







Joint Committee on Intercollegiate Examinations

# Syllabus – Cardiothoracic Surgery

### April 2015

The Joint Surgical Colleges Fellowship Examination (JSCFE) syllabus defines the breadth and depth of knowledge, professionalism and clinical skills to be attained by surgeons in training. It defines the standards of competence expected on completion of a training programme. The JSCFE adopts this standard as the one against which assessment will be made. The examination will assess various elements of applied knowledge, diagnostic skills, clinical judgment and professionalism.

#### **Clinical Management**

The examination is set at the level of knowledge and standard required of a recognised specialist (day one NHS UK/Ireland consultant standard) in the generality of the specialty. Given the range of cases, the spectrum of complexity and the ability to deal with variations and complications within the practice of this specialty, a candidate should be able to demonstrate that their training / experience is such that they can safely manage both common and more complex clinical problems.

#### **Operative Skills**

While the examination does not formally assess technical operating ability, the JSCFE considers it inappropriate to admit candidates to the examination if there is any doubt as to their technical skills.

#### **Professionalism and Probity**

The development of a mature and professional approach in clinical practice is essential for safe and successful patient care. Attitudes towards patients and colleagues, work ethic, ability to deal with stressful issues and the effectiveness of communication skills in providing supportive care for patients and their families are the professional qualities expected of successful candidates in this examination.

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#### Introduction

The Intercollegiate Surgical Curriculum Programme (ISCP) provides the framework for systematic training from completion of the foundation years through to consultant level in the UK & Ireland. It achieves this through a syllabus that lays down the standards of specialty-based knowledge, clinical judgment, technical and operative skills, and professional skills and behaviour, which must be acquired at each stage in order to progress. The curriculum is web based and is accessed through <u>www.iscp.ac.uk</u>. The website contains the most up to date version of the curriculum and each of the ten surgical specialty syllabuses. The 10 specialities include General Surgery, Vascular surgery, Urology, Paediatric surgery, Cardiothoracic Surgery, Trauma and Orthopaedic surgery, Oral and Maxillofacial surgery (OMFS), Plastic surgery, Neurosurgery and Otolaryngology (ENT). They all share many aspects of the early years of surgical training in common, but naturally become increasingly singular as training in each discipline becomes more advanced. Each syllabus will emphasise the commonalities and elucidate in detail the requirements for training in the different specialities.

This syllabus is designed for candidates who have declared Cardiothoracic Surgery as their specialty interest. The standard expected is that of a newly appointed (Day 1) Consultant in UK / Ireland cardiothoracic practice.

Prior to sitting this examination it will be expected that the candidate will have gained competence in a wide range of knowledge and skills including the basic sciences which are common to all surgical specialities. These topics are defined in the syllabus for the MRCS examination (<u>http://www.intercollegiatemrcs.org.uk/new/guide\_html</u>). This must be supplemented by the topics from the cardiothoracic specialty syllabus as outlined below.

#### **Eligibility Criteria**

Candidates would normally have passed the MRCS examination of one of the four Surgical Royal Colleges.

Alternatively, candidates would have successfully completed a locally registered *and higher* surgical training programme.

It is expected that candidates will produce documentary evidence of having completed a minimum of four years surgical training following award of MRCS or equivalent.

The final decision on eligibility for admission to the examination will lie with the JSCFE Specialty Board.

Surgeons applying for this examination would be expected to demonstrate:

- Theoretical and practical knowledge related to surgery in general and to their specialty practice;
- Technical and operative skills;
- Clinical skills and judgment;
- Generic professional and leadership skills;
- An understanding of the values that underpin the profession of surgery and the responsibilities that come with being a member of the profession;
- The special attributes needed to be a surgeon;
- A commitment to their ongoing personal and professional development and practice using reflective practice and other educational processes;
- An understanding and respect for the multi-professional nature of healthcare and their role within it.

The syllabus is modular in format, with content that covers the major areas of highly specialised practice that are relevant to cardiothoracic surgery. Each syllabus is intended to allow the successful candidate to develop an area of clinical interest and expertise upon appointment to a consultant post. Some will require further training in order to achieve the competences necessary for some of the rarer complex procedures.

## Syllabus Structure

The syllabus lays down the standards of specialty-based knowledge, clinical judgment, technical and operative skills, and professional skills and behaviour that must be acquired prior to sitting the examination. The syllabus comprises the following components:

- The scope and practice of cardiothoracic surgery
- The key topics with which a candidate will need to be familiar
- Standards for depth of knowledge
- Standards for clinical and technical skills
- The topic overview setting out in more detail the requirements

The Professional Behaviour and Leadership Skills syllabus is mapped to the Leadership framework as laid out by the Academy of Medical Royal Colleges and the Framework for Appraisal and Assessment derived from Good Medical Practice. The Professional Behaviour and Leadership skills section of the syllabus is common to all surgical specialties and is based on Good Medical Practice

- Leadership Framework <u>http://aomrc.org.uk/publications/statements/doc\_download/132-medical-leadership-competency-framework.html</u>
- Appraisal Framework <u>http://www.gmc-</u> uk.org/static/documents/content/GMP\_framework\_for\_appraisal\_and\_revalidation.pdf\_41326960.pdf

#### The Scope and Practice of Cardiothoracic Surgery

The areas of practice in cardiothoracic surgery are:

- Critical care and postoperative management
- Cardiopulmonary bypass
- Myocardial protection
- Circulatory support
- Ischaemic heart disease
- Heart valve disease
- Aortovascular disease
- Cardiothoracic trauma
- General management of a patient undergoing thoracic surgery
- Neoplasms of the lung
- Disorders of the pleura
- Disorders of the chest wall
- Disorders of the diaphragm
- Emphysema and bullae
- Disorders of the pericardium
- Disorders of the mediastinum
- Disorders of the airway
- Congenital heart disease
- Intrathoracic transplantation and surgery for heart failure
- Management of benign oesophageal disease
- Management of oesophageal neoplasia

## Key Topics

## <u>Candidates sitting this examination would be expected to be competent in the management of the conditions outlined below. This represents the minimum standard that would be expected.</u>

- 1. Critical Care and Postoperative Management
  - The management of critically ill cardiothoracic surgical patients in the pre and post operative periods
- 2. Cardiopulmonary Bypass, Myocardial Protection and Circulatory Support
  - The management of a patient undergoing cardiopulmonary bypass
  - $\circ$   $\;$  The management of myocardial protection during cardiac surgery  $\;$
  - o The management of a patient requiring circulatory support
- 3. Ischaemic Heart Disease
  - The assessment and management of patients with coronary heart disease, including elective and emergency presentations. To include competence in both primary and secondary procedures, and where appropriate to include off-pump and on-pump strategies and arterial revascularisation
  - The preliminary assessment and initial management of patients with complications of myocardial infarction, including mitral regurgitation, ventricular aneurysm and septal defects. To include operative management in appropriate situations
- 4. Heart Valve Disease
  - The assessment and management of patients with valvular heart disease; including both isolated and combined aortic and mitral valve disease
  - The assessment and management of patients with combined coronary and valvular heart disease, including operative management
- 5. Aortovascular Disease
  - The preliminary assessment and initial management of patients with acute dissection of the ascending aorta. To include operative management in appropriate situations
- 6. Cardiothoracic Trauma
  - The assessment and management of patients with minor and major cardiothoracic trauma. To include operative management in appropriate situations
- 7. General Management of a Patient Undergoing Thoracic Surgery
  - Patient selection and determination of suitability for major thoracic surgery and the pre and post operative management of a thoracic surgical patient
  - o The assessment and management of a patient by bronchoscopy including foreign body retrieval
  - The assessment and management of a patient by mediastinal exploration
  - Competence in performing appropriate thoracic incisions
- 8. Neoplasms of the Lung
  - The assessment and management of lung cancer, including the scientific basis of staging systems and techniques used in the determination of stage and fitness for surgery
  - An understanding of the role of surgical treatment in the multidisciplinary management of lung cancer and other intrathoracic malignant diseases, including an appreciation of the principles of other treatment modalities and their outcomes
- 9. Disorders of the Pleura
  - The assessment and management of patients with pleural disease; including pneumothorax and empyema, and including both VATS and open strategies

- 10. Disorders of the Chest Wall
  - The assessment and management of patients with chest wall abnormalities, infections and tumours
- 11. Disorders of the Diaphragm
  - $\circ$  The assessment and management of patients with disorders of the diaphragm, including trauma to the diaphragm
- 12. Emphysema and Bullae
  - The assessment and management of patients with emphysematous and bullous lung disease; including surgical management if appropriate and utilising both VATS and open strategies
- 13. Disorders of the Pericardium
  - The assessment and management of patients with disorders of the pericardium and pericardial cavity; including surgical management if appropriate and utilising both VATS and open strategies
- 14. Disorders of the Mediastinum
  - The assessment and management of patients with mediastinal tumours and masses; including surgical management if appropriate and utilising both VATS and open strategies
- 15. Disorders of the Airway
  - The assessment and management of patients with disorders of the major airways. Including operative management in suitable cases
- 16. Congenital Heart Disease
- 17. Intrathoracic Transplantation and Surgery for Heart Failure
- 18. Management of Benign Oesophageal Disease
- 19. Management of Oesophageal Neoplasia

### Standards for Depth of Knowledge

The following methodology is used to define the relevant depth of knowledge required of the candidate. Each topic has a competence level ascribed to it for knowledge ranging from 1 to 4:

- 1. knows of
- 2. knows basic concepts
- 3. knows generally
- 4. knows specifically and broadly

#### **Standards for Clinical and Technical Skills**

The practical application of knowledge is evidenced through clinical and technical skills. Each topic has a competence level ascribed to it in the areas of clinical and technical skills ranging from 1 to 4:

1. has observed

At this level the candidate:

- Has adequate knowledge of the steps through direct observation.
- Demonstrates that he/she can handle instruments relevant to the procedure appropriately and safely.
- Can perform some parts of the procedure with reasonable fluency.
- 2. can do with assistance

At this level the candidate:

- Knows all the steps and the reasons that lie behind the methodology.
- Can carry out a straightforward procedure fluently from start to finish.
- Knows and demonstrates when to call for assistance/advice from the supervisor (knows personal limitations).
- 3. can do whole but may need assistance

At this level the candidate:

- Can adapt to well-known variations in the procedure encountered, without direct input from the trainer.
- Recognises and makes a correct assessment of common problems that are encountered.
- Is able to deal with most of the common problems.
- Knows and demonstrates when he/she needs help.
- Requires advice rather than help that requires the trainer to scrub.
- 4. competent to do without assistance, including complications

At this level the candidate:

- With regard to the common clinical situations in the specialty, can deal with straightforward and difficult cases to a satisfactory level and without the requirement for external input.
- The level at which one would expect a UK/Ireland consultant surgeon to function.
- Is capable of supervising trainees.

# **Topic Overview**

Торіс	Critical Care and Post-operative Management	Competence Level
Objective	To manage a post surgical patient on the critical care, high dependency and post operative wards. To work as part of a multiprofessional, multidisciplinary team in the management of a patient requiring complex critical care	
	BASIC KNOWLEDGE Physiology	
	Haemodynamics: physiology and measurement	4
	Cardiac arrhythmia	4
	Haemostasis, thrombosis and bleeding	4
	Acid base balance	4
	Pulmonary physiology, ventilation and gas exchange	4
	Metabolic response to trauma and surgery	4
	GIT, renal and hepatic physiology	4
	Nutrition	4
	Temperature regulation	4
	Anatomy	
Knowledge	Heart, pericardium and great vessels	4
	Mediastinum, thoracic inlet and neck	4
	Tracheobronchial tree and lungs	4
	Chest wall and diaphragm	4
	Pathology	
	Inflammation and wound healing	4
	Myocardial infarction and complications	4
	Endocarditis	4
	Pericarditis	4
	Systemic inflammatory response syndrome	4
	Bronchopulmonary infection	4
	ARDS	4
	Pharmacology	
	Drugs used in the treatment of hypertension,	4

	heart failure and angina Inotropes, vasodilators and vasoconstrictors	4
	Anti-arrhythmic drugs	4
	Haemostatic drugs	4
	Antiplatelet, anticoagulant and thrombolytic drugs	4
	Analgesics	4
	Antibiotics	4
	Anaesthetic agents, local and general	4
	Microbiology	4
	Organisms involved in cardiorespiratory infection	4
	Antimicrobial treatment and policies	4
	CLINICAL KNOWLEDGE	
	Cardiopulmonary resuscitation	4
	Management of cardiac surgical patient	4
	Management of thoracic surgical patient	4
	Treatment of cardiac arrhythmia	4
	Management of complications of surgery	4
	Blood transfusion and blood products	4
	Wound infection and sternal disruption	4
	Neuropsychological consequences of surgery and critical care	
	HISTORY AND EXAMINATION	
	History and examination of the post-operative and critically ill patient	4
	DATA INTERPRETATION	
	Analysis and interpretation of post operative and critical care charts and documentation	4
	Routine haematology and biochemical investigations	4
	Chest radiograph and ECG	4
	Echocardiography including TOE	3
	PATIENT MANAGEMENT	
Clinical Skills	General management of surgical patient	4

Management of fluid balance and circulating volume	
Pain control	4
Wound management	4
Management of surgical drains	4
Antimicrobial policy and prescribing	4
Management of post-operative haemorrhage	4
Cardiopulmonary resuscitation (ALS)	4
Management of complications of surgery	4
Blood transfusion and blood products	4
Wound infection and sternal disruption	4
Recognition, evaluation and treatment of haemodynamic abnormalities	
Evaluation and interpretation of haemodynamic data Practical use of inotropes and vasoactive drugs	4
Use of intra aortic balloon pump	4
Recognition, evaluation and treatment of cardiac arrhythmias	
Interpretation of ECG	4
Use of anti-arrhythmic drugs	4
Use of defibrillator	4
Understanding and use of cardiac pacing	4
Recognition, evaluation and treatment of ventilatory abnormalities	
Interpretation of blood gas results	4
Airway management	4
Understanding of ventilatory techniques and methods	3
Understanding of anaesthetic drugs and methods	3
Recognition, evaluation and treatment of multiorgan dysfunction	2
Renal dysfunction and support	3
GIT dysfunction, feeding and nutrition	3
	5

