The Intercollegiate Surgical Curriculum

Educating the surgeons of the future

General Surgery syllabus

August 2010

ISCP INTERCOLLEGIATE SURGICAL CURRICULUM PROGRAMME

The Syllabus for General Surgery

Overview and objectives of the General Surgery curriculum

Trainees in general surgery will undergo core training (CT1-2/3) followed by a period of 6 indicative years of specialty training (ST3- ST8). The purpose of the curriculum is to train general surgeons who will be able to work independently and to the standard of a consultant with a general practise, such as one who works in a District General Hospital or equivalent setting. As such, most of their skills will relate to the management of “everyday” general elective and emergency general surgery and this forms the basis of the curriculum, with the competences, both non-operative and operative being completed by the final year of training. This curriculum also allows a degree of flexibility to respond to the changing needs of our patients and the development of new models of healthcare delivery, and to incorporate technological advances.

However, it is usual for general surgeons in such circumstances to develop a clinical area of special interest appropriate to the needs of the population and an additional objective of this curriculum is to provide some additional expertise in one or more areas of general surgery. The syllabus thus includes elective and emergency general surgery topics which need to be completed by all trainees to enable them to manage the conditions listed in the Scope and Standards of General Surgical Practice **Key Topics** and specialty topics which should be completed according to individual interests.

The Specialty of General Surgery

Introduction

General surgery is one of the two largest surgical specialties in the UK with 31% of the consultant surgical workforce.

During recent years and in common with many other disciplines there has been a trend towards further specialisation within the specialty. These are referred to as 'Areas of Special Interest' within general surgery as they do not have separate specialty advisory committees (SACs) within the Surgical Royal Colleges' structure.

A shared syllabus and the ability at the completion of training to manage an unselected surgical emergency 'take', provide a common purpose across the specialty of general surgery.

The major areas of special interest associated with the specialty of general surgery are as follows:

- Upper Gastrointestinal Surgery (Oesophagogastric and Hepatopancreaticobiliary)
- Colorectal surgery
- Vascular Surgery
- Transplantation (Renal, Hepatic and Pancreatic)
- Breast and Oncoplastic Surgery
- Endocrine Surgery

In addition to these clearly defined disease-based areas of special interest there are others that are less well developed within the syllabus but represent substantial areas of practice:

- Military Surgery
- General Surgery of Childhood
- Remote and Rural Surgery
- Academic Surgery

The variations in the scope of practices within the specialty are highly variable and largely shaped by local circumstances, the needs of the service, and the personal development of the surgeons delivering those services. All general surgeons are expected to have developed an area of special interest by the time they gain their CCT and some will then go on to practice exclusively in that discipline either straight away or as their individual careers develop.

There is also significant shared ('Interface') practice with other major specialties such as the head and neck specialties, urology and specialist paediatric surgery.

The configuration and delivery of general surgery services

The service comprises emergency and elective elements both of which require significant supporting infrastructure to deliver to modern standards.

The trend, therefore, has been to concentrate specialist services in centres serving a minimum of 500,000 population.

This model works well in cities and where there is rapid access to centralised services, but creates problems of access where the population is more thinly spread and communications less easy.

At the time of writing, hospitals serving populations of 120,000 upwards are able to provide a full general surgical emergency and elective service providing there are at least five consultant surgeons able to support the emergency rota and that they in turn are supported by neighbouring larger units and networking arrangements. Some highly specialised surgeons (eg breast, vascular, transplantation) may hold posts in which they are not responsible for general surgical emergencies. Vascular emergencies are increasingly dealt with by trained vascular surgeons, often by means of a regional clinical network.

The medical staff delivering general surgical services

These comprise Consultants, Trainees (Specialty trainees, Core surgical trainees, Foundation trainees) and Non-Consultant Career Grades Associate Specialists and Staff Grades).

Other grades supporting the delivery of the service include Surgical Assistants (surgical care practitioners) and specialist nurses.

Consultant surgeons have admitting rights for patients in the hospitals in which they work. Patients so admitted remain under their care at all times unless specific arrangements are made to devolve the care of those patients to another named consultant colleague.

Consultant general surgeons, while taking the responsibility for the care of their own patients, usually work as part of a larger team (e.g. Surgical Directorates, Multi-disciplinary teams) and in turn lead their own surgical teams.

Most, but not all, consultant surgeons will take on one or more of a number of training roles.

Other aspects of workforce disposition may be found on the appropriate sections of the Royal College and Specialty Association web sites.

