthesia for critical times during the case (ie intubation, pins, bone flap removal and clipping)? What is your preoperative assessment of a patient for an elective aneurysm clipping and what is your plan for the anaesthetic? How do you manage anaesthesia during temporary and permanent clip application?

	• Insertion of intracranial pressure monitors • Interventional neuroradiology for acute intracranial bleed • Interventional neuroradiology for stable intracranial vascular pathology • Spinal surgery (cervical, thoracic, lumbar) • Spinal fluid shunt procedures	How will you anaesthetise an awake patient who is going to have intracerebral arterial coiling following an acute subarachnoid bleed?
		How would you provide anaesthesia for acute clot retrieval in a patient who has had an emblic stroke?
		How would you provide anaesthesia for a patient undergoing elective interventional neuroradiological treatment for an arteriovenous malformation?
		What are the key issues in anaesthetising for spinal surgery, including the implications of different spinal levels and different anatomical approaches?
		What are the principles of anaesthetic management of patients requiring procedures for spinal fluid shunts?
		How do you anaesthetise a patient requiring an intracranial pressure monitoring device?
		What are the goals of anaesthetic management in clot retrieval procedures?
SS_NS 1.27	Discuss the anaesthetic management of patients requiring intervention for the following: • Non-neurosurgical trauma in patients with concurrent traumatic brain injury • Traumatic brain injury • Intracranial vascular malformations • Vestibular schwannoma • Trigeminal neuralgia • Pituitary tumours • Epilepsy and movement disorders (including awake craniotomy and deep brain stimulation) • Meningomyelocoele • Cranial vault pathology	What are the issues involved in anaesthetising a patient with non-neurosurgical trauma who has a concurrent acute traumatic brain injury?
		How do you anaesthetise a patient for resection of an acoustic neuroma?
		How do you anaesthetise a patient for transphenoidal hypophysectomy?
		What neurosurgical techniques for management of trigeminal neuralgia do you know and how do you anaesthetise for them?
		What is your approach to anaesthetic care for an awake craniotomy? What scalp nerves need to be blocked and how would you block them?
SS_NS 1.28	Discuss the complications of neurosurgical procedures including:	What neurosurgical procedures might be complicated by venous air embolism? How do you detect and manage it in these cases?

	• Air embolism • Rapid, life threatening bleeding • Cerebral ischaemia (Also refer to the *Resuscitation, trauma and crisis management* and *perioperative medicine* clinical fundamentals)	How do you manage acute life threatening intra operative haemorrhage during a neurosurgical procedures?
Obstetric Anaesthesia and Analgesia		
SS_OB 1.5 / SS_OB 1.32	1.5: Describe the mechanism and consequences of aorto-caval compression in pregnancy. 1.32: Discuss measures to minimise the risk of injury from positioning the pregnant patient during anaesthesia	What are the issues with positioning a patient for a Caesarean Section?
SS_OB 1.10	Describe the pharmacology of oxytocic agents with special reference to oxytocin derivatives, ergot derivatives and prostaglandins	You are managing a woman undergoing emergency CS and she has an atonic uterus and is bleeding. Tell me what dose and route for uterotonic medications you could use. What are their common adverse effects? What if the patient had a history of asthma? What if they had active bronchospasm?
		You are managing a woman undergoing an emergency Caesarean Section who has an atonic uterus and is bleeding. What dose and route of administration of uterotonic medications could you use? What are the common adverse effects? What if the patient had a history of asthma?
SS_OB 1.27	Evaluate methods to treat hypotension associated with neuraxial blockade for caesarean birth	You have performed a spinal for an elective Caesarean Section. After transferring the woman to the operating table the NIBP is 70/28, the patient is bradycardic and starts to retch. How would you manage this this situation?