	Recognition and evaluation of cerebral and neuropsychological problems	
	PRACTICAL SKILLS	
	Arterial cannulation	4
	Central venous cannulation	4
	IABP insertion	4
	IABP timing and management	4
	Tracheostomy	3
	Fibreoptic bronchoscopy	4
	Chest aspiration	4
	Chest drain insertion	4
Technical Skills and	Chest drain management	4
Procedures	Establish an airway	4
	Internal cardiac massage	4
	OPERATIVE MANAGEMENT	
	Re-exploration for bleeding or tamponade	4
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Торіс	Cardio-pulmonary Bypass, Myocardial Protection and Circulatory Support	Competence Level
Objective	To manage the clinical and technical aspects of cardiopulmonary bypass, myocardial protection and circulatory support.	
	BASIC KNOWLEDGE	
	Physiology	
	Haemodynamics: physiology and measurement	4
	Cardiac arrhythmias	4
	Haemostasis, thrombosis and bleeding	4
	Acid base balance	4
	Pulmonary physiology, ventilation and gas exchange	4
Knowledge	Metabolic response to trauma and surgery	4
	GIT, renal and hepatic physiology	4
	Temperature regulation	4

Anatomy	
Heart, pericardium and great vessels	4
Mediastinum, thoracic inlet and neck	4
Chest wall and diaphragm	4
Femoral triangle and peripheral vascular system	4
Pathology	
Inflammation and wound healing	4
Systemic inflammatory response syndrome	4
ARDS	4
Pharmacology	
Drugs used in the treatment of hypertension, heart failure and angina	4
Inotropes, vasodilators and vasoconstrictors	4
Anti-arrhythmic drugs	4
Haemostatic drugs	4
Antiplatelet, anticoagulant and thrombolytic drugs	4
Analgesics	4
Antibiotics	4
Anaesthetic agents, local and general	4
Microbiology	
Organisms involved in cardiorespiratory infection	4
Antimicrobial treatment and policies	4
SPECIFIC KNOWLEDGE	
Principles and practice of CPB	4
Relevant equipment and technology and its application	4
Monitoring during CPB	4
Inflammatory and pathophysiological response to bypass	4
Pulsatile and non pulsatile flow	4
Effect of CPB on pharmacokinetics	4
 Priming fluids and haemodilution	4

	Acid base balance – pH and alpha stat	4
	Neuropsychological consequences of CPB	4
	Cell salvage and blood conservation	4
Clinical Skills	N/A	
	OPERATIVE MANAGEMENT	
	Median sternotomy open and close	4
Technical	Cannulation and institution of cardiopulmonary bypass	4
	Safe conduct of CPB – problem solving and troubleshooting	4
Skills and Procedures	Weaning from bypass and decannulation	4
	Femoral cannulation and decannulation	4
	Repeat sternotomy, with pericardial dissection, cardiac mobilisation and cannulation	4
	Relevant cannulation techniques and appropriate delivery of cardioplegia	4
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Торіс	Cardio-pulmonary Bypass, Myocardial Protection and Circulatory Support	Competence Level
Category	Myocardial Protection	
Objective	To manage the clinical and technical aspects of cardiopulmonary bypass, myocardial protection and circulatory support.	
	BASIC KNOWLEDGE	
	Myocardial cellular physiology	4
	Myocardial function and dysfunction	4
	Haemodynamics and arrhythmias	4
	Coronary arterial and venous anatomy	4
Knowledge	SPECIFIC KNOWLEDGE	
	Scientific foundations of myocardial preservation	4
	Principles and practice of myocardial preservation	4
	Cardioplegia solutions and delivery modes.	4
	Non-cardioplegic techniques of preservation	4

Clinical Skills	PATIENT MANAGEMENT Myocardial management throughout the peri-	4
	Ability to adapt preservation technique to clinical situation	4
	OPERATIVE MANAGEMENT	
	Median sternotomy open and close	4
	Cannulation and institution of cardiopulmonary bypass	4
Technical	Safe conduct of CPB – problem solving and troubleshooting	4
Skills and	Weaning from bypass and decannulation	4
Procedures	Femoral cannulation and decannulation	4
	Repeat sternotomy, with pericardial dissection, cardiac mobilisation and cannulation	4
	Relevant cannulation techniques and appropriate delivery of cardioplegia	4
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Торіс	Cardio-pulmonary Bypass, Myocardial Protection and Circulatory Support	Competence Level
Category	Circulatory Support	
Objective	To manage the clinical and technical aspects of cardiopulmonary bypass, myocardial protection and circulatory support.	
	BASIC KNOWLEDGE	
	Haemodynamics: physiology and measurement	4
	Cardiac arrhythmias	4
	Haemostasis, thrombosis and bleeding	4
Knowledge	Anatomy of the femoral triangle and peripheral vascular system	4
	Inotropes, vasodilators and vasoconstrictors	4
	Anti-arrhythmic drugs	4
	Haemostatic drugs	4
	Antiplatelet, anticoagulant and thrombolytic drugs	4

	SPECIFIC KNOWLEDGE	
	Mechanical circulatory support in the pre- operative, peri-operative and post-operative periods	4
	Intra aortic balloon pump – indications for use, patient selection and complications	4
	Physiology of the balloon pump	4
	Understanding of relevant equipment and technology	4
	Ventricular assist devices – indications for use, patient selection and complications	3
	PATIENT MANAGEMENT	
	Patient selection for mechanical circulatory support	4
Clinical	Insertion and positioning of the intra aortic balloon pump	4
SKIIIS	Management of the balloon pump including timing and trouble shooting	4
	Care of the patient with intra aortic balloon pump, including recognition and management of complications	4
	OPERATIVE MANAGEMENT	
	Median sternotomy open and close	4
	Cannulation and institution of cardiopulmonary bypass	4
	Safe conduct of CPB – problem solving and troubleshooting	4
Technical	Weaning from bypass and decannulation	4
Skills and Procedures	Femoral cannulation and decannulation	4
	Repeat sternotomy, with pericardial dissection, cardiac mobilisation and cannulation	4
	Relevant cannulation techniques and appropriate delivery of cardioplegia	4
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Торіс	Ischaemic Heart Disease	Competence Level
Objective	To manage all the surgical aspects of a patient with ischaemic heart disease including the complications of ischaemic heart disease.	

	BASIC KNOWLEDGE	
	Physiology	
	Myocardial cellular physiology	4
	Haemodynamics; physiology and measurement	4
	Electrophysiology, including conduction disorders	4
	Haemostasis, thrombosis and bleeding	4
	Acid base balance	4
	Pulmonary physiology, ventilation and gas exchange	4
	Metabolic response to trauma	4
	Vascular biology and reactivity	4
	Anatomy	
	Heart, pericardium and great vessels	4
	Coronary anatomy and variants	4
	Coronary angiography	4
	Anatomy of the peripheral vascular system and vascular conduits	4
	Pathology	
	Inflammation and wound healing	4
	Atheroma, medial necrosis and arteritis	4
	Intimal hyperplasia and graft atherosclerosis	4
	Myocardial infarction and complications	4
Knowledge	Systemic inflammatory response syndrome	4
Kilowieuge	Pharmacology	
	Drugs used in the treatment of hypertension, heart failure and angina	4
	Anti-arrhythmic drugs	4
	Haemostatic drugs	4
	Antiplatelet, anticoagulant and thrombolytic drugs	4
	Analgesics	4
	Antibiotics	4
	Anaesthetic agents, local and general	4

	Microbiology	
	Organisms involved in cardiorespiratory infection	4
	Organisms involved in wound infection	4
	Antibiotic usage and prophylaxis	4
	Antisepsis	4
	CLINICAL KNOWLEDGE	
	General	
	Diagnosis, investigation and treatment of heart disease	4
	Risk assessment and stratification	4
	Cardiopulmonary resuscitation	4
	Cardiac arrhythmias	4
	Complications of surgery	4
	Renal dysfunction	4
	Multiorgan failure	4
	Cardiac rehabilitation	4
	Blood transfusion and blood products	4
	Wound infection and sternal disruption	4
	Specific	
	Diagnosis investigation and assessment of IHD	4
	Operative treatment - Off pump and on pump surgery	4
	Results of surgery - survival, graft patency, recurrence	4
	Arterial revascularisation	4
	Redo coronary artery surgery	4
	Role of PCI and non operative treatment	4
	Management of cardiovascular risk factors	4
	Complications of myocardial infarction and ischaemic heart disease VSD, mitral regurgitation, aneurysm.	4
Oliniaal	HISTORY AND EXAMINATION	
Skills	Cardiovascular system and general history and examination including conduit, drug	4

	history, identification of comorbidity and risk assessment	
	DATA INTERPRETATION	
	Routine haematology and biochemical investigations	4
	Interpretation of haemodynamic data	4
	Chest radiograph	4
	ECG including exercise ECG	4
	Coronary Angiography	4
	Cardiac Catheterisation data	4
	Echocardiography including 2D, Doppler and TOE and stress echo	4
	Nuclear cardiology	4
	PATIENT MANAGEMENT	
	Cardiopulmonary resuscitation	4
	Diagnosis and treatment of cardiac arrhythmias	4
	Management of post cardiac surgical patient	4
	Management of complications of surgery	4
	Cardiac rehabilitation	4
	Blood transfusion and blood products	4
	Wound infection and sternal disruption	4
	OPERATIVE MANAGEMENT Isolated, first time coronary artery surgery (May include both off pump and on pump options and arterial revascularisation	4
Technical	strategies)	
Skills and Procedures	Repeat coronary artery surgery	3
	Complications of ischaemic heart disease including post infarction VSD, mitral regurgitation and left ventricular aneurysm	2
Professional	Please see the Professional Skills and	
Skills	Behaviour section for these skills	

Topic	Heart Valve Disease	Competence Level
Objective	To manage a patient with both uncomplicated and complicated heart valve disease, including operative management.	
	BASIC KNOWLEDGE	
	Physiology	
	Cardiovascular physiology including valve physiology and haemodynamics	4
	Electrophysiology, including conduction disorders	4
	Haemostasis, thrombosis and bleeding	4
	Acid base balance	4
	Pulmonary physiology, ventilation and gas exchange	4
	Metabolic response to trauma	4
	Anatomy	
	Cardiac chambers and valves, pericardium and great vessels	4
	Anatomy of the conduction system	4
	Pathology	
	Pathophysiology of valve incompetence and stenosis	4
	Consequences of valve disease on cardiac function and morphology	4
	Pathophysiology of mixed valve disease and combined valve pathology (eg aortic and mitral)	4
	Combined valvular and ischaemic heart disease	4
	Atrial fibrillation and other arrhythmias	4
Knowledge	Pharmacology	
	Drugs used in the treatment of hypertension, heart failure and angina	4
	Anti-arrhythmic drugs	4
	Haemostatic drugs	4
	Antiplatelet, anticoagulant and thrombolytic drugs	4
	Analgesics	4
	Antibiotics	4

Anaesthetic agents, local and general	4
Microbiology	
Organisms involved in cardio respiratory infection	4
Organisms involved in wound infection	4
Antibiotic usage and prophylaxis	4
Antisepsis	4
Endocarditis and prosthetic valve endocarditis	4
CLINICAL KNOWLEDGE	
General knowledge	4
Cardiopulmonary resuscitation	4
Care of the cardiac surgical patient	4
Complications of surgery	4
Risk assessment and stratification	4
Management of cardiovascular risk facto	ors
Specific Knowledge	4
Diagnosis investigation and assessment valvular heart disease	of
Timing of surgical intervention in valve disease	4
Options for operative management inclue valve replacement/repair (mechanical, biological stented and stentless grafts, homografts and autografts)	ding:
Valve design: materials, configuration an biomechanics.	nd 4
Results of surgery – survival, valve thrombosis, endocarditis, bleeding	4
Interpretation of survival and follow up da	ata 4
Cardiac performance and long term functional status	4
Surgery for conduction problems	4
Surgical treatment of arrhythmias	
HISTORY AND EXAMINATION	
Cardiovascular system and general histo and examination including drug history, identification of co morbidity and risk	bry 4

	assessment	
	DATA INTERPRETATION	
	Routine haematology and biochemical investigations	4
	Interpretation of haemodynamic data	4
Clinical	Chest radiograph	4
Skills	ECG interpretation including exercise ECG	4
	Coronary angiography	4
	Cardiac catheterisation data including left and right heart data	4
	Echocardiography (thoracic and transoesophageal) including 2D, Doppler and stress echo	4
	Nuclear cardiology	4
	PATIENT MANAGEMENT	
	Cardiopulmonary resuscitation	4
	Diagnosis and treatment of cardiac arrhythmias	4
	Management of post cardiac surgical patient	4
	Management of complications of surgery	4
	Cardiac rehabilitation	4
	Blood transfusion and blood products	4
	Wound infection and sternal disruption	4
	Non operative management of endocarditis	4
	Valve selection	4
	Anticoagulation management including complications.	4
	OPERATIVE MANAGEMENT	
	Isolated, aortic valve replacement	4
Technical Skills and Procedures	Isolated mitral valve replacement	3
	Tricuspid valve surgery	3
	Combined valve and graft surgery	4
	Surgical strategies for managing the small aortic root	4