Trainees who, for whatever reason, do not complete their training through to CCT level in UK training schemes may seek to take up a non-career grade post (SAS). The scope of practice will depend very much on the individual proficiencies and the specification of the post. Surgeons in such posts work under the direction of a named consultant(s) and are important members of the team.

Areas of special interest

Upper gastrointestinal surgery

Upper gastrointestinal surgery includes both hepatopancreaticobiliary and oesophagogastric surgery. Although the majority of this area of special interest involves treatment of patients with malignancy, it also encompasses benign conditions. These include surgery for gastrooesophageal reflux, anti-obesity surgery and surgery for complex benign biliary and pancreatic conditions.

Medium sized hospitals will have on staff general surgeons who offer an elective service that deals with most of the common conditions affecting the upper GI and biliary tract.

The service for the treatment of upper gastrointestinal tract cancers will mostly be based at the large hospitals and fall within the remit of the Multidisciplinary Team (MDT).

Within each region there will be one or two units providing a specialist service for oesophageal, hepatobiliary and pancreatic conditions.

For further information about both oesophagogastric and hepatopancreaticobiliary surgery please see the Association of Upper Gastrointestinal Surgery website at www.augis.org

Colorectal Surgery

Colorectal surgeons deal with diseases of small bowel, colon, rectum and anal canal. They work closely with medical gastroenterologists, radiologists and physiological measurement staff.

It is one of the areas of special interest encompassed by general surgery that carries the heaviest workload on account of the large numbers of patients suffering from large bowel cancer and the high proportion of patients who present as emergencies or requiring urgent treatment.

For this reason and the focus in recent years on the treatment of cancer there has been a rapid increase in the number of surgeons specialising in this area. Most medium sized district general hospitals will have several general surgeons on the staff who deal with the elective and urgent colorectal workload. Not all of these confine themselves to Coloproctology and many practice as general GI surgeons.

For further information about colorectal surgery please see the Association of Coloproctology of great Britain and Ireland website at www.acpgbi.org.uk.

General gastrointestinal surgery

Changes in the organisation of hospital services in the UK and Ireland have led to centralisation of subspecialist services in areas such as oesophagogastric and hepatopancreatico- biliary surgery. Highly subspecialised procedures in coloproctology have traditionally been performed in regional units. There remains a need, principally but not exclusively in medium sized and small hospitals, for more generally trained surgeons competent in the management of the common conditions of the gastrointestinal tract, both upper and lower. This pattern of subspecialisation is practised widely and is in demand in both NHS and private sectors.

In broad terms a General GI surgeon will be competent in:

- Upper GI surgery excluding resections for oesophagogastric and hepato-pancreatico-biliary cancer
- Coloproctology including colon cancer but not pouch surgery and sphincter repair
- Upper GI endoscopy
- Colonoscopy
- Laparoscopic surgery, including anti reflux procedures
- www.augis.org
- www.acpgbi.org.uk
- www.alsgbi.org

Transplantation

Kidney transplant surgeons are primarily responsible for deceased donor and living donor kidney transplantation, and vascular and peritoneal access.

Many will also care for emergencies and common elective surgical conditions that occur in patients with renal failure. There is close working within multi-professional teams in renal and transplant units.

Although some surgeons will provide a service purely in kidney transplantation and access, others will combine this with general surgery, another area of special interest such as vascular surgery, or liver/pancreas transplantation.

Liver transplant surgeons are primarily responsible for all aspects of liver transplantation. Some surgeons will be liver transplant surgeons who also undertake kidney/pancreas transplantation or hepatopancreaticobiliary surgery or have a major commitment to paediatric transplantation.

For further information about transplantation the reader is referred to the British Transplantation Society at www.bts.org.uk.

Vascular surgery

Vascular surgeons treat patients with peripheral vascular disease i.e. vascular disease affecting the vessels of the neck, trunk and limbs. It has become one of the most clearly defined areas of special interest within the domain of general surgery.

It is characterised by a high volume of urgent and emergency admissions and the requirement for an extensive supporting infra structure from interventional radiologists, cardiothoracic surgeons, cardiologists and ultrasonographers.

There is ongoing debate about the breadth of vascular practice and training which will include vascular medicine and radiology. The interface between the provision of vascular surgical services and renal transplantation, especially with regard to access for haemodialysis, has always been close and is likely to remain so.

For further information about Vascular Surgery in the UK the reader is referred to the Vascular Society at www.vascularsociety.org.uk.