SS_OB 1.28	Discuss the management of significant complications of neuraxial analgesia and anaesthesia in childbirth, for example: • Post-dural puncture headache • Total spinal	How do you do an epidural blood patch?
		What is the differential diagnosis of headache in a patient who has received an epidural during labour? How would you make your diagnosis? How would you manage a post-dural puncture headache?
SS_OB 1.29	Discuss the management of suboptimal block including conversion to general anaesthesia for caesarean birth	Shortly after starting an elective Caesarean Section under regional anaesthesia the patient complains of pain. What is your approach to managing this situation?
SS_OB 1.34	Discuss the anaesthetic management of problems that may arise with labour and delivery, including the following situations: • Vaginal birth after caesarean (VBAC) • Uterine rupture • Multiple gestation • Breech • Assisted vaginal birth • Premature labour • Cord prolapse • Abnormal placental implantation • Antepartum haemorrhage • Post partum haemorrhage • Shoulder dystocia • Foetal death in utero	What is your management of an urgent antepartum haemorrhage?
		Outline the differences if any with your management of CS for a twin pregnancy of a singleton pregnancy.
SS_OB 1.35	Discuss the pathophysiology and anaesthetic management of the	You have a primip with HELLP syndrome and severe pre-eclampsia who requires urgent CS for foetal distress. What is HELLP syndrome? How would you determine whether you

	following medical conditions particular to pregnancy: • Hypertensive disorders of pregnancy/preeclampsia • HELLP syndrome • Eclampsia • Peripartum cardiomyopathy • Gestational diabetes • Acute fatty liver of pregnancy • Cholestasis associated with pregnancy • Rhesus iso immunisation	proceed under a regional or GA? Outline your approach if giving a GA - when would you site an arterial line? What precise drugs in what dose would you use to obtund the pressor response to intubation? How does a magnesium infusion alter your anaesthetic management? A woman with HELLP syndrome and severe pre-eclampsia requires urgent Caesarean Section for foetal distress. What is HELLP syndrome? How would you determine whether you proceed under a regional or General Anaesthesia? Outline your approach to management of this patient.
SS_OB 1.36	Discuss the pathophysiology and anaesthetic management of co-existing maternal conditions as described in the *Perioperative medicine Clinical Fundamental*, in particular: • Morbid obesity • Cardiac disease • Substance abuse • Psychiatric conditions	How you would manage the airway for a morbidly obese parturient undergoing LSCS under GA. What are the likely problems you will encounter in airway and ventilatory management for a morbidly obese patient? What are the airway issues in a morbidly obese parturient undergoing a Caesarean Section under General Anaesthesia? What are the likely problems you will encounter in airway and ventilatory management for a morbidly obese patient?
SS_OB 1.40	Discuss the diagnosis and management of maternal collapse, including: • Thromboembolism • Amniotic fluid embolism • Air embolism • Anaphylaxis • Local anaesthetic toxicity (refer to the endorsed AAGBI Safety Guideline *Management of*	A few minutes after siting an epidural for labour analgesia in a healthy primip she collapses. What is your differential and initial management of this situation? You are managing a woman undergoing elective CS under regional anaesthesia and the baby has been delivered. She is complaining of epigastric pain and shortness of breath. Tell me of your approach to this scenario. What factors would lead you to converting to a GA? You have done a spinal for an elective CS and a Phenylephrine infusion is in progress. After transferring the woman to the

	Severe Local Anaesthetic Toxicity) • High spinal • Massive haemorrhage • Eclampsia	operating table the NIBP is 70/28, the patient is bradycardic and starts to retch. Outline your management to this situation. Shortly after inserting an epidural in the sitting position for analgesia in labour, the patient collapses. What is your approach to this clinical situation?
SS_OB 1.44	Discuss the unique aspects of management of anaesthesia for the pregnant woman having non-obstetric surgery	What are the issues involved in giving an anaesthetic to a woman who is 34 weeks pregnant and has appendicitis?
Ophthalmic Procedures		
SS_OP 1.4	Discuss the selection of local anaesthetic solutions for regional and topical eye blocks	What local anaesthetic solution do you use for performing your eye blocks and why?
SS_OP 1.8	Discuss the surgical requirements and implications for anaesthetic management of patients having surgery for: • Cataracts • Glaucoma • Retinal detachment • Penetrating eye injury • Enucleation for infection or tumour • Examination under anaesthesia • Strabismus • Blocked nasolacrimal duct • Extraocular procedures (also refer to the *Plastics, reconstructive and burns surgery* specialised study unit)	What are the anaesthetic issues with regard to strabismus surgery and how are these managed?