	Aortic root surgery	3
	Redo Valve surgery	3
	Valve surgery for endocarditis	3
	Techniques for surgical ablation of arrhythmias	3
	Mitral valve repair	3
	Alternative surgical approaches to valve surgery including thoracotomy, trans-septal approaches, and minimal access surgery	2
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Topic	Aortovascular Disease	Competence Level
Objective	To manage uncomplicated surgical aspects of a patient with aortovascular disease, including operative management where appropriate.	
	BASIC KNOWLEDGE	
	Physiology	
	Vascular biology and reactivity	4
	Haemodynamics; physiology and measurement	4
	Rheology and arterial pressure regulation	4
	Haemostasis, thrombosis and bleeding	4
	Physiology of transfusion therapy	4
	Principles of surgical infectious disease	4
	Acid base balance	4
	Metabolic response to trauma	4
	Pathophysiology and of hypothermia including the effects upon haemoglobin, metabolic rate and pH with their management	4
	Anatomy	
Knowledge	Heart, pericardium and great vessels	4
Knowledge	Anatomy of the peripheral vascular system	4
	Blood supply of the spinal cord	4
	Pathology	
	Inflammation and wound healing	4

Atheroma, medial necrosis and arteritis	4
Inherited disorders of vascular biology	4
Systemic inflammatory response syndrome	4
Pharmacology	4
Drugs used in the treatment of hypertension, heart failure and angina	4
Anti-arrhythmic drugs	4
Haemostatic drugs	4
Antiplatelet, anticoagulant and thrombolytic drugs	4
Anti-emetics Analgesics	4 4
Antibiotics	4
Anaesthetic agents, local and general	4
Microbiology	
Organisms involved in cardiorespiratory infection	4
Organisms involved in wound infection	4
Antibiotic usage and prophylaxis	4
Antisepsis	4
CLINICAL KNOWLEDGE	
General	4
Risk assessment Cardiopulmonary resuscitation	4
Cardiac arrhythmias	4
Complications of surgery	4
Renal dysfunction	4
Multiorgan failure	4
Blood transfusion and blood products	4
Wound infection and sternal disruption	
Specific	4
Natural history of aortic disease	4
Diagnosis, investigation and assessment of aortic disease	4

	Knowledge of operative treatment including spinal cord and cerebral preservation strategies • Type A dissection • Type B dissection• Traumatic aortic rupture • Thoraco-abdominal aneurysm Results of surgery – survival, complication rates Non-surgical management including the role of endovascular stenting	4 4 4
	Management of cardiovascular and non- cardiovascular risk factors	
	HISTORY AND EXAMINATION	
	Cardiovascular system and general history and examination including assessment of pre-operative complications, drug history, identification of co-morbidity and risk assessment	4
	DATA INTERPRETATION	
	Routine haematology and biochemical investigations	4
	Interpretation of haemodynamic data	4
	Chest radiograph	4
	ECG including exercise ECG	4
	Coronary Angiography	4
	Aortography	4
	Cardiac Catheterisation data	4
	Echocardiography including 2D, Doppler, TOE and stress echo	4
	CT scanning	4
	MRI scanning	4
Clinical	PATIENT MANAGEMENT	
Skills	Cardiopulmonary resuscitation	4
	Diagnosis and treatment of cardiac arrhythmias	4
	Management of post cardiac surgical patient	4
	Management of complications of surgery	4
	Cardiac rehabilitation	4
	Blood transfusion and blood products	4

	Wound infection and sternal disruption	4
Technical Skills and Procedures	OPERATIVE MANAGEMENT Preparation for and management of cardiopulmonary bypass, including alternative, non-bypass strategies for descending aortic surgery Organ protection strategies including HCA, RCP and SACP Femoral cannulation Axillary cannulation Surgery for acute dissection of the ascending aorta Aortic root replacement for chronic aortic root disease Complex aortic surgery including arch surgery, descending aortic and thoraco- abdominal aortic surgery	4 3 4 3 4 3 2
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Торіс	Cardiothoracic Trauma	Competence Level
Objective	To evaluate and manage, including surgical management where appropriate, and as part of a multidisciplinary team, a patient with thoracic trauma.	
Knowledge	<ul> <li>BASIC KNOWLEDGE</li> <li>Anatomy of the lungs, heart, chest wall, diaphragm and oesophagus</li> <li>Anatomy of the larynx, trachea and bronchial tree</li> <li>Physiology of breathing and its control</li> <li>Physiology of the heart and circulation</li> <li>GENERAL TRAUMA MANAGEMENT</li> <li>Principles of trauma management (as defined by ATLS)</li> <li>Principles of emergency resuscitation following cardiac arrest</li> <li>SPECIFIC KNOWLEDGE</li> <li>The mechanism and patterns of injury</li> </ul>	4 4 4 4 4 4

	associated with blunt, penetrating and deceleration injuries to the chest	4
	The post-ATLS, definitive care of blunt, penetrating and deceleration injuries to the chest.	4
	The indications and use of appropriate investigations in thoracic trauma management	4
	Pain relief in chest trauma, including epidural anaesthesia.	4
	Indications for immediate, urgent and delayed thoracotomy in trauma	4
	GENERAL TRAUMA MANAGEMENT (ATLS)	
	Assessment and management of airway, breathing and circulation	4
		4
	Maintenance of an adequate airway and respiratory support	
	Protection of the cervical spine	4
	Circulatory resuscitation	4
	Establishment of appropriate monitoring	4
	Assessment and management of pain and anxiety	4
	CARDIOTHORACIC TRAUMA MANAGEMENT	
	Examination and assessment of the of the chest, including respiratory cardiovascular and circulatory systems	4
	Recognition and management of immediately	4
	life threatening situations: obstructed airway, tension pneumothorax, massive haemothorax, open chest wound, flail chest and cardiac tamponade	
Clinical Skills	Recognition and management of potentially life threatening situations: lung contusion, bronchial rupture, blunt cardiac injury, intrathoracic bleeding, oesophageal injury, simple pneumothorax and major vascular	4
	Recognition of potentially life threatening penetrating injuries to the chest and	4
	abdomen	4
	Interpretation of chest x-ray, ECG, arterial blood gases and echocardiography	4
	Detection and treatment of cardiac	

	arrhythmias	
	Management of the widened mediastinum including appropriate investigations and multidisciplinary consultation	4
	PRACTICAL SKILLS	
	Establish an emergency airway (surgical and non-surgical)	4
	Insertion and management of thoracic drains	4
	Establish adequate venous access and monitoring	4
	OPERATIVE MANAGEMENT OF THORACIC TRAUMA	
Technical Skills and	Postero-lateral, thoracotomy, antero-lateral thoracotomy and thoraco-laparotomy	4
Procedures	Bilateral anterior thoracotomy	3
	Median sternotomy and closure	4
	Repair of cardiac injuries	
	Repair of pulmonary and bronchial injuries	3
	Management of the complications of chest trauma including retained haemothorax and empyema	3
	Repair of oesophageal injuries	3
	Treatment of aortic transection	3
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Торіс	General Management of a Patient Undergoing Thoracic Surgery	Competence Level
Objective	To manage a patient undergoing thoracic surgery. The knowledge and clinical skills are common to all thoracic surgical conditions, and should be read in conjunction with the syllabus for specific surgical conditions.	
	BASIC KNOWLEDGE	
	Physiology	
	Pulmonary physiology, ventilation and gas exchange	4
	Haemostasis, thrombosis and bleeding	4
	Acid base balance	4
	Metabolic response to trauma	4

	Digestive, renal and hepatic physiology	4
	Nutrition	4
	Anatomy	
	Tracheobronchial tree and lungs	4
	Thoracic inlet, neck and mediastinum	4
	Oesophagus and upper GI tract	4
	Chest wall and diaphragm	4
	Pathology	
	Inflammation and wound healing	4
	Bronchopulmonary infections	4
	ARDS	4
	Emphysema	4
Knowledge	Pulmonary fibrosis	4
Kilowieuge	Pulmonary manifestations of systemic disease	4
	Systemic manifestations of pulmonary disease	4
	Benign and malignant tumours of trachea, bronchus and lung parenchyma	4
	Oesophagitis, columnar-lined oesophageal stricture	4
	Oesophageal motility disorders	4
	Malignant and benign tumours of the oesophagus and stomach	4
	Malignant and benign tumours of the pleura and chest wall, mediastinum and thyroid	4
	Pharmacology	
	Bronchodilators	4
	H2 antagonists and proton pump inhibitors	4
	Haemostatic drugs	4
	Analgesics	
	Antibiotics	
	Anaesthetic agents, local and general	* 
	Microbiology	4

Organisms involved in respiratory infection including TB	4
Organisms involved in wound infection	4
Antibiotic usage and prophylaxis	4
Antisepsis	4
Management of intra pleural sepsis	+
CLINICAL KNOWLEDGE	
Thoracic Incisions	
Types of incisions and appropriate use, including lateral, anterior, muscle sparing and video-assisted approaches	4
Sternotomy	4
Difficult access and improving exposure	4
Early and late complications of thoracic incisions	4
Analgesia including pharmacology, effectiveness, side effects and use in combination regimens	4
Post-operative analgesia, including epidural, PCAS and paravertebral catheter techniques.	4
Bronchoscopy	
The role of rigid and flexible bronchoscopy in the investigation of airway and pulmonary disease	4
The anaesthetic, airway and ventilatory management during rigid and flexible bronchoscopy	4
Mediastinal exploration	4
Endoscopic, radiological and surgical approaches used to evaluate and diagnose mediastinal disease of benign, infective, primary and malignant aetiology	
Equipment for mediastinal exploration	4
Relevant imaging techniques, and influence on surgical approach.	4

	HISTORY AND EXAMINATION	
	System specific and general history and examination, including drug history, identification of comorbidity and functional status.	4
	DATA INTERPRETATION	
	Routine haematology and biochemical investigations	4
	Chest radiograph and ECG	4
	CT, including contrast enhanced CT	4
	Interpretation of imaging of the mediastinum.	4
	MRI and PET	4
	Respiratory function tests	4
	Ventilation/perfusion scan	4
	Blood gases	4
Clinical	Oesophageal function tests and contrast studies	4
Skills	PATIENT MANAGEMENT	
	Cardiopulmonary resuscitation	4
	Risk assessment, stratification and management	4
	Management of patients making an uncomplicated or complicated recovery from thoracic operations.	4
	Post-operative management of pain control, respiratory failure, sputum retention, haemodynamic instability and low urine output.	4
	Treatment of cardiac arrhythmias	4
	Pain control	4
	Wound infection and disruption	4
	Blood transfusion and blood products	4
	Physiotherapy and rehabilitation	4
	Palliative care	3

	PRACTICAL SKILLS	
	Tracheostomy	3
	Fibreoptic bronchoscopy	2
	Chest aspiration	4
	Chest drain insertion	4
	Chest drain management	4
	OPERATIVE MANAGEMENT	
	Incisions	
	Correct positioning of patient for thoracic surgery	4
	Perform and repair thoracic incisions, including lateral, anterior, muscle sparing and VATS incisions	4
	Difficult access and improving exposure	4
	Perform and close sternotomy incision	4
	Bronchoscopy	
Technical Skills and	Diagnostic bronchoscopy including biopsy - rigid and flexible	4
Procedures	Equipment, instrumentation and preparation	4
	Perform rigid and flexible bronchoscopy	4
	Airway and ventilatory management	4
	Recognise normal and abnormal anatomy	4
	Identify common pathologies and the surgical relevance of the findings	4
	Take appropriate specimens for bacteriology, cytology and histology	4
	Management of moderate bleeding and other common complications	4
	Supervision of the care of patients recovering from bronchoscopy	4
	Post-operative bronchoscopy: indications and procedure	4
	Tracheostomy and minitracheostomy	3
	Mediastinal Exploration	4
	Surgical evaluation of the mediastinum using cervical, anterior and VATS approaches	

Professional	Please see the Professional Skills and
Skills	Behaviour section for these skills

Topic	Neoplasms of the Lung	Competence Level
Objective	To manage a patient with a neoplasm of the lung, including operative management where appropriate and including complicated situations. Appreciation of the multidisciplinary, multimodality approach to the management of the condition.	
Knowledge	GENERAL KNOWLEDGE As for thoracic surgery - general SPECIFIC KNOWLEDGE Benign and malignant tumours of trachea, bronchus and lung parenchyma Epidemiology, presentation, diagnosis, staging (pre-operative, intraoperative and pathological) and treatment of lung cancer and lung metastases Neoadjuvant and adjuvant treatment of lung cancer Results of treating thoracic malignancy by surgery, medical or oncological techniques, including multimodality management Survival, recurrence rates and relapse patterns after surgical treatment and the investigation and management of relapse Knowledge of palliative care techniques Treatment of post-operative complications of pulmonary resection such as empyema and broncho-pleural fistula Role of repeat surgery in recurrent and second primary malignancies of the lung Medical and surgical options to deal with recurrent or problematic complications of	
Clinical Skills	PATIENT MANAGEMENT As for thoracic surgery - general Clinical history and examination Interpretation of laboratory, physiological and imaging techniques	4
	Interpretation of endoscopic findings	4

	Patient selection with assessment of function and risk.	4
	OPERATIVE MANAGEMENT	
	Bronchoscopic assessment including biopsy	4
	Endoscopic and surgical techniques of lung biopsy	4
	Mediastinal assessment and biopsy Intraoperative diagnosis and staging	4
	Endoscopic management of tumours using laser and stenting	3
Technical Skills and Procedures	Surgery for benign and malignant conditions of the lungs, including uncomplicated lobectomy for lung cancer, wedge resection and metastasectomy	4
	Segmentectomy and lobectomy for benign and malignant disease	4
	Redo operations for repeat resections of lung metastases	3
	Advanced resections for lung cancer, including sleeve lobectomy, pneumonectomy and extended resections involving chest wall and diaphragm	3
	Management of post-operative complications such as empyema and broncho-pleural fistula	3
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Торіс	Disorders of the Pleura	Competence Level
Objective	To manage surgical conditions of the pleura and the pleural space, including complicated situations.	
	GENERAL KNOWLEDGE	
	As for thoracic surgery – general	
	SPECIFIC KNOWLEDGE	
	Anatomy and physiology of the pleura	4
	Inflammatory, infective and malignant disease of the visceral and parietal pleura	4
	Pneumothorax	4
Kasadadaa	Pleural effusion	4
Knowledge	Empyema	4
	Mesothelioma	4