Breast and Oncoplastic Surgery

Breast surgeons deal with patients with both benign and malignant breast disease. The small number of breast emergencies such as breast abscesses are managed initially by the on call general surgical team.

The breast surgeon is a key member of a multidisciplinary team engaged in the diagnosis and treatment of both symptomatic and screen detected cancers.

The majority of breast units are now able to offer breast reconstruction following cancer resection, either performed by general surgeons trained in reconstruction or in collaboration with a local plastic and reconstructive service.

For further information about the practice of Breast Surgery in the UK the reader is referred to the Association of Breast Surgery section at the British Association of Surgical Oncology www.baso.org.uk.

Endocrine surgery

Endocrine Surgeons treat patients with benign and malignant disease of the thyroid and parathyroid glands in conjunction with endocrinologists, renal physicians and oncologists as members of a local endocrine MDT.

A close working relationship with head and neck surgeons characterises the centres dealing with thyroid malignancies.

Adrenal and pancreatic endocrine surgery (both part of specialty training) are not within the remit of all endocrine surgeons. Local expertise and service configuration in individual centres (laparoscopic/HPB/urology) will dictate training opportunities and subsequent consultant practice.

For further information about the practice of Endocrine Surgery the reader is referred to the British Association of Thyroid and Endocrine Surgery (previously the British Association of Endocrine Surgeons at www.baes.info.

Military surgery

The military general surgeon provides the nonorthopaedic trauma service in war and on stable (peacekeeping) deployments. He or she also provides a general surgery service to deployed military and civilian personnel and occasionally to local civilians.
The usual minimum team on deployment is one consultant general surgeon, one consultant orthopaedic surgeon, two anaesthetists and a consultant physician. There is access to rapid evacuation for seriously ill or injured patients.

The military surgeon must have the full range of general surgical skills and normally maintains these skills as a consultant GI or vascular surgeon. In addition there is the requirement to be competent in managing nonorthopaedic trauma.

These skills cannot readily be gained in most UK surgical practice and therefore parallel training in trauma skills is developed and maintained throughout the career of the surgeon.

General surgery of childhood

Specialist paediatric surgical practice aspires to provide care for children and teenagers up to the age of their sixteenth birthday.

Some years ago the introduction of a requirement for all surgeons and anaesthetists practising in this area to have undergone formal training, led to a wholesale shift of paediatric surgical practice into the regional specialist paediatric surgical units.

It became apparent that this model is not universally appropriate and that there is a requirement for the local provision in medium and large hospitals of a service for
the general surgery of childhood delivered by properly trained surgeons and anaesthetists.

Much of the elective work of the general surgery of childhood comprises day case surgery and for the most part, emergency work comprises common emergency abdominal conditions such as appendicitis and urogenital tract e.g. torsion of the testicle.

Conditions of greater complexity are the preserve of Specialist Paediatric Surgeons and it is felt inappropriate to train general surgeons in this area. To date, the volume and complexity of the work involved in the general surgery of childhood has not been felt to merit designation as a circumscribed area of special interest, but increasingly Trusts are requiring specific expertise to be provided within the emergency rota and CPD for those providing elective paediatric surgical services.

Remote and rural surgery

A small number of surgeons practise in very remote areas such as the Scottish islands. These posts are generally in attractive areas of the country but the work is challenging.

Since other specialist help will not be readily available for emergency cases, particularly good judgement and a wide range of skills and expertise are required.

The maintenance of skills in the subspecialist areas of elective surgery can be difficult.

The range of surgery practised by an individual consultant varies depending on local needs and the skills of other staff.

Accident and emergency department cover is necessary in all posts and in some posts some orthopaedic trauma and elective urology is included.

Academic surgery

Academic surgery provides an exciting and challenging career for those who wish to combine clinical surgery with a major commitment to research and undergraduate teaching.

Trainees interested in this career pathway will, in addition to completing clinical training in general surgery (and developing an area of special interest), acquire a high level of competency in research (and teaching).

After completing their clinical training those committed to an academic career will pursue a position in a university department as senior lecturer with a longer-term view to promotion to a chair in surgery.

For further information on training in academic medicine the reader is referred to the following web addresses:

- www.mmc.nhs.uk/download/Medically-and-Dentally-Qualified-academic-staff-recommendations-Report.pdf
- www.asgbi.org.uk/consensus_statements/default.asp

The Scope and Practice of General Surgery at CCT

Consultants in the specialty of general surgery will be in possession of a CCT in general surgery. At the completion of surgical training a CCT holder will be competent to manage an unselected emergency surgical ‘take’ and will have a developed interest in one of the areas of special interest associated with general surgery.