SS_OP 1.9	Discuss the specific anaesthetic requirements for emergency eye surgery and in particular the patient with a penetrating eye injury	What are the anaesthetic issues with regard to penetrating eye injury?
SS_OP 1.11	Describe and compare regional blocks used for eye procedures, their possible complications and management including: • Subtenon block • Peri-bulbar block • Retrobulbar block	What are the relative risks and benefits of peribulbar versus subtenon anaesthesia for eye surgery? What is the incidence of globe perforation with peribulbar and sub-tenon techniques and how may the risk be minimised? What are the features of brainstem anaesthesia and how are they managed?
SS_OP 1.12	Describe the methods used to decrease or prevent a rise in intra-ocular pressure following a peri-bulbar block	What methods do you know of to reduce intraocular pressure as part of an eye block? What are the risks involved?
SS_OP 1.13	Discuss how patient factors and co-morbid conditions influence choice of anaesthesia for eye surgery in particular: • Anticoagulation status • Ability to lie flat • Ability to cooperate • Axial length of the globe	In the pre-operative assessment for a patient undergoing eye surgery under local anaesthesia, what are the important issues?
SS_OP 1.15	Describe sedation techniques for eye procedures	What is your method of sedation for eye procedures? What are the risks involved?
SS_OP 1.17	Describe the patient and staff precautions required when using laser during eye surgery (also refer to the *Safety and quality in anaesthetic practice* clinical fundamental)	What are the patient and staff issues involved when performing laser procedures in eye surgery?

Orthopaedic Surgery		
SS_OR1.1/1.3	1.1: Describe the rationale for and outline initial methods of fracture immobilisation and analgesia in patients awaiting definitive surgery for major trauma, including: • Pelvic fractures • Long bone fractures • Spinal fractures 1.3: Discuss the management of patients requiring anaesthesia for: • Pelvic fractures • Shoulder girdle fractures • Long bone fractures • Distal limb fractures • Reduction and fixation of spinal fractures	What would be your initial management of a patient with a pelvic fracture? What are the anaesthetic and pain management issues for this patient undergoing surgery?
SS_OR1.4	In the trauma patient undergoing orthopaedic surgery, discuss the management of the following potential complications: • Cemented implant syndrome • Haemorrhage • Massive transfusion • Crush injury • Compartment syndrome • Re-perfusion injury • Fat embolism syndrome	What are the pathophysiological changes you would expect with crush injuries and how would you manage these patients? How would you diagnose and manage compartment syndrome?

SS_OR1.7	Discuss the assessment and anaesthetic management of the elderly patient with a hip fracture	What are the key issues to consider during the pre-operative assessments of elderly patients presenting for hip fracture surgery? How will these affect your anaesthesia and pain management plans?
SS_OR1.8	Describe the indicators of non-accidental injury and outline an appropriate course of action when non-accidental injury is suspected	What are the indicators of non-accidental injury and what is the appropriate course of action when non-accidental injury is suspected?
SS_OR1.9/1.16	1.9: Evaluate the selection and use of thrombo-prophylaxis and antibiotic prophylaxis in orthopaedic trauma surgery 1.16: Discuss the choice and timing of antibiotic prophylaxis for orthopaedic patients	What is the appropriate antimicrobial prophylaxis for patients undergoing elective orthopaedic surgery? How does this differ in the trauma setting?
SS_OR1.12	Outline the common comorbidities associated with scoliosis and the anaesthetic management of patients having scoliosis correction surgery	What are the common comorbidities associated with scoliosis? What are the anaesthetic and pain management issues for patients undergoing scoliosis correction surgery?
SS_OR1.15	Discuss the safe use of tourniquets for orthopaedic procedures (also refer to the *Safety and quality in anaesthetic practice* clinical fundamental)	What are safe inflation pressures and durations for tourniquets used in orthopaedic surgery? What are the complications associated with tourniquet use?
SS_OR1.17/1.18	1.17: Discuss the use of thrombo-prophylaxis for orthopaedic patients especially joint replacement (also refer to the *Safety and quality in anaesthetic practice* clinical fundamental)	What factors influence the use and choice of thromboprophylaxis for patients undergoing orthopaedic surgery? What would be appropriate management for a patient undergoing hip joint replacement surgery, and why? What would be your plan if the patient was taking an anticoagulant pre-operatively?