	Haemothorax	4
	Chylothorax	4
	Conditions of adjacent organs that affect the pleura	4
	Medical and surgical management of pleural disease, including radiological, open and VATS techniques	4
	Techniques to deal with failures of primary treatment	4
	Advanced techniques for pleural space obliteration such as thoracoplasty and soft-tissue transfer	4
	PATIENT MANAGEMENT	
Clinical Skills	As for thoracic surgery – general	
	Interpretation of imaging of the pleura	4
	Chest drains: insertion, management, removal and treatment of complications	4
	Management of patients making uncomplicated and complicated recovery from pleural interventions	4
	OPERATIVE MANAGEMENT	
Technical Skills and Procedures	Open procedures for non-complex pleural problems	4
	VATS procedures for non-complex pleural problems	4
	Open and VATS procedures for empyema, including techniques for decortication	3
	Open and VATS procedures in complex cases	3
	Advanced techniques of pleural space obliteration, with appropriate specialist assistance	3
Professional	Please see the Professional Skills and	
Skills	Behaviour section for these skills	

Торіс	Disorders of the Chest Wall	Competence Level
Objective	To manage a patient with an abnormality or disease affecting the chest wall, including surgical management where appropriate, and including complex cases.	
	GENERAL KNOWLEDGE As for thoracic surgery – general	

	SPECIFIC KNOWLEDGE	
	Anatomy of the chest wall	4
Knowledge	Congenital, inflammatory, infective and neoplastic conditions that can affect the components of the chest wall	4
	Clinical, laboratory and imaging techniques used in the evaluation of chest wall pathology	4
	Techniques used in the diagnosis of chest wall disease, including aspiration and core biopsy, and incision and excision biopsy	4
	Pectus deformities: aetiology, physiological and psychological consequences. Surgical options for correction Techniques used to resect the sternum and chest wall, physiological and cosmetic sequelae.	4
	Prosthetic materials used in chest wall surgery	4
	The role of repeat surgery to deal with recurrent conditions and the complications of previous surgery	4
	Techniques of complex chest wall reconstruction involving thoracoplasty or soft-tissue reconstruction	4
Clinical Skills	PATIENT MANAGEMENT	
	As for thoracic surgery – general	
	Clinical history and examination	4
	Interpretation of laboratory, physiological and imaging techniques	4
	Patient selection with assessment of function and risk	4
	OPERATIVE MANAGEMENT	
Technical Skills and Procedures	Chest wall biopsy and choice of appropriate technique	4
	Open and excision biopsy and resection of the chest wall for benign and malignant conditions	4
	Chest wall resection in combination with resection of the underlying lung	3
	Selection and insertion of prosthetic materials, and selection of cases in which such materials are required	4
	Pectus correction, by both open and	
	minimally-invasive techniques, including post-operative care and complications	3
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	Surgery for the complications of chest wall resection and repeat surgery to resect recurrent chest wall conditions Complex chest wall reconstruction	3
		-
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Торіс	Disorders of the Diaphragm	Competence Level
Objective	To manage a patient with disease or abnormality of the diaphragm, including surgical management where appropriate, and including complicated cases.	
	GENERAL KNOWLEDGE	
	As for thoracic surgery – general	
	SPECIFIC KNOWLEDGE	
	Anatomy and physiology of the diaphragm	4
	Pathology of the diaphragm	4
	Clinical, physiological and imaging techniques in the assessment of diaphragmatic abnormalities	4
Knowledge	Physiological consequences of diaphragmatic herniation or paresis	4
	Surgical techniques used to biopsy and resect diaphragmatic tumours	4
	Situations in which replacement of the diaphragm is required, the materials used and their value and limitations	4
	Complications of diaphragmatic resection and their management	4
	Techniques used to electrically pace the diaphragm, and the conditions in which such treatment is appropriate	2
	PATIENT MANAGEMENT	
	As for thoracic surgery – general	
Clinical	Specific Skills	
Skills	Clinical history and examination	4
	Interpretation of laboratory, physiological and imaging techniques	4

	Patient selection with assessment of function and risk Management of patients making an uncomplicated or complicated recovery from diaphragmatic resection	4
Technical Skills and Procedures	OPERATIVE MANAGEMENT Resection and repair of the diaphragm and adjacent structures Complications of diaphragmatic resection Management of diaphragmatic trauma	3 3 3
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Торіс	Emphysema and Bullae	Competence Level
Objective	To manage a patient with emphysema and bullae, including surgical management where appropriate, and including complicated cases.	
	GENERAL KNOWLEDGE	
	As for thoracic surgery – general	
	SPECIFIC KNOWLEDGE	
	Aetiology, pathology and physiology of chronic obstructive airways disease (COPD)	4
	Epidemiology and public health issues	4
	Smoking cessation measures	4
	Clinical, laboratory, physiological and imaging techniques	4
Knowledge	Medical and surgical management of COPD and its complications	4
	Selection criteria and pre-operative preparation	4
	Surgical techniques used in the treatment of emphysema and bullae and the results of surgical treatment including relevant clinical trials.	4
	Lung volume reduction surgery: techniques, complications and management of complications	4
	Experimental and developmental techniques in lung volume reduction surgery	2

	PATIENT MANAGEMENT	
	As for thoracic surgery – general	
	Clinical history and examination	4
	Interpretation of laboratory, physiological and imaging techniques	4
Clinical Skills	Patient selection with assessment of function and risk	4
	Post-operative management of patients making an uncomplicated recovery from surgery for emphysema or the complications of such diseases	4
	Management of patients following lung volume reduction surgery	4
	OPERATIVE MANAGEMENT	
	Procedures to deal with secondary pneumothorax and bullae by open techniques	4
Technical Skills and Procedures	Procedures to deal with secondary pneumothorax and bullae by VATS techniques	4
	Lung volume reduction surgery, using open and VATS techniques	4
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Topic	Disorders of the Pericardium	Competence Level
Objective	To manage a patient with disease of the pericardium or pericardial space, including surgical management where appropriate, and including complicated cases.	
	GENERAL KNOWLEDGE	
	As for thoracic surgery – general	
	SPECIFIC KNOWLEDGE	
	Anatomy of the pericardium	4
Knowledge	Pathology of the pericardium	4
	Pathophysiological consequences of pericardial constriction and tamponade	4
	Clinical, echocardiographic and imaging techniques used to detect pericardial disease and assess its consequences	4
	Techniques for pericardial drainage using	4

	quided needle aspiration	
	Surgical drainage by sub-xiphoid, thoracotomy or VATS approaches	4
	Surgical techniques for pericardiectomy Materials used for pericardial replacement, their value and limitations and the situations in which used	4 4
	Post-operative complications following resection of the pericardium and its prosthetic replacement	4
	PATIENT MANAGEMENT	
	As for thoracic surgery – general	
	Clinical history and examination	4
	Interpretation of laboratory, physiological and imaging techniques, including echocardiography	4
Clinical	Recognition and assessment of pericardial tamponade and constriction.	4
Skills	Techniques for pericardial drainage using guided needle aspiration	4
	Recognition of pericardial herniation and cardiac strangulation	4
	Patient selection with assessment of function and risk	4
	Management of patients making an uncomplicated or complicated recovery from pericardial surgery	4
	OPERATIVE MANAGEMENT	
	Non-complex pericardial fenestration procedures	4
Technical	Pericardial fenestration in complex cases	3
Skills and	Pericardiectomy for relief of constriction	3
FIOCEGUIES	Resection of the pericardium and replacement with prosthetic materials	3
	Competence in dealing with the complications of pericardial resection and replacement	3
Professional	Please see the Professional Skills and	
Skills	Behaviour section for these skills	

Торіс	Disorders of the Mediastinum	Competence Level
Objective	To manage a patient with benign and malignant disease of the mediastinum, including surgical management where	

	appropriate, and including complicated cases.	
	GENERAL KNOWLEDGE	
	As for thoracic surgery – general	
	SPECIFIC KNOWLEDGE	
	Anatomy of the mediastinum	4
	Congenital, benign, infective and malignant (primary and secondary) conditions of the mediastinum	4
	Systemic conditions associated with the mediastinum	4
Knowledge	Clinical, laboratory, electromyographic and imaging techniques used in the diagnosis and assessment of patients with mediastinal disease	4
	Myasthenia gravis: medical, surgical and peri-operative management	4
	Staging of thymoma and grading of myasthenia	4
	Benign and malignant conditions, which do not require surgical biopsy or resection	4
	Oncological treatment of malignant diseases of the mediastinum, including multidisciplinary care	4
	Surgical techniques for the treatment of myasthenia gravis, mediastinal cysts and tumours, complications and results	4
	Retrosternal goitre and its management	4
	PATIENT MANAGEMENT	
	As for thoracic surgery – general	
	Clinical history and examination	4
Clinical	Interpretation of laboratory, physiological and imaging techniques	4
Skills	Patient selection with assessment of function and risk	4
	Post-operative management of patients including recognition and management of post-operative complications	4
<u> </u>	OPERATIVE MANAGEMENT	
Technical Skills and Procedures	Biopsy of mediastinal masses using appropriate techniques	4

	Excision of the thymus	4
	Isolated resection of mediastinal cysts and tumours	4
	Resection of mediastinal cysts and tumours, including extended resections involving adjacent structures	4
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Торіс	Disorders of the Airway	Competence Level
Objective	To manage a patient with disease of the major airways, including surgical management where appropriate, and including complicated cases.	
	GENERAL KNOWLEDGE	
	As for thoracic surgery – general	
	SPECIFIC KNOWLEDGE	
	Anatomy of the larynx, trachea and bronchus	4
	Physiology of the normal airway	4
	Pathophysiology of disease and its effects on lung function	4
	Endoscopic appearances in health and disease	4
	Congenital, inflammatory, infective, benign and neoplastic diseases of the airways	4
	Symptoms, signs of airway disease	4
Knowledge	Clinical, physiological and imaging tests undertaken to diagnose and assess airway disease	4
	Techniques for surgical resection of the trachea	4
	Bronchoplastic procedures and the limitations of these techniques	4
	Medical and oncological treatments available to deal with airway diseases	4
	Endoscopic techniques used to deal with benign and malignant conditions, including disobliteration and stenting	4
	Presentation, investigation and management of anastamotic complications following airway surgery	4
	Presentation, evaluation and treatment of	4

	Istulae in the aerodigestive tract, due to	
	benigh, manghant and latrogenic causes	
	Role of open and endoscopic procedures in dealing with problems	4
	PATIENT MANAGEMENT	
	As for thoracic surgery – general	
	Clinical history and examination	4
	Interpretation of laboratory, physiological and imaging techniques	4
Clinical Skills	Recognition, diagnosis and assessment of airway obstruction	4
	Patient selection with assessment of function and risk	4
	Post-operative care of patients making an uncomplicated recovery from major airway surgery	4
	Post-operative care of patients making a complicated recovery from airway surgery	4
	OPERATIVE MANAGEMENT	
	Endoscopic assessment of a patient with airways disease	4
	Sleeve resection of the trachea for simple benign conditions	4
Technical	Sleeve resection of the main bronchi, including lobectomy where appropriate, for malignant disease	4
Skills and Procedures	Techniques for the relief of major airways obstruction including stenting	4
	Airway resection for tumours and complex benign conditions and techniques for airway reconstruction, anastomosis and laryngeal release	3
	Repeat resections for recurrence and the complications of prior resection	3
	Management of fistulae in the aerodigestive tract by surgical and endoscopic techniques	3
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Topic	Congenital Heart Disease	Competence Level
Objective	To manage uncomplicated congenital heart disease.	
	BASIC KNOWLEDGE	
	Physiology	
	Relevant general physiology of childhood	4
	Fetal circulation and circulatory changes at birth	4
	Haemodynamics; physiology and measurement including shunt calculations	4
	Physiology of pulmonary vasculature	4
	Myocardial cellular physiology in immature myocardium	4
	Electrophysiology, including conduction disorders	4
	Haemostasis, thrombosis and bleeding	4
	Acid base balance	4
Knowledge	Pulmonary physiology, ventilation and gas exchange	4
	Metabolic response to trauma	4
	Vascular biology and reactivity	4
	Physiology of cardiopulmonary bypass including low flow and circulatory arrest.	4
	pH and alpha stat CPB management	4
	Anatomy	
	Embryology of the heart	4
	Anatomy of the heart, pericardium and great vessels	4
	Pulmonary anatomy	4
	Coronary anatomy and variants	4
	Anatomy of the peripheral vascular system and vascular conduits including aortopulmonary shunts	4
	Sequential cardiac analysis and terminology	4

of cardiac malformations	
Pathology	
Inflammation and wound healing	4
Systemic Inflammatory Response Syndrome	4
Effect of growth and pregnancy	4
Pharmacology	
Drugs used in the treatment of congenital heart disease	4
Inotropes	4
Anti-arrhythmic drugs	4
Haemostatic drugs	4
Antiplatelet, anticoagulant and thrombolytic drugs	4
Analgesics	4
Antibiotics	4
Anaesthetic agents, local and general	4
Hypotensive agents (systemic and pulmonary).	4
Microbiology	4
Organisms involved in cardiorespiratory infection	4
Organisms involved in wound infection	4
Antibiotic usage and prophylaxis	4
Antisepsis	4
CLINICAL KNOWLEDGE	
General	
Diagnosis, investigation and treatment of congenital heart disease	4
Results of surgery - common complications and management.	4
Late complications of surgery for congenital heart disease	4
Role of interventional cardiology.	4
Role of mechanical assist (IABP, VAD and ECMO)	4
Indications for referral for transplantation	4