The scope of practice and proficiencies will qualify the CCT holder to apply for a consultant post in the specialty, and thereafter to develop his/her practice in accordance with the specifications of the post and further personal development. Some will wish to maintain a broad portfolio of practice and emergency care; others may seek to practice exclusively in the area of special interest.

This list of Key Topics defines, in general terms the essential skills and levels of clinical expertise expected of a surgeon emerging from training having completed the surgical specialty CCT. It is unlikely that the expertise will be confined to the descriptions that follow as most surgeons will have developed additional interests and competencies (special interests) by the time that they emerge from training. There is flexibility within the curricula to accommodate this.

Where a surgical specialty encompasses formal areas of special interest that have their own syllabus requirements, these are expressed in lists that build on the core requirements of the basic CCT holder.

It should be understood that as a surgical career develops following CCT, the range and levels of expertise will change in response to the demands of the service, personal aspirations and the needs of patients.

Taking into account the present and future requirements of the service, the general surgeon emerging from training at CCT level will expect to see patients presenting with a range of problems. As it is used here, the term 'manage' equates to diagnosis, assessment and treatment or referral as appropriate. The levels of expertise expected are further expressed within the detail of the syllabus.

KEY TOPICS

At CCT, the general surgeon will be able to:

Elective General Surgery

1. Manage benign and malignant lesions of the skin and subcutaneous tissues:

* Recognise the common benign and malignant conditions, including sebaceous cyst, lipoma, neurofibroma, keratoacanthoma, basal cell carcinoma, squamous cell carcinoma and malignant melanoma
* Diagnose and excise, biopsy or treat conservatively these common lesions
* Able to apply straightforward plastic surgical techniques for primary wound closure
* Refer for specialist surgical and oncological opinion for further management as necessary

2. Manage primary and recurrent hernia of the abdominal wall:

* Competent to diagnose and manage patients presenting with primary and recurrent abdominal wall hernia including appropriate investigation as appropriate
* Competent to perform primary hernia repair selecting appropriate approach (open or laparoscopic)
* Competent to repair uncomplicated recurrent hernia involving other specialists as appropriate

3. Provide specialist surgical support in the management of conditions affecting the reticuloendothelial and haemopoetic systems:

* Competent to diagnose, assess and manage appropriately patients presenting with lymphadenopathy (including infective / inflammatory and neoplastic)
* Be familiar with indications for appropriate investigation in such situations, involving other specialists as appropriate
* Competent to excise, biopsy (open or needle) or drain lymph nodes

Emergency General Surgery

1. Manage infections of the skin and superficial tissues:

* Diagnose and manage from presentation to completion the common infections of the skin and superficial infections including abscess and cellulitis.
* Competent to modify management in the presence of comorbidity such as diabetes and vascular insufficiency
* Recognise and manage complicated skin infections including gas forming organisms and necrotising infections

2. Manage patients presenting with an acute abdomen:

* Competent to diagnose and manage patients presenting with an acute abdomen using appropriate investigations and supervise effective resuscitation
* Manage the patient presenting with peritonitis including acute appendicitis, acute cholecystitis, perforated viscus (peptic ulcer, diverticular disease), acute pancreatitis and acute presentations of gynaecological disease
* Manage the patient presenting with acute intestinal obstruction including small bowel obstruction (adhesional and strangulated abdominal wall hernia) and large bowel obstruction (neoplasm)
* Competent to perform exploratory laparotomy and treat cause of acute abdominal presentation appropriately

3. Manage acute GI haemorrhage:

* Be able to diagnose and manage the common causes of acute gastrointestinal haemorrhage and supervise effective resuscitation
* Recognise the indications for appropriate endoscopic and radiological investigation and intervention and refer or undertake appropriately
* Be familiar with the indications for surgical intervention and be competent to undertake appropriate procedures or refer onwards to other specialists if appropriate

4. Manage the patient with multiple injuries, including children:

* Assess and resuscitate the patient with multiple injuries in accordance with the ATLS standards current at the time
* Work appropriately as part of the trauma team, participating at a level appropriate to the situation either as member or leader.
* Conduct the initial management of blunt and penetrating injuries (including gun-shot and knife) calling in other expertise as necessary .
* Participate as an effective member of the major incident team as required.