	1.18: Discuss the perioperative management of patients on therapeutic anticoagulation requiring anaesthesia for orthopaedic procedures (also refer to the *Perioperative medicine* clinical fundamental)	
SS_OR1.19	Evaluate methods to reduce intra-operative and postoperative blood loss and minimise the need for blood transfusion during or following orthopaedic procedures	What methods are used to reduce intra-operative and post-operative blood loss in orthopaedic surgery in order to minimise the need for blood transfusion?
SS_OR1.22	Discuss the implications of the use of the beach-chair position for shoulder surgery	What are the implications of the beach-chair position for shoulder surgery? How will these affect your anaesthetic plan?
SS_OR1.23	Discuss the implications of patients presenting with arthritis (osteoarthritis, rheumatoid arthritis or ankylosing spondylitis) (also refer to the *Perioperative medicine* clinical fundamental)	What factors would influence your anaesthetic plan for a patient presenting for orthopaedic surgery who has rheumatoid arthritis? What if the patient had ankylosing spondylitis?
SS_OR1.24	Discuss implications of morbidly obese patients presenting for major orthopaedic surgery. For example: • Airway management • Risk of postoperative pulmonary complications • Monitoring • Intravenous access • Regional anaesthesia/analgesia • Systemic analgesia • Early mobilisation	How does morbid obesity affect the perioperative management of patients undergoing major joint replacement surgery?

Paediatric anaesthesia		
SS_PA 1.2	Describe airway and ventilatory equipment specific for paediatric patients, including: • Estimation of ETT size based on age • Accurate placement of ETT including fixation techniques • Issues relating to use of cuffed tubes in paediatrics • Breathing circuits	What are the advantages and disadvantages of using the paediatric circle system and the Jackson-Rees modification of Ayre's T-piece (Mapleson F) for anaesthesia in a 15 kg child?
SS_PA 1.8	Discuss the clinical features, possible causes, and management of perioperative upper airway obstruction including laryngospasm	What is your plan to manage laryngospasm at induction?
SS_PA 1.20	Formulate a plan for acute pain management that shows integrated knowledge of the interaction of analgesic agents, patient factors and the aetiology of pain	How would you prescribe a PCA for a 30kg 9 year old after laparotomy? What adjuvants could you use?
SS_PA 1.30	Discuss the clinical features and implications for anaesthetic care of the following medical conditions: • Prematurity and the problems of ex-premature infants • Asthma • Sleep apnoea • Cystic fibrosis	What are the important features of cerebral palsy relevant to planning anaesthesia for a 7-year-old nonverbal girl with severe spastic cerebral palsy who is scheduled for cystoscopy? What are the key issues in anaesthetising an 8 yo with Down's syndrome for adenotonsillectomy? How do you modify your perioperative management for children with autism?

	• Quinsy • Croup • Epiglottitis • Down syndrome • Cerebral palsy • Autism • Obesity • Diabetes	How do you stratify postoperative monitoring for children with obstructive sleep apnoea after adenotonsillectomy?
SS_PA 1.33	Describe the assessment and management of a child with URTI or other intercurrent medical illness in the preoperative period	How do you decide if a 2 year old infant with recurrent RTI who is booked for hydrocoele repair needs to be postponed?
SS_PA 1.34	Describe the assessment and management of a child with an undiagnosed murmur detected in the preoperative assessment	If you found a previously undiagnosed praecordial murmur during your assessment of a two-year-old boy for hypospadias repair, how would you justify your decision to proceed?
SS_PA 1.38	Describe a fluid resuscitation regimen for acute blood loss appropriate for children	How would you manage an unanticipated 600ml blood loss during tonsillectomy?
SS_PA 1.50	Describe methods to minimise the anxiety of children and their parents during induction of anaesthesia	Can you describe some of the communication strategies you use to optimise induction of anaesthesia in children?
SS_PA 1.54	Describe the pharmacology of agents used for premedication in children, including midazolam, clonidine and ketamine	When is premedication required in children, and what are the pros and cons of the available options?