Risk assessment and stratification	4
Cardiopulmonary resuscitation	4
Cardiac arrhythmias	4
Renal dysfunction	4
Multiorgan failure	4
Cardiac rehabilitation	4
Blood transfusion and blood products	4
Wound infection and sternal disruption	4
Types of cardiac prosthesis and indications for use	4
Specific knowledge	
Anatomy, pathophysiology, natural history and management of the following conditions or procedures	
Patent ductus arteriosus	4
Aortopulmonary window	3
Atrial septal defect	4
Ventricular septal defect	4
Coarctation	4
PA banding	3
Aortopulmonary and venous shunts	4
Transposition of the great arteries - switch procedure	3
Congenitally corrected TGA	3
Single ventricle/univentricular heart	3
Tetralogy of Fallot/Pulmonary atresia plus VSD	3
Pulmonary atresia and intact septum	3
Hypoplastic left heart and Norwood procedure	3 3
Truncus arteriosus	3
Double outlet right ventricle	3
Pulmonary atresia plus VSD and MAPCAs	3
Partial and complete atrioventricular septal defects	3
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	Anomalies of the pulmonary venous drainage (partial and total)	2
	Anomalies of systemic venous drainage	3
	Congenital aortic valve disease (including supra-valve stenosis)	7
	LV outflow tract obstruction	3
	Sinus of Valsalva aneurysm	4
	Congenital mitral valve disease	3
	Congenital tricuspid valve disease (including Ebsteins abnormality)	
	Anomalies of the coronary arteries (including ALCAPA)	3
	Vascular rings	5
	Cardiac tumours	3
	Pericardial disease	4
	Extra cardiac conduits	3
	Interrupted aortic arch	3
	Extra Corporeal Membrane Oxygenation and VAD	3
	Transplantation for congenital heart disease	3
	HISTORY AND EXAMINATION	
	Cardiovascular system and general history and examination of child or adult with congenital heart disease	4
	DATA INTERPRETATION	
Clinical Skills	Routine haematology and biochemical investigations	4
	Chest radiograph and ECG	4
	Cardiac catheterisation data including interpretation of haemodynamic data, shunt and resistance calculations	3
	Echocardiography in congenital heart disease, including 2D, doppler and TOE	3
	PATIENT MANAGEMENT	
	Principles of paediatric intensive care	4

	Management of adults and children following congenital heart surgery	4
	Management of complications of surgery	4
	Cardiopulmonary resuscitation	4
	Diagnosis and treatment of cardiac arrhythmias	4
	Blood transfusion and blood products	4
	Wound infection and sternal disruption	4
	OPERATIVE MANAGEMENT	
	Sternotomy - open and close, including resternotomy	4
	Thoracotomy - open and close	4
	Preparation for and management of cardiopulmonary bypass including partial bypass	3
	Approaches for ECMO, cannulation and management	3
	Surgical management of the following common uncomplicated conditions	
	Patent ductus arteriosus	3
	Atrial septal defect	4
	Ventricular septal defect	3
Technical Skills and	Coarctation	3
Procedures	Aortopulmonary window	2
	Vascular ring	3
	Aortopulmonary and venous shunts	3
	PA banding	3
	Surgical management of the following conditions requiring advanced procedures	
	Partial atrioventricular septal defect	3
	Aortic and mitral valve surgery including Ross procedure	2
	Open aortic valvotomy	3
	Open pulmonary valvotomy	5
	Tricuspid valve surgery including Ebsteins	2
	Tetralogy of Fallot/Pulmonary atresia plus	2

	VSD Fontan procedures	2
	Extra cardiac conduits and their replacement	2
	Complete atrioventricular septal defect	2
	Surgical management of the following conditions requiring complex procedures	4
	Interrupted aortic arch	
	Total anomalous pulmonary venous drainage	1
	Transposition of the great arteries (switch procedure)	1
	Rastelli procedure	1
	Norwood procedure	1
	Truncus arteriosus repair	1
	Double outlet right ventricle	1
	Pulmonary atresia plus VSD and MAPCAs	1
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Торіс	Intrathoracic Transplantation and Surgery for Heart Failure	Competence Level
Objective	To manage patients with heart failure, including operative management where appropriate.	
Knowledge	BASIC KNOWLEDGE Pathophysiology Haemodynamics of heart failure Molecular mechanisms underlying heart failure Mechanisms and outcomes of respiratory failure Causes of cardiac failure Causes of respiratory failure <i>Immunology</i> Major and minor histocompatability antigen systems Mechanisms of immune activation and pathological consequences for transplanted organs	4 4 4 4 4 4
	Pharmacology	

	Modes of action of commonly used drugs in heart failure.	4
	CLINICAL KNOWLEDGE	
	Resynchronisation therapy: techniques and indications	3
	Indications for, contraindications to and assessment for heart transplantation	4
	Indications for, contraindications to and assessment for lung and heart/lung transplantation	3
	Indications for ECMO	3
	Indictations for VAD	3
	Criteria for brain stem death, management of the brain-dead donor, criteria for matching donor and recipient	4
	Management of patients after intrathoracic organ transplantation, including complications	3
	Results of heart transplantation, lung transplantation and non-transplant interventions for heart failure	4
	HISTORY AND EXAMINATION	
	Cardiovascular system and general history and examination including conduit, drug history, identification of comorbidity and risk assessment	4
	DATA INTERPRETATION	
	Routine haematology and biochemical investigations	4
	Interpretation of haemodynamic data	4
Clinical	Chest radiograph	4
Skills	ECG including exercise ECG	4
	Coronary angiography	4
	Cardiac catheterisation data	4
	Echocardiography including 2D, Doppler and TOE and stress echo	4
	MR assessment of ventricular function and viability	3
	Nuclear cardiology	3

	PATIENT MANAGEMENT	
	Cardiopulmonary resuscitation	1
	Management of brain-dead donor	4
	Management of post cardiac surgical patient	4
	Management of complications of surgery	4
	Cardiac rehabilitation	4
	Blood transfusion and blood products	4
	Wound infection and sternal disruption	4
	Diagnosis and treatment of cardiac arrhythmias	4
		4
	OPERATIVE MANAGEMENT	
	Transplantation	
	Transvenous myocardial biopsy	3
	Donor Retrieval	3
	Ex-vivo donor organ management	2
	Implantation of heart	3
	Implantation of lung	3
Technical	Implantation of heart/lung block	2
Skills and	Surgery for heart failure	
Procedures	Surgical revascularisation for ischaemic cardiomyopathy	4
	Ventricular reverse remodelling surgery	3
	Mitral valve repair for cardiac failure	3
	Cannulation for ECMO	3
	Implantation of epicardial electrodes for resynchronisation therapy	3
	Implantation of extracorporeal VAD	3
	Implantation of intracorporeal VAD	3
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Objective	To manage all the surgical aspects of benign oesophageal disorders including the complications of benign oesophageal disorders.	
	BASIC KNOWLEDGE	
	Physiology	
	Gastric and oesophageal cellular physiology	4
	Mechanical and cellular defence mechanisms in oesophagus	4
	Oesophageal mucosal injury and modulation	4
	Effects of acid pepsin and biliary reflux	4
	Oesophago-gastric physiology and assessment including pH monitoring	4
	Oesophageal motility measurement in achalasia, diffuse spasm and non-specific motility syndromes	4
	Anatomy	
	Embryology of the foregut	4
	The oesophagus and its anatomical relationships from cricopharyngeus to cardia, including details of blood supply and lymphatic drainage	4
Knowledge	Anatomy of the stomach, including its anatomical relationships, blood supply and lymphatic drainage	4
	Anatomy of the colon, including its anatomical relationships, blood supply and lymphatic drainage	4
	Pathology	
	Inflammation and wound healing	4
	Oesophageal injury response and variations in response	4
	The inflammation, metaplasia, dysplasia cancer sequence	4
	Neurological deficits / aetiology of oesophageal dysmotility disorders	4
	Para-oesophageal hernias	4
	Pharmacology	
	Drugs used in the treatment of gastro- oesophageal reflux disorder and oesophageal dysmotility	4
	Microbiology	

	The role of Helicobacter pylori in gastritis and gastroesophageal reflux disorder	4
	The rationale of bacterial eradication treatment	4
	CLINICAL KNOWLEDGE	
	Diagnosis, investigation and treatment of benign oesophageal disorders	4
	Radiology, endoscopy, 24 hour pH monitoring and oesophageal function tests	4
	Risk assessment and stratification	4
	Open, laparoscopic and thoracoscopic surgery of the oesophagus	4
	Relative merits of conservative and operative treatment	4
	Alternative management of achalasia including dilatation and botox injection	4
	The indications for surgery in paraoesophageal hernia	4
	Endoscopic dilatation techniques	4
	HISTORY AND EXAMINATION	
	General and specific history and examination including previous surgery, drug history, identification of comorbidity and risk assessment	4
	DATA INTERPRETATION	
	Routine haematological and biochemical investigation	4
Clinical	Interpretation of oesophageal motility and pH monitoring data	4
Skills	Chest radiograph and contrast imaging	4
	Cardio-pulmonary assessment including exercise tests	4
	PATIENT MANAGEMENT	
	Management of post thoracotomy or laparotomy surgical patient	4
	Management of complications of surgery	4
	Diagnosis and management of oesophageal perforation or anastamotic leak	4

	Blood transfusion and blood products Wound infection and wound disruption	4
	OPERATIVE MANAGEMENT (Benign)	
	Oesophago-gastro-duodenoscopy.	4
	Rigid oesophagoscopy	3
	Oesophageal dilatation	4
Technical Skills and	Open and laparoscopic fundoplication and cardiomyotomy	4
Tiocedures	Mobilisation of oesophagus, stomach and colon	3
	Oesophageal anastomosis	3
	Management of oesophageal perforation: Boerhaave's or endoscopic	3
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

Торіс	Management of Oesophageal Neoplasia	Competence Level
Objective	To manage all the aspects of a patient with oesophageal neoplasia, including operative intervention where appropriate.	
	BASIC KNOWLEDGE	
	Physiology	
	Gastric and oesophageal cellular physiology	4
	Mechanical and cellular defence mechanisms in oesophagus	4
	Oesophageal mucosal injury and modulation	4
	Effects of acid pepsin and biliary reflux	4
	Anatomy	
	The oesophagus and its anatomical relationships from cricopharyngeus to cardia including details of blood supply and lymphatic drainage.	4
	Anatomy of the stomach, including its anatomical relationships, blood supply and lymphatic drainage.	4
Knowledge	Anatomy of the colon, including its blood supply and its anatomical relationships	4

	Pathology	
	Inflammation and wound healing	4
	Oesophageal injury response and variations in response	4
	The aetiology and epidemiology of oesophageal cancer	4
	Metaplasia-dysplasia sequence	4
	Pharmacology	
	Adjuvant and neoadjuvant chemotherapy	4
	Microbiology	
	The role of Helicobacter pylori in gastritis and gastroesophageal reflux disorder	4
	The rationale of bacterial eradication treatment	4
	CLINICAL KNOWLEDGE	
	Diagnosis, investigation and treatment of oesophageal disorders	4
	Radiology, endoscopy and oesophageal function tests	4
	Risk assessment and stratification	4
	Diagnostic tests, including contrast oesophageal imaging, CT Scanning, abdominal ultrasonography, endoscopic ultrasonography and PET scanning	4
	Treatment options and outcomes of treatment	4
	Oesophageal resection	4
	Palliative procedures	4
	Other therapies including radiotherapy, laser, stent and photodynamic therapy	4
	Screening and prevention	4
	HISTORY AND EXAMINATION	
Clinical Skills	General and specific history and examination including previous surgery, drug history, and identification of comorbidity and risk assessment	4
	DATA INTERPRETATION	
	Routine haematology and biochemical investigations	4
	Interpretation of Chest radiograph, contrast	4

	swallow and CT Scan	
	Cardio-pulmonary assessment including exercise tests	4
	PATIENT MANAGEMENT	
	Management of post thoracotomy or laparotomy surgical patient	4
	Management of complications of surgery	4
	Blood transfusion and blood products	4
	Wound infection and wound disruption	4
	Diagnosis and management of oesophageal perforation or anastomotic leak	4
	OPERATIVE MANAGEMENT (Malignant)	
	Oesophago-gastro-duodenoscopy	4
	Assessment by thoracoscopy, laparoscopy and mediastinoscopy	4
Technical	Rigid oesophagoscopy and bronchoscopy	3
Skills and Procedures	Oesophageal dilatation and stent placement	3
	Mobilisation of oesophagus, stomach and colon	3
	Oesophageal resection	3
	Oesophageal reconstruction including interposition techniques	3
Professional Skills	Please see the <u>Professional Skills and</u> <u>Behaviour</u> section for these skills	

# **Professional Behaviour** and Leadership Syllabus

The Professional Skills and Behaviour elements expected of candidates sitting this examination are mapped to the leadership curriculum as laid out by the Academy of Medical Royal Colleges (http://www.aomrc.org.uk). The assessment of these areas is a thread running throughout this examination and is common to all disciplines of surgery.