5. Manage abdominal trauma

* Diagnose and manage the patient with abdominal trauma including splenic, hepatic and pancreatic injuries
* Able to manage appropriate investigation in such situations, involving other specialists as appropriate
* Competent to perform exploratory and damage limitation laparotomy including being familiar with surgery for haemoperitoneum
* Diagnose and manage the patient with possible injury to the urogenital tract, chest and vascular injury involving other specialists appropriately

Upper GI

1. Manage the patient presenting with upper gastrointestinal symptoms, including dysphagia and dyspepsia:

* Competent to diagnose and manage common presentations of upper gastrointestinal disorders including gastro-oesophageal reflux, hiatus hernia and peptic ulceration
* Competent to diagnose the common malignant conditions of the upper GI tract including oesophageal and gastric cancer
* Be familiar with investigation and principles of management of benign and malignant upper gastrointestinal disorders including referral onwards to specialist and oncology colleagues

2. Manage the patient presenting with symptoms referable to the biliary tract, including jaundice:

* Competent to diagnose and manage patients presenting with symptoms of gall-stone disease
* Competent to diagnose and assess patients presenting with jaundice including being familiar with endoscopic and radiological investigation

* Competent to diagnose and assess patients with malignant disorders including pancreatic cancer and hepatic metastases including referral onwards to specialist and oncology colleagues

Lower GI

1. Manage patients presenting with common benign anorectal disease:

* Recognise the common benign conditions of the anus, perineum and lower rectum including haemorrhoids, fissure, anal fistula, prolapse and pilonodal sinus
* Be familiar with the treatment of common benign anorectal conditions as outpatients or by appropriate surgery

2. Manage patients with symptoms of lower gastrointestinal disease such as change in bowel habit:

* Competent to diagnose and manage patients presenting with a change in bowel habit including diverticular disease and colorectal neoplasia
* Be able to manage appropriate radiological and endoscopic investigations involving other specialists as appropriate
* Be familiar with principles of management of benign and malignant lower gastrointestinal disorders including referral onwards to specialist and oncology colleagues

Breast Disease

Manage the patient presenting with common breast conditions:

* Be familiar with the common presentations of breast conditions including breast lump, pain, nipple discharge or infection / abscess
* Recognise the role of triple assessment including clinical examination, radiology (ultrasound, mammography) and pathology (cytology and histology; needle aspiration or biopsy)
* Be familiar with principles of management of benign and malignant breast disorders including referral onwards to specialist and oncology colleagues

Vascular Disease

1 Manage straightforward varicose veins:

* Competent to evaluate and manage patients with uncomplicated varicose veins including non-invasive investigations
* Able to treat either by outpatient techniques or by surgery

2. Recognise the acutely ischaemic limb:

* Able to recognise a patient presenting with an acutely ischaemic limb and initiate appropriate management
* Be familiar with appropriate investigations and principles of management

3. Manage abdominal aortic aneurismal disease

* Able to recognise a patient presenting with abdominal aortic aneurismal disease and initiate appropriate management
* Be familiar with appropriate investigations and principles of management

Endocrine

1. Understand the implications of endocrine and metabolic disorders for the management of general surgical patients
* Be familiar with appropriate investigations and principles of management

2. Manage the complications of thyroid and parathyroid surgery in the emergency setting

* Be familiar with appropriate investigations and principles of management of postoperative haemorrhage in the neck, hypocalcaemia, and thyroid storm

Transplantation

1. Principles of organ donation

* Be familiar with the criteria for the diagnosis of brain death
* Able to recognise the potential for organ donation and liase with specialist colleagues appropriately

2. Management of renal failure

* Competent to diagnose, assess and initially manage appropriately patients presenting with renal failure / anuria, involving other specialist colleagues as the situation requires
* Understand the indications for treatment with haemodialysis or peritoneal dialysis
* Competent to assess bladder function in those patients under consideration for renal transplantation

The general surgery trainee who has satisfactorily completed training will possess the professional skills associated with consultant surgical practice in the UK (including those outlined Good Medical Practice). This will include the ability to assess published evidence in relational to clinical practice and ability to teach others

Index Procedures

In general surgery these are generally groups of procedures which are common and and/or seen are representing important areas of technical expertise. In the trainee surgical logbook peer comparison graphs are produced for these procedures to give information about the amount of experience gained. The more common procedures are also used during assessment by Surgical Directly Observed Procedural Skills (Surgical DOPS) and Procedure Based Assessments (PBAs).