SS_PA 1.56	Discuss the use of TIVA and target controlled infusions in children	How can you use TIVA and target controlled infusions in children and what potential issues are there?
SS_PA 1.61	Discuss the prevention and management of postoperative delirium	How can you minimise and manage post-operative delirium in children?
SS_PA 1.70	Discuss the anaesthetic management of children requiring more complex shared airway procedures, for example, cleft lip and palate, laryngoscopy, oesophagoscopy, removal of airway foreign body	How do you anaesthetise a 2 year old child for an inhaled foreign body?
SS_PA 1.76	Discuss the anaesthetic management of infants having pyloromyotomy	How would you assess the hydration status of a six-week-old term baby weighing 4.0 kg who requires pyloromyotomy for pyloric stenosis? What is the best way to resuscitate him?
SS_PA 1.77, SS_PA 1.94	1.77: Discuss the anaesthetic management of neonatal hernia repair 1.94: Describe the ANZCA requirements for non-specialist paediatric hospitals providing paediatric anaesthesia and the principles to be considered in formulating protocols and making decisions regarding the transfer of a child to a tertiary centre (refer to College professional document: *PS29 Statement on Anaesthesia Care of Children in Healthcare Facilities Without Dedicated Paediatric Facilities*	If you were going to anaesthetise an 8 week old baby for an inguinal hernia repair, what are the important issues to manage in your anaesthetic plan and how would you decide if the case could be done at your general hospital?

SS_PA 1.78	Outline the principles of anaesthetic management of neonates and infants requiring major surgery, for example, necrotising enterocolitis	What are the key issues in anaesthetising a neonate for a major procedure such as gastroschisis repair?
SS_PA 1.97	Discuss the safety precautions and equipment requirements when providing anaesthesia and sedation in the MRI suite (also refer to the *Safety and quality in anaesthetic practice* clinical fundamental and to College professional document: *PS55 Recommendations on Minimum Facilities for Safe Administration of Anaesthesia in Operating Suites and Other Anaesthetising Locations*)	What particular issues does anaesthesia for MRI pose?
Thoracic Surgery		
SS_TS 1.2/1.7	1.2: Describe the changes in lung physiology and the implications for anaesthesia management which occur with: • Lateral decubitus positioning • Open thorax • One lung ventilation 1.7: Describe the techniques used to position patients for thoracic surgery and to minimise risk of postoperative position-related injury	What are the risks associated with positioning for thoracic surgery and how do you mitigate them?

SS_TS 1.4	Discuss the pathophysiology of pulmonary hypertension and methods available to the anaesthetist to manipulate pulmonary vascular resistance and pulmonary artery pressures	What are the pathophysiological changes associated with pulmonary hypertension and what can you do to manipulate pulmonary pressures and vascular resistance?
SS_TS 1.6/1.13	1.6: Discuss the assessment of patients with mediastinal masses for surgical procedures including the assessment of severity of vascular and respiratory obstruction and the implications for anaesthesia management. 1.13: Discuss the anaesthetic management of the following procedures: • Surgery for mediastinal mass • Thymectomy, particularly the perioperative management of myasthenia gravis (also refer to the *Perioperative medicine* clinical fundamental) • Mediastinoscopy • Thoracoscopy and thoracotomy for: o Pleurodesis o Bleeding o Bronchopleural fistula	What are the issues relevant to the management of a patient with an anterior mediastinal mass?

SS_TS 1.8	Describe the indications and contraindications for one-lung ventilation	What are the indications and contraindications of one-lung ventilation?
SS_TS 1.9	Describe the different methods available to perform lung isolation including the use of double-lumen tubes, bronchial blockers, single lumen tubes and Univent tubes and the rationale for selecting different methods in different situations (refer to the *Paediatric anaesthesia* specialised study unit for issues specifically pertaining to paediatric patients)	What methods are available for lung isolation for thoracic surgery and what are the pros and cons of each method? What types of bronchial blockers do you know and how would you insert them? How would you manage lung isolation in a patient who has been a difficult or failed intubation in the past?
SS_TS 1.11	Discuss the management of hypoxaemia during one-lung ventilation	How would you manage hypoxaemia during one-lung ventilation?
SS_TS 1.12	Discuss the anaesthetic management of the following endobronchial procedures: • Flexible bronchoscopy • Diagnostic bronchoscopy • Bronchoalveolar lavage • Bronchoscopic ultrasound and biopsy • Placement of endobronchial stent • Rigid bronchoscopy • Spontaneous versus jet ventilation • Removal of foreign body in airway • Laser of endobronchial tumour	How would you anaesthetise a patient undergoing surgery for a bronchoscopy? Or laser of an endobronchial tumour?