		Mapping to Leadership Curriculum
Category	<ul> <li>Good Clinical Care <ul> <li>To include:</li> <li>History taking (see GMP Domains: 1, 3, 4)</li> <li>Physical examination (see GMP Domains: 1, 2, 4)</li> <li>Time management and decision making (see GMP Domains: 1, 2, 3)</li> <li>Clinical reasoning (see GMP Domains: 1, 2, 3, 4)</li> <li>Therapeutics and safe prescribing (see GMP Domains: 1, 2, 3)</li> <li>Patient as a focus of clinical care (see GMP Domains: 1, 3, 4)</li> <li>Patient safety (see GMP Domains: 1, 2, 3)</li> <li>Infection control (see GMP Domains: 1, 2, 3)</li> </ul> </li> </ul>	Area 4.1
Objective	<ul> <li>To achieve an excellent level of care for the individual patient:</li> <li>To leicit a relevant focused history</li> <li>To perform focused, relevant and accurate clinical examination</li> <li>To formulate a diagnostic and therapeutic plan for a patient based upon the clinical findings</li> <li>To prioritise the diagnostic and therapeutic plan and communicate a diagnostic and therapeutic plan appropriately</li> <li>To produce timely, complete and legible clinical records to include case-note records, handover notes and operation notes</li> <li>To prescribe, review and monitor appropriate therapeutic interventions relevant to clinical practice including non – medication based therapeutic and preventative indications</li> <li>To prioritise and organise clinical and clerical duties in order to optimise patient care</li> <li>To make appropriate clinical team resources</li> <li>To prioritise the patient's agenda encompassing their beliefs, concerns expectations and needs</li> <li>To understand that patient safety:</li> <li>To understand that patient safety depends on <ul> <li>Safe systems, individual competency and safe practice</li> <li>To understand the risks of treatments and to discuss these honestly and openly with patients</li> <li>To ensure that all staff are aware of risks and work together to minimise risk</li> </ul> </li> <li>To manage and control infection in patients, including: <ul> <li>Controlling the risk of cross-infection</li> <li>Appropriately managing infection in individual patients</li> <li>Working appropriately within the wider community to manage the risk posed by communicate within the wider communicate and work together is a patient within the wider community to manage the risk posed by communicable diseases</li> </ul></li></ul>	Area 4.1

Knowledge	Patient assessment	Area 4.1
	Knows likely causes and risk factors for conditions relevant to mode of	
	presentation	
	<ul> <li>Understands the basis for clinical signs and the relevance of positive and negative abusis a signs</li> </ul>	
	physical signs Becognized constraints and limitations of physical examination	
	Recognises the role of a chaperone is appropriate or required	
	<ul> <li>Understands health needs of particular populations e.g. ethnic minorities</li> </ul>	
	<ul> <li>Recognises the impact of health beliefs, culture and ethnicity in presentations of physical and psychological conditions</li> </ul>	
	<ul> <li>Interprets history and clinical signs to generate hypothesis within context of</li> </ul>	
	clinical likelihood	
	<ul> <li>Understands the psychological component of disease and illness presentation</li> <li>Tests, refines and verifies hypotheses</li> </ul>	
	<ul> <li>Tests, refines and verifies hypotheses</li> <li>Develops problem list and action plan</li> </ul>	
	<ul> <li>Recognises how to use expert advice, clinical guidelines and algorithms</li> </ul>	
	<ul> <li>Recognises and appropriately responds to sources of information accessed by patients</li> </ul>	
	<ul> <li>Recognises the need to determine the best value and most effective treatment both for the individual patient and for a patient cohort</li> </ul>	
	Record keeping	
	<ul> <li>Understands local and national guidelines for the standards of clinical record keeping in all circumstances</li> </ul>	
	<ul> <li>Understands the importance of high guality and adequate clinical record keeping</li> </ul>	
	and relevance to patient safety and to litigation	
	Understands the primacy for confidentiality	
	Time Management	
	Understands that effective organisation is key to time management	
	Understands that some tasks are more urgent and/or more important than others	
	Understands the need to prioritise work according to urgency and importance     Maintaina facua an individual patient page while the paging multiple compating	
	<ul> <li>Maintains rocus on individual patient needs whilst balancing multiple competing pressures</li> </ul>	
	Outlines techniques for improving time management	
	Patient safety	
	Outlines the features of a safe working environment	
	Outlines the hazards of medical equipment in common use	
	<ul> <li>Understands principles of risk assessment and management</li> <li>Understand the components of safe working practice in the personal clinical and</li> </ul>	
	organisational settings	
	<ul> <li>Outlines local procedures and protocols for optimal practice e.g. GI bleed</li> </ul>	
	protocol, safe prescribing	
	Understands the investigation of significant events, serious untoward incidents	
	and near misses	
	Infection control	
	Understands the principles of infection control	
	Understands the principles of preventing infection in high risk groups	
Skills	Patient assessment	Area 4.1
	• Takes a history from a patient with appropriate use of standardised questionnaires	
	and with appropriate input from other parties including family members, carers	
	and other health projessionals	
	targeted and time efficient and which actively elicits important clinical findings	
	Gives adequate time for patients and carers to express their beliefs ideas.	
	concerns and expectations	

- Responds to questions honestly and seeks advice if unable to answer
- Develops a self-management plan with the patient
- Encourages patients to voice their preferences and personal choices about their care

### Clinical reasoning

- Interprets clinical features, their reliability and relevance to clinical scenarios including recognition of the breadth of presentation of common disorders
- Incorporates an understanding of the psychological and social elements of clinical scenarios into decision making through a robust process of clinical reasoning
- Recognises critical illness and respond with due urgency
- Generates plausible hypothesis(es) following patient assessment
- Constructs a concise and applicable problem list using available information
- Constructs an appropriate management plan in conjunction with the patient, carers and other members of the clinical team and communicate this effectively to the patient, parents and carers where relevant

#### Record keeping

- Produces legible, timely and comprehensive clinical notes relevant to the setting
- Formulates and implements care plans appropriate to the clinical situation, in collaboration with members of an interdisciplinary team, incorporating assessment, investigation, treatment and continuing care
- Presents well documented assessments and recommendations in written and/or verbal form

#### Time management

- Identifies clinical and clerical tasks requiring attention or predicted to arise
- Groups together tasks when this will be the most effective way of working
- Organises, prioritises and manages both team members and workload effectively and flexibly

## Patient safety

- Recognises and practises within limits of own professional competence
- Recognises when a patient is not responding to treatment, reassess the situation, and encourage others to do so
- Ensures the correct and safe use of medical equipment
- Improves patients' and colleagues' understanding of the side effects and contraindications of therapeutic intervention
- Sensitively counsels a colleague following a significant untoward event or near incident, to encourage improvement in practice of the individual and of the unit
- Recognises and responds to the manifestations of a patient's deterioration or lack of improvement (symptoms, signs, observations, and laboratory results) and supports other members of the team to act similarly

#### Infection control

- Recognises the potential for infection within patients being cared for
- Counsels patients on matters of infection risk, transmission and control
- Actively engages in local infection control procedures
- Prescribes antibiotics according to local guidelines and works with microbiological services where appropriate
- Recognises potential for cross-infection in clinical settings
- Practises aseptic technique whenever relevant

Behaviour	<ul> <li>Shows respect and behaves in accordance with Good Medical Practice</li> <li>Ensures that patient assessment, whilst clinically appropriate considers social, cultural and religious boundaries</li> <li>Supports patient self-management</li> <li>Recognises the duty of the medical professional to act as a patient advocate</li> <li>Is able to work flexibly and deal with tasks in an effective and efficient fashion</li> <li>Remains calm in stressful or high pressure situations and adopts a timely, rational approach</li> <li>Shows willingness to discuss intelligibly with a patient the notion and difficulties of prediction of future events, and benefit/risk balance of therapeutic intervention</li> <li>Shows willingness to adapt and adjust approaches according to the beliefs and preferences of the patient and/or carers</li> <li>Is willing to facilitate patient choice</li> <li>Demonstrates ability to identify one's own biases and inconsistencies in clinical reasoning</li> <li>Continues to maintain a high level of safety awareness and consciousness</li> <li>Encourages feedback from all members of the team on safety issues</li> <li>Reports serious untoward incidents and near misses and co-operates with the investigation of the same</li> <li>Shows willingness to take action when concerns are raised about performance of members of the healthcare team, and acts appropriately when these concerns are voiced to you by others</li> <li>Continues to be aware of one's own limitations, and operates within them</li> <li>Encourages all staff, patients and relatives to observe infection control principles</li> <li>Recognises the risk of personal ill-health as a risk to patients and colleagues in addition to its effect on performance</li> </ul>	Area 4.1
Examples	Patient assessment	Area 4.1
and	Undertakes patient assessment (including history and examination) under difficult	
descriptors	circumstances. Examples include:	
candidates	<ul> <li>Limited time available (emergency situations, outpatients, ward referral)</li> <li>Severely ill patients</li> </ul>	
bundladoo	<ul> <li>Angry or distressed patients or relatives</li> </ul>	
	<ul> <li>Uses and interprets findings adjuncts to basic examination appropriately e.g. electrocardiography, spirometry, ankle brachial pressure index, fundoscopy,</li> </ul>	
	sigmoidoscopy	
	<ul> <li>Recognises and deals with complex situations of communication, accommodates disparate people and develops strategies to comp</li> </ul>	
	<ul> <li>Is sensitive to patients cultural concerns and norms</li> </ul>	
	<ul> <li>Is able to explain diagnoses and medical procedures in ways that enable patients</li> </ul>	
	understand and make decisions about their own health care.	
	Clinical reasoning	
	<ul> <li>In a complex case, develops a provisional diagnosis and a differential diagnosis on the basis of the clinical evidence, institutes an appropriate investigative and therapeutic plan, seeks appropriate support from others and takes account of the</li> </ul>	
	patients wishes	
	Record keeping	
	<ul> <li>Produces comprehensive, focused and informative records which summarise complex cases accurately</li> </ul>	
	Time management	
	Organises, prioritises and manages daily work efficiently and effectively	
	Works with, guides, supervises and supports junior colleagues	
	<ul> <li>Starts to lead and direct the clinical team in an effective fashion</li> </ul>	
	Patient safety	
	Leads team discussion on risk assessment, risk management, clinical incidents     Works to make appropriational aboration that will be the structure state and improve state	
	<ul> <li>Promotes patients safety to more junior colleagues</li> </ul>	

<ul> <li>Recognises and reports untoward or significant events</li> <li>Undertakes a root cause analysis</li> <li>Shows support for junior colleagues who are involved in untoward events</li> </ul>	
<ul> <li>Infection control</li> <li>Performs complex clinical procedures whilst maintaining full aseptic precautions</li> <li>Manages complex cases effectively in collaboration with infection control specialists</li> </ul>	

		Mapping to Leadership Curriculum
Category	<ul> <li>Being a Good Communicator</li> <li>To include:</li> <li>Communication with patients (GMP Domains: 1, 3, 4)</li> <li>Breaking bad news (GMP Domains: 1, 3, 4)</li> <li>Communication with colleagues (GMP Domains: 1, 3)</li> </ul>	N/A
Objective	<ul> <li>Communication with patients         <ul> <li>To establish a doctor/patient relationship characterised by understanding, trust, respect, empathy and confidentiality</li> <li>To communicate effectively by listening to patients, asking for and respecting their views about their health and responding to their concerns and preferences</li> <li>To cooperate effectively with healthcare professionals involved in patient care</li> <li>To provide appropriate and timely information to patients and their families</li> </ul> </li> <li>Breaking bad news         <ul> <li>To deliver bad news according to the needs of individual patients</li> </ul> </li> <li>Communication with colleagues         <ul> <li>To recognise and accept the responsibilities and role of the doctor in relation to other healthcare professionals</li> <li>To communicate succinctly and effectively with other professionals as appropriate</li> </ul> </li> </ul>	
Knowledge	<ul> <li>Communication with patients         <ul> <li>Understands questioning and listening techniques</li> <li>Understands that poor communication is a cause of complaints/ litigation</li> </ul> </li> <li>Breaking bad news         <ul> <li>In delivering bad news understands that:                 <ul> <li>The delivery of bad news affects the relationship with the patient</li> <li>Patients have different responses to bad news</li> <li>Bad news is confidential but the patient may wish to be accompanied</li> <li>Once the news is given, patients are unlikely to take in anything else</li> <li>Breaking bad news can be extremely stressful for both parties</li> <li>It is important to prepare for breaking bad news</li> </ul> </li> </ul> </li> </ul>	

	<ul> <li>Understands the importance of working with colleagues, in particular:         <ul> <li>The roles played by all members of a multi-disciplinary team</li> <li>The features of good team dynamics</li> <li>The principles of effective inter-professional collaboration</li> <li>The principles of confidentiality</li> </ul> </li> </ul>	
Skills	<ul> <li>Communication with patients</li> <li>Establishes a rapport with the patient and any relevant others (e.g. carers)</li> <li>Listens actively and questions sensitively to guide the patient and to clarify information</li> <li>Identifies and manages communication barriers, tailoring language to the individual patient and others and using interpreters when indicated</li> <li>Delivers information compassionately, being alert to and managing their and your emotional response (anxiety, antipathy, etc.)</li> <li>Uses and refers patients to appropriate written and other evidence based information sources</li> <li>Checks the patient's understanding, ensuring that all their concerns/questions have been covered</li> <li>Makes accurate contemporaneous records of the discussion</li> <li>Manages follow-up effectively and safely utilising a varieties of methods (e.g. phone call, email, letter)</li> <li>Ensures appropriate referral and communications with other healthcare professional resulting from the consultation are made accurately and in a timely manner</li> </ul>	
	<ul> <li>Breaking bad news</li> <li>Demonstrates to others good practice in breaking bad news</li> <li>Recognises the impact of the bad news on the patient, carer, supporters, staff members and self</li> <li>Acts with empathy, honesty and sensitivity avoiding undue optimism or pessimism</li> <li>Communication with colleagues</li> <li>Communicates with colleagues accurately, clearly and promptly</li> <li>Utilises the expertise of the whole multi-disciplinary team</li> <li>Participates in, and co-ordinates, an effective hospital at night or hospital out of hours team</li> <li>Communicates effectively with administrative bodies and support organisations</li> <li>Prevents and resolves conflict and enhance collaboration</li> </ul>	
Behaviour	<ul> <li>Communication with patients</li> <li>Approaches the situation with courtesy, empathy, compassion and professionalism</li> <li>Demonstrates an inclusive and patient centred approach with respect for the diversity of values in patients, carers and colleagues</li> <li>Breaking bad news</li> <li>Behaves with respect, honest and empathy when breaking bad news</li> <li>Respects the different ways people react to bad news</li> <li>Communication with colleagues</li> <li>Is aware of the importance of, and take part in, multi-disciplinary teamwork, including adoption of a leadership role</li> <li>Fosters an environment that supports open and transparent communication between team members</li> <li>Ensures confidentiality is maintained during communication with the team</li> <li>Is prepared to accept additional duties in situations of unavoidable and unpredictable absence of colleagues</li> <li>Acts appropriately on any concerns about own or colleague's health e.g. use of alcohol and/or other drugs</li> </ul>	