Breast

- Image guided surgery: Diagnostic /WLE
- Mastectomy
- Duct and nipple surgery
- Sentinel lymph node biopsy
- Axillary clearance
- Myocutaneous flaps
- Implant reconstruction
- Reduction mammoplasty

Coloproctology

- Anterior resection
- Colonoscopy *
- Fistula surgery
- Pouch surgery
- Segmental colectomy
- Surgical treatment of haemorrhoids

Endocrine

- Thyroidectomy
- Re-operative thyroid surgery

- Parathyroidectomy
- Adrenal surgery

General

- Hernia repair – all types
- Laparotomy for acute abdomen
- Blunt/penetrating abdominal trauma

Hepatopancreatobiliary

- Cholecystectomy (both laparoscopic and open)
- Exploration CBD
- Liver resection
- Pancreatic necrosectomy
- Pancreatic resection

Oesophagogastric

- Oesophago-gastro-duodenoscopy *
- Anti-reflux surgery (both laparoscopic and open)
- Gastrectomy
- Roux-en-Y reconstruction
- Oesophagogastrectomy

General Surgery of Childhood

- Laparotomy for acute abdomen
- Orchidopexy
- Paediatric circumcision/prepuceplasty
- Paediatric hernia/hydrocele

Transplant

- Kidney transplant
- Liver transplant-implantation of donor liver
- Liver transplant-recipient hepatectomy

Vascular

- Aortic aneurysm
    - Elective open repair tube graft
    - Elective open repair bifurcated graft
    - Endovascular repair
    - Ruptured aneurysm repair
- Carotid endarterectomy
- Infra-inguinal bypass
    - Above knee run-off
    - Below knee popliteal run off
    - Calf vessel run off
    - Popliteal artery exclusion bypass
- Emergency Lower Limb
    - Femoral Embolectomy
    - 4 compartment fasciotomy
    - Repair of false femoral artery aneurysm
- Upper Limb
    - Brachial artery embolectomy
- Re-do vascular surgery
    - Remove of infected graft

- Varicose vein surgery
    - Sapheno-femoral and sapheno-popliteal ligation.
    - Endovenous LSV and SSV ablation
    - Foam injection sclerotherapy
- Vascular access
- AV fistula at wrist, upper arm
- Revision of failed AV fistula

* Upper and lower gastrointestinal endoscopy competences will be consistent with the recommendations of the Joint Advisory Group on Gastrointestinal Endoscopy

Training In The Specialty Of General Surgery

The purposes of training in the specialty of general surgery

The purpose of training in the specialty of general surgery is to produce surgeons competent to work as consultant general surgeons in the UK.

This includes:

- Competence to manage patients presenting on an unselected emergency general surgical 'take', diagnosing, assessing and treating or referring on as appropriate.
- Competence in the management of patients presenting with a range of symptoms and elective conditions as specified in the core syllabus for the specialty of general surgery.
- Competence to manage specific conditions within one or more of the subspecialties of general surgery by virtue of appropriate training and assessment opportunities obtained during training.
- Professional competences as specified in the syllabus and derived from Good Medical Practice of the General Medical Council of the UK.

Stages of Training

The syllabus may be considered in 3 stages. Satisfactory completion of the initial (early years), intermediate and final stages will lead to the award of a CCT and the title of Consultant General Surgeon. Included are the areas of diagnosis, investigation, operative and non-operative management for and communication with those in his/her care. In addition, the programme should allow the trainee to develop generic skills that allow effective interaction with other professionals (clinical and non-clinical) involved in the delivery of health care to patients.

Initial stage
In the initial stage (early years training), the general surgery trainee may not have even decided upon a career in general surgery. They will undergo broad based surgical training, while being able to sample a range of surgical specialties. The objectives will be to attain the knowledge skills and behaviours required of all surgeons (i.e. the common competences), together with some initial competences relevant to the specialty of general surgery. At the end of this period of training, the trainee will have decided upon a career in General Surgery, and will seek to enter general surgery training.

Intermediate stage
In the Intermediate stage (ST3 & 4) emergency surgical experience is developed to enable the trainee to have a breadth of experience of the common surgical emergencies as well as gaining exposure to all of the major specialist areas. There should be the opportunity for limited exposure to one of the smaller areas of special interest such as General Surgery of Childhood, Transplantation and Remote and Rural surgery.