SS_TS 1.14	Outline the anaesthetic management of the following procedures: • Lobectomy • Pneumonectomy • Drainage of lung abscess • Drainage of empyema and decortication of lung • Lung volume reduction surgery • Giant bullous emphysema resection • Thoracoscopic sympathectomy (also refer to the *Vascular surgery and interventional radiology* specialised study unit)	What are the issues associated with one-lung ventilation and how can you manage them?
SS_TS 1.15	Identify pain management issues specific to thoracic surgery and critically evaluate analgesic options for patients having thoracic surgery	What are the analgesia management options for patients undergoing a thoracotomy? How would you manage post-thoracotomy pain?
SS_TS 1.17	Discuss the management of chest drains and pleural drainage systems in the postoperative period	What are the key features of a chest drain and pleural drainage system? What are the complications?
SS_TS 1.18	Compare the anaesthetic management of thoracoscopic and open approaches for thoracic surgery	How does your anaesthetic plan differ for thoracoscopic versus open approaches to thoracic surgery?

SS_TS 1.19	Outline the specific issues for perioperative management of patients for pneumonectomy	What are the specific issues associated with pneumonectomy in the perioperative period?
SS_TS 1.21	Outline the management of the following postoperative complications associated with thoracic surgery: • Bleeding (airway, lung or pleural cavity) • Pneumothorax • Arrhythmias • Bronchopleural fistulae • Nerve damage • Pulmonary torsion • Cardiac herniation	What are the complications associated with major thoracic surgery and how would you recognise and manage them?
SS_TS 1.22	Discuss the diagnosis and management of: • Pneumothorax/tension pneumothorax • Haemothorax • Flail chest • Rib/sternal fractures • Pulmonary contusion • Traumatic aortic disruption • Tracheobronchial injury, bronchopleural fistula In particular: • Evaluate methods of analgesia for rib/sternal fractures • Outline indications for thoracotomy in the management of chest trauma	How would you diagnose and manage a patient with a: pneumothorax; tracheobronchial injury; flail chest; pulmonary contusion?

SS_TS 2.1/2.2	2.1: Assess the patient presenting for thoracic surgery including: • Determination of functional status • Indications for arterial blood gas analysis, lung function testing, chest CT and MRI • Identifying patients requiring further investigation and optimisation (Also refer to the *Perioperative medicine* clinical fundamental) 2.2: Assess perioperative risk prior to lobectomy and pneumonectomy on a specific patient including the assessment of: • Respiratory mechanics • Cardiopulmonary reserve • Lung parenchymal function • Methods for prediction of postoperative lung function	How would you assess a patient undergoing surgery for lung cancer e.g. for lobectomy or pneumonectomy?
SS_TS 2.4	Select the correct size and side of double lumen ETT and place it to provide lung isolation for a patient, including the use of clinical and endoscopic methods to confirm tube placement	What are the indications and contraindications of a double lumen tube (DLT)? How do select the correct size of DLT to use? How do you insert the DLT and verify that it is correctly positioned? What are the complications associated with DLTs?

Vascular Surgery and Interventional Radiology		
SS_VS 1.1/1.2	1.1: Outline the pathophysiology of peripheral vascular disease including common co-morbidities 1.2: Discuss the perioperative management of the following co-morbidities in the patient presenting for vascular surgery including perioperative risk assessment and risk reduction (also refer to the *Perioperative medicine* clinical fundamental): • Ischaemic heart disease • Cardiac failure • Arrhythmia • Hypertension • Diabetes mellitus • Chronic obstructive airways disease • Renal failure	What common comorbidities might you expect to see in a patient presenting for vascular surgery, and how might these impact on your peri-operative management of such a patient? What interventions could you use to mitigate against the impact of those comorbidities? How would these help? Why might they fail?
SS_VS 1.3	Describe the impact of vascular disease on: • Wound dehiscence and infection • Positioning injury • Perioperative myocardial ischaemia • Perioperative stroke • Perioperative renal failure	A patient with peripheral vascular disease wants to know what impact his disease has on his perioperative course following major surgery. How would you respond?