Examples and descriptors for candidates	<ul> <li>Shows mastery of patient communication in all situations, anticipating and managing any difficulties which may occur</li> <li>Is able to break bad news in both unexpected and planned settings</li> <li>Fully recognises the role of, and communicates appropriately with, all relevant team members</li> <li>Predicts and manages conflict between members of the healthcare team</li> <li>Begins to take leadership role as appropriate, fully respecting the skills, responsibilities and viewpoints of all team members</li> </ul>	
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		Mapping to Leadership Curriculum
Category	Teaching and Training (GMP Domains: 1, 3)	N/A
Objective	<ul> <li>To teach to a variety of different audiences in a variety of different ways</li> <li>To assess the quality of the teaching</li> <li>To train a variety of different trainees in a variety of different ways</li> <li>To plan and deliver a training programme with appropriate assessments</li> </ul>	
Knowledge	<ul> <li>Understands relevant educational theory and principles relevant to medical education</li> <li>Understands learning methods and effective learning objectives and outcomes</li> <li>Differentiates between appraisal, assessment and performance review</li> <li>Understands the appropriate course of action to assist a trainee in difficulty</li> </ul>	
Skills	<ul> <li>Critically evaluates relevant educational literature</li> <li>Varies teaching format and stimulus, appropriate to situation and subject</li> <li>Provides effective feedback and promote reflection</li> <li>Delivers effective lecture, presentation, small group and bed side teaching sessions</li> <li>Participates in patient education</li> <li>Leads departmental teaching programmes including journal clubs</li> <li>Recognises the trainee in difficulty and takes appropriate action</li> <li>Is able to identify and plan learning activities in the workplace</li> </ul>	
Behaviour	<ul> <li>In discharging educational duties, respects the dignity and safety of patients at all times</li> <li>Recognises the importance of the role of the physician as an educator</li> <li>Balances the needs of service delivery with education</li> <li>Demonstrates willingness to teach trainees and other health workers</li> <li>Demonstrates consideration for learners</li> <li>Acts to ensure equality of opportunity for students, trainees, staff and professional colleagues</li> <li>Encourages discussions with colleagues in clinical settings to share understanding</li> <li>Maintains honesty, empathy and objectivity during appraisal and assessment</li> </ul>	
Examples and descriptors for candidates	<ul> <li>Performs a workplace based assessment including giving appropriate feedback</li> <li>Appraises a medical student, nurse or colleague</li> <li>Acts as a mentor to a medical student, nurse or colleague</li> <li>Plans, develops and delivers educational programmes with clear objectives and outcomes</li> <li>Plans, develops and delivers an assessment programme to support educational activities</li> </ul>	

		Mapping to Leadership Curriculum
Category	<ul> <li>Keeping up to Date and Understanding how to Analyse Information To include:</li> <li>Ethical research (GMP Domains: 1)</li> <li>Evidence and guidelines (GMP Domains: 1)</li> <li>Audit (GMP Domains: 1, 2)</li> <li>Personal development</li> </ul>	Area 1.3
Objective	<ul> <li>To understand the results of research as they relate to medical practice</li> <li>To participate in medical research</li> <li>To use current best evidence in making decisions about the care of patients</li> <li>To construct evidence based guidelines and protocols</li> <li>To complete an audit of clinical practice</li> <li>To actively seek opportunities for personal development</li> <li>To participate in continuous professional development activities</li> </ul>	Area 1.3
Knowledge	<ul> <li>Understands the principles of research governance</li> <li>Understands research methodology including qualitative, quantitative, bio- statistical and epidemiological research methods</li> <li>Understands the application of statistics as applied to medical practice</li> <li>Outlines sources of research funding</li> <li>Understands the principles of critical appraisal</li> <li>Understands levels of evidence and quality of evidence</li> <li>Understands the different methods of obtaining data for audit</li> <li>Understands the role of audit in improving patient care and risk management</li> <li>Understands the working and uses of national and local databases used for audit such as specialty data collection systems, cancer registries, etc.</li> <li>Demonstrates knowledge of the importance of best practice, transparency and consistency</li> </ul>	Area 1.3
Skills	<ul> <li>Develops critical appraisal skills and applies these when reading literature</li> <li>Devises a simple plan to test a hypothesis</li> <li>Demonstrates the ability to write a scientific paper</li> <li>Obtains appropriate ethical research approval</li> <li>Uses literature databases</li> <li>Contributes to the construction, review and updating of local (and national) guidelines of good practice using the principles of evidence based medicine</li> <li>Designs, implements and completes audit cycles</li> <li>Contributes to local and national audit projects as appropriate</li> <li>Uses a reflective approach to practice with an ability to learn from previous experience</li> <li>Uses assessment, appraisal, complaints and other feedback to discuss and develop an understanding of own development needs</li> </ul>	Area 1.3
Behaviour	<ul> <li>Follows guidelines on ethical conduct in research and consent for research</li> <li>Keeps up to date with national reviews and guidelines of practice</li> <li>Aims for best clinical practice at all times, responding to evidence based medicine while recognising the occasional need to practise outside clinical guidelines</li> <li>Recognises the need for audit in clinical practice to promote standard setting and quality assurance</li> <li>Is prepared to accept responsibility</li> <li>Shows commitment to continuing professional development</li> </ul>	Area 1.3

changes needed for improvement, implementation of findings and re-audit to assess the effectiveness of the changes	Examples and descriptors for candidates	• • • •	Demonstrates critical appraisal skills in relation to the published literature Demonstrates ability to apply for appropriate ethical research approval Demonstrates knowledge of research organisation and funding sources Demonstrates ability to write a scientific paper Leads in a departmental or other local journal club Contributes to the development of local or national clinical guidelines or protocols Organises or leads a departmental audit meeting Leads a complete clinical audit cycle including development of conclusions, the	Area 1.3
Seeks opportunity to visit other departments and learn from other professionals		•	Leads a complete clinical audit cycle including development of conclusions, the changes needed for improvement, implementation of findings and re-audit to assess the effectiveness of the changes Seeks opportunity to visit other departments and learn from other professionals	

		Mapping to Leadership Curriculum
Sub- category:	<ul> <li>Manager To include:</li> <li>Self awareness and self management (GMP Domains: 1)</li> <li>Team-working (GMP Domains: 1, 3)</li> <li>Leadership (GMP Domains: 1, 2, 3)</li> <li>Principles of quality and safety improvement (GMP Domains: 1, 3, 4)</li> <li>Management and health service structure (GMP Domains: 1)</li> </ul>	Area 1.1 and 1.2 Area 2 Area 3 Area 4.2, 4.3, 4.4
Objective	<ul> <li>Self awareness and self management</li> <li>To recognise and articulate one's own values and principles, appreciating how these may differ from those of others</li> <li>To identify one's own strengths, limitations, and the impact of one's behavior</li> <li>To identify one's own emotions and prejudices and understand how these can affect one's judgment and behaviour</li> <li>To obtain, value and act on feedback from a variety of sources</li> <li>To manage the impact of emotions on behaviour and actions</li> <li>To be reliable in fulfilling responsibilities and commitments to a consistently high standard</li> <li>To ensure that plans and actions are flexible, and take into account the needs and requirements of others</li> <li>To jalan workload and activities to fulfill work requirements and commitments with regard to one's personal health</li> <li>Team working</li> <li>To identify opportunities where working with others can bring added benefits</li> <li>To work well in a variety of different teams and team settings by listening to others, encouraging others, managing differences of opinion, adopting a team approach</li> <li>Leadership</li> <li>To identify contexts for change</li> <li>To identify contexts for change</li> <li>To apply knowledge and evidence to produce an evidence based challenge to systems and processes</li> <li>To make decisions by integrating values with evidence</li> <li>To evaluate the impact of change and take corrective action where necessary</li> <li>Principles of quality and safety improvement</li> </ul>	Area 1.1 and 1.2 Area 2 Area 3 Area 4.2, 4.3 and 4.4 Area 5
	<ul> <li>Frinciples of quality and safety improvement</li> <li>To recognise the desirability of monitoring performance, learning from mistakes and adopting a no blame culture in order to ensure high standards of care and optimise patient safety</li> </ul>	

	To critically evaluate services	
	<ul> <li>To identify where services can be improved</li> </ul>	
	<ul> <li>To support and facilitate innovative service improvement</li> </ul>	
	Management and health carvies outure	
	To organise a task where several competing priorities may be involved	
	<ul> <li>To actively contribute to plans which achieve service goals</li> </ul>	
	<ul> <li>To manage resources effectively and safely</li> </ul>	
	To manage people effectively and safely	
	<ul> <li>To manage performance of themselves and others</li> </ul>	
	<ul> <li>To understand the management of local healthcare systems in order to be able to</li> </ul>	
	participate fully in managing healthcare provision	
Knowledge	Self awareness and self management	Areas 1.1 and
	• Demonstrates knowledge of ways in which individual behaviours impact on others;	1.2
	Demonstrates knowledge of personality types, group dynamics, learning styles,	
	leadership styles	Area 4.2, 4.3,
	<ul> <li>Demonstrates knowledge of methods of obtaining feedback from others</li> </ul>	4.4
	<ul> <li>Demonstrates knowledge of tools and techniques for managing stress</li> </ul>	
	Demonstrates knowledge of the role and responsibility of occupational health and	
	other support networks	
	Demonstrates knowledge of the limitations of self professional competence	
	Team working	
	Cutting	
	<ul> <li>Outlines the components of enective collaboration and team working</li> <li>Demonstrates knowledge of specific techniques and methods that facilitate</li> </ul>	
	effective and empathetic communication	
	<ul> <li>Demonstrates knowledge of techniques to facilitate and resolve conflict</li> </ul>	
	<ul> <li>Describes the roles and responsibilities of members of the multidisciplinary team</li> </ul>	
	<ul> <li>Outlines factors adversely affecting a doctor's and team performance and</li> </ul>	
	methods to rectify these	
	Demonstrates knowledge of different leadership styles	
	Leadership	
	<ul> <li>Demonstrates knowledge of patient outcome reporting systems within surgery,</li> </ul>	
	and the organisation and now these relate to national programmes.	
	<ul> <li>Understands now decisions are made by individuals, teams and the organisation</li> <li>Understands effective communication strategies within organisations</li> </ul>	
	Orderstands effective communication strategies within organisations     Demonstrates knowledge of impact mapping of convice change, barriers to	
	<ul> <li>Demonstrates knowledge of impact mapping of service change, partients to change, gualitative methods to gather the experience of patients and carers</li> </ul>	
	change, qualitative methods to gather the experience of patients and carers	
	Quality and safety improvement	
	Understands the elements of clinical governance and its relevance to clinical care	
	Understandss significant event reporting systems relevant to surgery	
	<ul> <li>Understands the importance of evidence-based practice in relation to clinical</li> </ul>	
	effectiveness	
	Understands risks associated with the surgery including mechanisms to reduce	
	risk	
	Utilines the use of patient early warning systems to detect clinical deterioration	
	<ul> <li>Keeps abreast or national patient safety initiatives</li> </ul>	
	<ul> <li>Onderstands quality improvement methodologies including teedback from patients, public and staff</li> </ul>	
	<ul> <li>Understands the role of audit research auidelines and standard setting in</li> </ul>	
	improving guality of care	
	<ul> <li>Understands methodology of creating solutions for service improvement</li> </ul>	
	Understands the implications of change	
	Management	
	Understands the structure and function of healthcare systems as they apply to	
	surgery basic management techniques	
	Understands basic management techniques	

Skills	Self awareness and self management	Area 1.2 and
	• Demonstrates the ability to maintain and routinely practise critical self awareness,	1.2
	including able to discuss strengths and weaknesses with supervisor, recognising	Area 2
	external influences and changing benaviour accordingly	Area Z
	<ul> <li>Demonstrates the ability to show awareness of and sensitivity to the way in which cultural and religious beliefs affect approaches and decisions, and to respond</li> </ul>	Area 3
	respectfully	
	Demonstrates the ability to recognise the manifestations of stress on self and	Area 4.2, 4.3,
	others and know where and when to look for support	4.4
	<ul> <li>Demonstrates the ability to balance personal and professional roles and</li> </ul>	Area 5
	responsibilities, prioritise tasks, naving realistic expectations of what can be	Alca J
	completed by sell and others	
	Team working	
	<ul> <li>Prepares patient lists with clarification of problems and ongoing care plan</li> </ul>	
	<ul> <li>Prepares detailed hand over between shifts and areas of care</li> </ul>	
	Communicates effectively in the resolution of conflict, providing feedback	
	<ul> <li>Develops effective working relationships with colleagues within the multidiscipline or c</li> </ul>	
	team	
	<ul> <li>Demonstrates leadership and management in the following areas:</li> </ul>	
	<ul> <li>Education and training of junior colleagues and other members of the</li> </ul>	
	team	
	<ul> <li>Deteriorating performance of colleagues (e.g. stress, fatigue)</li> </ul>	
	<ul> <li>Effective handover of care between shifts and teams</li> </ul>	
	Leads and participates in interdisciplinary team meetings	
	<ul> <li>Provides appropriate supervision to less experienced colleagues</li> <li>In able to propert tasks which pand to be completed to a deadline.</li> </ul>	
	• Is able to prepare tasks which need to be completed to a deadline	
	Leadership	
	<ul> <li>Identifies trends, future options and strategy relevant to surgery</li> </ul>	
	<ul> <li>Compares and benchmarks healthcare services</li> </ul>	
	<ul> <li>Uses a broad range of scientific and policy publications relating to delivering</li> </ul>	
	healthcare services	
	<ul> <li>Prepares for meetings by reading agendas, understanding minutes, action points and background research on agenda items</li> </ul>	
	<ul> <li>Works collegiately and collaboratively with a wide range of people outside the</li> </ul>	
	immediate clinical setting	
	• Evaluates outcomes and re-assesses the solutions through research, audit and	
	quality assurance activities	
	Understands the wider impact of implementing change in healthcare provision and	
	the potential for opportunity costs	
	Quality and safety improvement	
	<ul> <li>Adopts strategies to reduce risk e.g. safe surgery</li> </ul>	
	<ul> <li>Contributes to quality improvement processes e.g.</li> </ul>	
	<ul> <li>Audit of personal and departmental performance</li> </ul>	
	<ul> <li>Errors / discrepancy meetings</li> </ul>	
	<ul> <li>Critical incident and near miss reporting</li> <li>Unit morbidity and mortality montings</li> </ul>	
	$\circ$ Local and national databases	
	Maintains a personal portfolio of information and evidence	
	<ul> <li>Creatively questions existing practice in order to improve service and propose</li> </ul>	
	solutions	
	Menonement and boolth consists at water a	
	Ivianagement and nearn service structures	
	Initiality and implements protocols and quidelines	
	Participates in managerial meetings	
	<ul> <li>Takes an active role in promoting the best use of healthcare resources</li> </ul>	