Final stage
The Final stage (ST5 – 8) again includes general surgery and it is expected that by the end of ST8 the trainee will be able to manage competently unselected general surgical emergencies when on call. It is anticipated that certain complex emergencies may still need the assistance of more experienced or subspecialist colleagues. The Specialty components of the Final stage include the breadth of conditions likely to be encountered in specialist practice. The degree of specialisation may vary depending on individual career aims. The necessary skills should be acquired in four indicative years. Trainees are able to choose the level of expertise they wish to develop by combining components from the syllabus particularly in gastrointestinal surgery.

All the training stages involve the application of generic Professional Behaviour and Leadership Skills.
The training pathway in general surgery is designed to provide logical break points for those leaving or rejoining training below CCT level.

Structure of Training

The principle of 6 month rotations in all three stages of general surgery training allows continuous exposure to emergency general surgery. All such posts should include a regular on-call commitment in their job plans. In addition these rotating posts allow a breadth of experience in the subspecialty areas of general surgery.

In the Intermediate stage trainees begin to develop their area(s) of special interest although are exposed to all special interest areas to gain an appreciation of the breadth of general surgery. During the Final stage there is consolidation of emergency surgery skills. Throughout ST5 – ST8 trainees develop their special interest through eight six month posts. Posts combine initially general experience in the area special interest which becomes more specific during ST7 and ST8. The syllabus is designed in a flexible way to allow a modular approach for those who wish to combine areas of special interest. For some the whole of the Final stage will be spent training in one special interest. For others such as general GI surgery, transplantation and endocrine surgery, trainees are able to rotate through posts which allow exposure to relevant areas from the respective special interests.

Training Progression

Progression through training is demonstrated by acquisition of the levels of knowledge and clinical and technical skills determined for each stage. In the Early years trainees attain the required competences to enter specialty training at the ST3 level. In the Intermediate and Final stages for each topic within each section of the syllabus levels have been set for the end of ST4, ST6 and ST8. Stages have been divided in this way so that during the ARCP process trainees progress can be assessed and modified to ensure all necessary skills are acquired. Thus at the end of ST3 for example it is anticipated that a trainee will have acquired some of the competencies expected by the end of ST4. It should be possible for the trainee and the Training Programme Director (TPD) to decide the priorities for the coming year to ensure the remaining skills are attained and allocate the most appropriate training post(s). The levels of competence expected by the end of ST4 are common for all trainees.

The same principle of progression through levels will be applied at ST5 and ST7. The design of the specialty sections is comprehensive. However for some trainees acquisition of every single topic may not be appropriate or necessary. The level of expertise can be chosen by the trainee in discussion with the TPD according to career aspirations. Furthermore in some areas it is unlikely that full competence will be gained because of technical complexity. The levels of skill have been adjusted accordingly in these areas.

It is incumbent on the trainee that the levels of competence achieved are recorded in the appropriate log books together with relevant research, records of training courses and an audit of personal cases performed. This portfolio will continue into consultant practice.

Content of Specialty Sections

1. General Surgery

General surgery comprises both elective and emergency conditions and all trainees expressing a general surgical interest should complete the necessary competencies by the end of ST8.
In elective general surgery in addition to the management of specific conditions presenting electively to a general surgical clinic, topics include basic principles common to all areas of general surgery including genetics and oncology.
In emergency general surgery, conditions presenting acutely as well as a result of trauma are included.

2. Upper Gastrointestinal Surgery

Upper gastrointestinal surgery includes oesophago-gastric (O-G) and pancreatobiliary and hepatic disease (HPB). In addition there are sections on nutrition and bariatric surgery. It is expected that the upper GI trainee will gain skills across all areas to ST6 before subspecialising if desired in either HPB or O-G.

3. Lower Gastrointestinal Surgery

Lower gastrointestinal surgery includes all aspects of benign and malignant coloproctology. Again it is expected that all trainees will gain skills to the ST6 level with the option of further sub specialization to ST8.

Trainees wishing to pursue a career in general gastrointestinal surgery will be expected to gain skills to the level of ST6 in both upper and lower gastrointestinal surgery and to the level of ST8 in the Key conditions in these specialties.

Trainees in special interest upper or lower gastrointestinal surgery or general gastrointestinal surgery will be expected to become competent in upper and lower gastrointestinal endoscopy. Such competence will be consistent with the recommendations of the Joint Advisory Group on Gastrointestinal Endoscopy (JAG).

4. Breast Surgery

Breast surgery includes the management of patients presenting with breast conditions. In addition to the initial assessment of such patients, benign conditions and breast cancer, oncoplastic skills are included.