SS_VS 1.4	Discuss the surgical requirements and implications for anaesthetic management of patients having elective surgery for: • Peripheral arterial occlusive disease • Carotid artery stenosis • Aortic and aorto-iliac disease • Vascular access for haemodialysis • Thorascopic sympathectomy	What are the indications for a thoracoscopic sympathectomy, and what would be your anaesthetic and pain management plans? What are your anaesthetic goals for a patient undergoing an elective open repair of an AAA and how might you achieve them? What changes would you make if the surgeon performed an endoluminal procedure instead of an open one?
SS_VS 1.4/1.6	1.6: Evaluate the risks and benefits of regional anaesthesia and analgesia in vascular surgery	What would be your preferred anaesthetic technique for the formation of an arteriovenous fistula in a patient with end stage renal failure? What are the benefits and risks of your chosen technique?
SS_VS 1.4/1.19	1.9: Outline the advantages and disadvantages of interventional radiological procedures as compared with open procedures for management of: • Aortic aneurysm • Aortic dissection • Carotid artery stenosis	What are the issues and potential complications related to an endoluminal AAA repair and how would you manage them?
SS_VS 1.7	Discuss the perioperative management, including postoperative analgesia and perioperative fluid management of patients having an emergency vascular procedure for the following: • Ruptured aortic aneurysm • Aortic dissection • Major vessel occlusion • Limb ischaemia • Limb amputation • Arterial laceration	What are your anaesthetic goals for a patient undergoing revascularisation of an occluded popliteal artery, and how can you achieve these? What are the important issues related to the management of a patient requiring an amputation of a limb due to chronic ischaemia? What are your options for anaesthesia?

SS_VS 1.8	Discuss methods to minimise blood loss and transfusion requirements in aortic surgery	What strategies do you have for minimising transfusion requirements in a patient who is booked to have an elective open AAA repair?
SS_VS 1.9	Describe the pathophysiology and implications for anaesthesia management of: • Aortic cross clamping and unclamping at various levels • Prolonged limb or gut ischaemia • Carotid clamping and unclamping	What is your strategy for managing an aortic cross clamp at the following levels – infrarenal; suprarenal; thoracic? What are the implications of cross-clamping at these levels?
SS_VS 1.11	Discuss strategies for spinal cord protection in aortic surgery	What strategies can you use for spinal cord protection in aortic surgery?
SS_VS 1.13	Outline recovery room complications specifically associated with carotid endarterectomy and discuss their management	What recovery room complications might you expect to manage in a patient who has undergone a carotid endarterectomy and why might these occur? How would you manage them?
SS_VS 1.14/1.15	1.14: Discuss techniques used to monitor cerebral perfusion during carotid endarterectomy 1.15: Describe a technique for performing carotid endarterectomy under regional anaesthesia and evaluate the role of regional anaesthesia for carotid endarterectomy	What monitoring do you think is necessary for carotid artery surgery and why? Do the surgical and anaesthetic techniques make a difference?

SS_VS 1.16	Outline the implications for patient safety of the location of the interventional radiology service	What are the implications for patient safety when undertaking procedures in the interventional radiology suite?
SS_VS 1.17	Discuss the procedural requirements and implications for anaesthetic management of patients having interventional radiological procedures including: • Vascular embolisation • Vascular stenting • Insertion of intravascular devices including aortic grafts • Radiological-guided biopsy under anaesthesia	What are the procedural requirements and anaesthetic management goals for patients undergoing vascular stenting or embolisation?
SS_VS 1.18	Discuss the diagnosis and management of complications associated with interventional radiological procedures including (also refer to the *Resuscitation, trauma and crisis management* clinical fundamental and to College professional document: *PS55 Recommendations on Minimum Facilities for Safe Administration of Anaesthesia in Operating Suites and Other Anaesthetising Locations*): • Reaction to intravenous contrast • Aortic occlusion • Acute renal impairment • Spinal cord ischaemia • High radiation dose • Haemorrhage	What potential complications may occur during an interventional radiological procedure in the angiography suite and how would you manage these?

SS_VS 1.19	Outline the advantages and disadvantages of interventional radiological procedures as compared with open procedures for management of: • Aortic aneurysm • Aortic dissection • Carotid artery stenosis	What are the advantages and disadvantages of endoluminal aortic procedures vs. open procedures? Which patients are more suited to an endoluminal procedure?