	<ul> <li>Works with stakeholders to create and sustain a patient-centred service</li> <li>Employs new technologies appropriately, including information technology</li> <li>Conducts an assessment of the community needs for specific health improvement</li> </ul>	
	measures	
Behaviour	<ul> <li>Self awareness and self management</li> <li>Adopts a patient-focused approach to decisions that acknowledges the right, values and strengths of patients and the public</li> </ul>	Area 1.1 and 1.2
	<ul> <li>Recognises and shows respect for diversity and differences in others</li> <li>Is conscientious, able to manage time and delegate</li> </ul>	Area 2
	<ul> <li>Recognises personal health as an important issue</li> </ul>	Area 3
	<ul> <li>Team working</li> <li>Encourages an open environment to foster and explore concerns and issues</li> </ul>	Area 4.2, 4.3, 4.4
	<ul> <li>about the functioning and safety of team working</li> <li>Recognises limits of own professional competence and only practise within these</li> <li>Recognises and respects the skills and expertise of others</li> <li>Recognises and respects the request for a second opinion</li> <li>Recognises the importance of induction for new members of a team</li> <li>Recognises the importance of prompt and accurate information sharing with a patient's own doctors following hospital discharge</li> </ul>	Area 5
	<ul> <li>Leadership</li> <li>Demonstrates compliance with national guidelines that influence healthcare provision</li> <li>Articulates strategic ideas and uses effective influencing skills</li> <li>Understands issues and potential solutions before acting</li> <li>Appreciates the importance of involving the public and communities in developing health services</li> <li>Participates in decision making processes beyond the immediate clinical care setting</li> <li>Demonstrates commitment to implementing proven improvements in clinical practice and services</li> <li>Obtains the evidence base before declaring effectiveness of changes</li> <li>Quality and safety improvement</li> <li>Participates in safety improvement strategies such as critical incident reporting</li> <li>Develops reflection in order to achieve insight into own professional practice</li> </ul>	
	<ul> <li>Demonstrates personal commitment to improve own performance in the light of feedback and assessment</li> <li>Engages with an open no blame culture</li> <li>Responds positively to outcomes of audit and quality improvement</li> <li>Co-operates with changes necessary to improve service quality and safety</li> </ul>	
	<ul> <li>Management and health service structures</li> <li>Recognises the importance of equitable allocation of healthcare resources</li> <li>Recognises the role of doctors as active participants in healthcare systems</li> <li>Responds appropriately to own health service objectives and targets and takes part in the development of services</li> <li>Recognises the role of patients and carers as active participants in healthcare systems and service planning</li> <li>Shows willingness to improve managerial skills (e.g. management courses) and engages in management of the service</li> </ul>	
Examples and descriptors	<ul> <li>Self awareness and self management</li> <li>Participates in case conferences as part of multidisciplinary and multi agency team</li> <li>Responds to service pressures in a responsible and considered way</li> </ul>	Area 1.1 and 1.2
for candidates	Liaises with colleagues in the planning and implementation of work rotas	Area 2
	<ul> <li>Team working</li> <li>Discusses problems within a team and provides an analysis and plan for change</li> </ul>	Area 3

•	Works well in a variety of different teams	
•	Shows the leadership skills necessary to lead the multidisciplinary team	Area 4.2, 4.3,
•	Begins to lead multidisciplinary team meetings	4.4
	<ul> <li>Promotes contribution from all team members</li> </ul>	
	<ul> <li>Fosters an atmosphere of collaboration</li> </ul>	Area 5
	<ul> <li>Ensures that team functioning is maintained at all times.</li> </ul>	
	<ul> <li>Recognises need for optimal team dynamics</li> </ul>	
	• Promotes conflict resolution	
•	Recognises situations in which others are better equipped to lead or where delegation is appropriate	
Le	adership	
	Shadows health service managers	
•	Attends multi-agency conferences	
•	Uses and interprets department's performance data and information to debate	
	services	
•	Participates in clinical committee structures within an organisation	
Q	uality and safety improvement	
•	Is able to define key elements of clinical governance	
•	Demonstrates personal and service performance	
•	Designs audit protocols and completes audit cycle	
•	Identifies areas for improvement and initiates improvement projects	
•	Supports and participates in the implementation of change	
•	Leads in review of patient safety issue	
•	Understands change management	
M	anagement and Health Care Structure	
•	Can describe in outline the roles of primary care, including general practice, public	
	nealth, community health, mental health, secondary and tertiary care services	
	within own healthcare system Derticipates fully in aliginal anding arrangements and other relevant less estivities	
	Participates fully in clinical couling analygements and other relevant local activities	
	service development	
•	Discusses the most recent guidance from the relevant local health regulatory	
	Describes the local structure for health services and how they relate to regional or	
	devolved administration structures	
•	Discusses funding allocation processes from central government in outline and	
	now that might impact on the local health organisation	

		Mapping to Leadership Curriculum
Category:	Promoting good health (GMP Domains: 1, 2, 3)	
Objective	<ul> <li>To demonstrate an understanding of the determinants of health and public policy in relation to individual patients</li> <li>To promote supporting people with long term conditions to self-care</li> <li>To develop the ability to work with individuals and communities to reduce levels of ill health and to remove inequalities in healthcare provision</li> <li>To promote self care</li> </ul>	N/A

Knowledge	<ul> <li>Understands guidance documents relevant to the support of self care</li> <li>Recognises the agencies that can provide care and support outwith the hospital</li> <li>Understands the factors which influence the incidence and prevalence of common conditions including psychological, biological, social, cultural and economic factors</li> <li>Understand the role of screening programmes</li> <li>Understands the possible positive and negative implications of health promotion activities</li> <li>Demonstrates knowledge of the determinants of health worldwide and strategies to influence policy relating to health issues</li> <li>Outlines the major causes of global morbidity and mortality and effective, affordable interventions to reduce these</li> </ul>	
Skills	<ul> <li>Adapts assessment and management accordingly to the patients social circumstances</li> <li>Assesses patients' ability to access various services in the health and social system and offer appropriate assistance</li> <li>Ensures appropriate equipment and devices are discussed and where appropriate puts the patient in touch with the relevant agency</li> <li>Facilitates access to appropriate training and skills to develop the patient's confidence and competence to self care</li> <li>Identifies opportunities to promote change in lifestyle and to prevent ill health</li> <li>Counsels patients appropriately on the benefits and risks of screening and health promotion activities</li> </ul>	
Behaviour	<ul> <li>Recognises the impact of long term conditions on the patient, family and friends</li> <li>Puts patients in touch with the relevant agency including the voluntary sector from where they can access support or equipment relevant to their care</li> <li>Shows willingness to maintain a close working relationship with other members of the multi-disciplinary team, primary and community care</li> <li>Recognises and respects the role of family, friends and carers in the management of the patient with a long term condition</li> <li>Encourages where appropriate screening to facilitate early intervention</li> </ul>	
Examples and descriptors for candidates	<ul> <li>Demonstrates awareness of management of long term conditions</li> <li>Develops management plans in partnership with the patient that are pertinent to the patient's long term condition</li> <li>Provides information to an individual about a screening programme offering specific guidance in relation to their personal health and circumstances concerning the factors that would affect the risks and benefits of screening to them as an individual</li> </ul>	

		Mapping to Leadership Curriculum
Category:	<ul> <li>Probity and Ethics</li> <li>To include:</li> <li>Acting with integrity</li> <li>Medical error</li> <li>Medical ethics and confidentiality (GMP Domains: 1, 2, 3, 4)</li> <li>Medical consent (GMP Domains: 1, 3, 4)</li> <li>Legal framework for medical practice (GMP Domains: 1, 2, 3)</li> </ul>	Area 1.4
Objective	<ul> <li>To uphold personal, professional ethics and values, taking into account the values of the organisation and the culture and beliefs of individuals</li> <li>To communicate openly, honestly and inclusively</li> </ul>	Area 1.4

	<ul> <li>To act as a positive role model in all aspects of communication</li> <li>To take appropriate action where ethics and values are compromised</li> <li>To recognise and respond to the causes of medical error</li> <li>To respond appropriately to complaints</li> <li>To know, understand and apply appropriately the principles, guidance and laws regarding medical ethics and confidentiality as they apply to surgery</li> <li>To understand the necessity of obtaining valid consent from the patient and how to obtain it</li> <li>To recognise, analyse and know how to deal with unprofessional behaviours in clinical practice, taking into account local and national regulations</li> <li>To understand ethical obligations to patients and colleagues</li> <li>To appreciate an obligation to be aware of personal good health</li> </ul>	
Knowledge	<ul> <li>Understands local complaints procedure</li> <li>Recognises factors likely to lead to complaints</li> <li>Understands the differences between system and individual errors</li> <li>Outlines the principles of an effective apology</li> <li>Knows and understands the professional, legal and ethical codes of own medical council and any other codes to which the physician is bound</li> <li>Understands the principles of medical ethics</li> <li>Understands the principles of confidentiality</li> <li>Understands the legal framework for patient consent in relation to medical practise</li> <li>Recognises the factors influencing ethical decision making including religion, personal and moral beliefs, cultural practices</li> <li>Understands the local standards of practice employed when deciding to withhold or withdraw life-prolonging treatment</li> <li>Understands the local legal framework and guidelines for taking and using informed consent for invasive procedures including issues of patient incapacity</li> </ul>	Area 1.4
Skills	<ul> <li>Recognises, analyses and knows how to deal with unprofessional behaviours in clinical practice taking into account local and national regulations</li> <li>Creates open and nondiscriminatory professional working relationships with colleague s and is aware of the need to prevent bullying and harassment</li> <li>Contributes to processes whereby complaints are reviewed and learned from</li> <li>Explains comprehensibly to the patient the events leading up to a medical error or serious untoward incident, and sources of support for patients and their relatives</li> <li>Delivers an appropriate apology and explanation relating to error</li> <li>Uses and shares information with the highest regard for confidentiality both within the team and in relation to patients</li> <li>Counsels patients, family, carers and advocates tactfully and effectively when making decisions about resuscitation status, and withholding or withdrawing treatment</li> <li>Presents all information to patients (and carers) in a format they understand, checking understanding and allowing time for reflection on the decision to give consent</li> <li>Provides a balanced view of all care options</li> <li>Applies the relevant legislation that relates to the health care system in order to guide one's clinical practice including reporting to the Coroner's/Procurator Officer (or local equivalent), the police or the proper officer of the local authority in relevant circumstances</li> <li>Is able to prepare appropriate medical legal statements for submission to any relevant legal proceedings</li> <li>Is prepared to present such material in Court</li> </ul>	Area 1.4
Behaviour	<ul> <li>Demonstrates acceptance of professional regulation</li> <li>Promotes professional attitudes and values</li> <li>Demonstrates probity and the willingness to be truthful and to admit errors</li> <li>Adopts behaviour likely to prevent causes for complaints</li> <li>Deals appropriately with concerned or dissatisfied patients or relatives</li> <li>Recognises the impact of complaints and medical error on staff, patients, and the</li> </ul>	Area 1.4
	<ul> <li>local health service</li> <li>Contributes to a fair and transparent culture around complaints and errors</li> <li>Recognises the rights of patients to make a complaint</li> <li>Identifies sources of help and support for patients and yourself when a complaint is made about yourself or a colleague</li> <li>Shows willingness to seek advice of peers, legal bodies, and the local medical council in the event of ethical dilemmas over disclosure and confidentiality</li> <li>Shares patient information as appropriate, taking into account the wishes of the patient</li> <li>Shows willingness to seek the opinion of others when making decisions about resuscitation status, and withholding or withdrawing treatment</li> <li>Seeks and uses consent from patients for procedures that they are competent to perform while         <ul> <li>Respecting the patient's autonomy</li> <li>Respecting personal, moral or religious beliefs</li> <li>Not exceeding the scope of authority given by the patient</li> <li>Seeks a second opinion, senior opinion, and legal advice in difficult situations of consent or capacity</li> </ul> </li> <li>Shows willingness to seek advice from the employer, appropriate legal bodies (including defence societies), and the local medical council on medico-legal matters</li> </ul>	
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Examples and descriptors for candidates	<ul> <li>Recognises and responds to both system failure and individual error</li> <li>Provides timely accurate written responses to complaints when required</li> <li>Counsels patients on the need for information distribution within members of the immediate healthcare team</li> <li>Seeks patients' consent for disclosure of identifiable information</li> <li>Discusses with patients with whom they would like information about their health to be shared</li> <li>Understands the importance the possible need for ethical approval when patient information is to be used for any purpose</li> <li>Understands the difference between confidentiality and anonymity</li> <li>Knows the process for gaining ethical approval for research</li> <li>Is able to assume a full role in making and implementing decisions about resuscitation status and withholding or withdrawing treatment</li> <li>Is able to support decision making on behalf of those who are not competent to make decisions about their own care</li> <li>Obtains consent for interventions that he/she is competent to undertake, even when there are communication difficulties</li> <li>Identifies situations where medical legal issues may be relevant</li> <li>Works with external bodies around cases that should be reported to them</li> <li>Collaborating with external bodies by preparing and presenting reports as required</li> </ul>	