5. Endocrine Surgery

Endocrine surgery includes thyroid and parathyroid disease, adrenal disease, multiple endocrine abnormalities and neuroendocrine disorders and surgery of pancreatic endocrine disorders (also included in the pancreatobiliary section)

6. Vascular Surgery

Vascular surgery includes peripheral vascular disease, aneurysmal and extracranial vascular disorders as well as less common disorders presenting to the vascular surgeon including lymphoedema and hyperhydrosis. In addition to vascular surgical skills the syllabus includes knowledge and clinical and technical skills in diagnostic and interventional radiology reflecting the increasing role of these modalities in vascular disease.

7. Transplantation

Transplantation includes renal support and renal transplantation and liver and pancreatic transplantation. Vascular access is also included although this is also in the Vascular Surgery section reflecting the practical overlap between transplantation and vascular surgery.

8. General Surgery of Childhood

The general surgery of childhood includes the common presentations in children up to the age of 16 years. All general surgery trainees are expected to have knowledge and clinical skills to assess a child with a general surgical problem but full competency will only be achieved by those pursuing general paediatric surgery who tend to have this as an extra interest to their main interest.

9. Remote and Rural Surgery

Remote and rural surgery includes those additional specialty areas which may be necessary in such an environment including ophthalmology, neurosurgery, plastic surgery and ENT. Again the competency levels are only described for year ST8 and would reflect appropriate secondments to these specialties in addition to general and subspecialty skills.

10. Military Surgery

Military surgery includes those skills required in addition to general and specialty competencies by those trainees working in a military environment particularly in active service. The emphasis is on stabilising the injured patient in preparation for casualty evacuation.

Special Interest Topic Detail

SPECIAL INTEREST		
	SUB-CATEGORY	**TOPIC**
GENERAL SURGERY	Elective	Lesions of skin and subcutaneous tissue
		Abdominal wall
		Reticulo-endothelial system
		Venous thrombosis and embolism
		Genetic aspects
		Oncology
		Elective hernia
		Nutrition

		Outpatient skills
	Emergency	Superficial sepsis
		Acute Abdomen
		Acute intestinal obstruction
		Acute appendicitis
		Peritonitis
		Strangulated hernia
		Acute gynaecological disease
		Gastrointestinal bleeding
		Abdominal injuries
		Blunt and penetrating injuries
UPPER GI	Oesophagus	Gastro-oesophageal reflux disease
		Hiatus hernia
		Peptic stricture
		Achalasia
		Motility disorders
		Iatrogenic perforation
		Boerhaave's perforation
		Oesophageal cancer
		Varices
	Stomach	Gastric ulcer
		Duodenal ulcer
		Gastric and duodenal polyps
		Acute gastric perforation
		Acute upper GI haemorrhage
		Acute gastric dilatation
		Acute gastric volvulus
		Gastric carcinoma
		GIST
		Gastric lymphoma
		Morbid obesity
	Pancreatobiliary	Gall stones
		Acute pancreatitis
		Chronic pancreatitis
		Pancreatic cancer
		Cystic tumours
		Neuroendocrine tumours
		Intraductal Papillary Mucinous Neoplasms
		Pancreatic trauma
	Liver	Liver metastases
		Primary liver cancer
		Hilar tumours
		Benign tumours
		Liver trauma
	Surgical Nutrition	
LOWER GI	Benign anorectal	Haemorrhoids
		Anal fissure
		Abscess and fistula
		Hydradenitis Suppuritiva
		Pilonidal disease
		Anal stenosis

		Pruritus Ani
		Sexually transmitted disease
	Benign colorectal	Vascular malformations
		Diverticular disease
		Volvulus
		Rectal bleeding
		Massive lower GI bleeding
		Endometriosis
		Colon trauma
		Rectal Trauma
		Anal trauma
		Foreign bodies
	Colorectal neoplasia	Colorectal neoplasia
		Rectal cancer
		Recurrent disease
		Miscellaneous malignant lesions
		Anal canal neoplasia
		Anal neoplasia
		Presacral lesions
	Functional bowel disorders	Faecal incontinence
		Rectal prolapse
		Solitary rectal ulcer
		Constipation
		Irritable bowel syndrome
		Chronic rectal pain syndrome
	Inflammatory bowel disease	Inflammatory bowel disease - general
		Ulcerative colitis
		Crohn's disease
		Ischaemic colitis
		Radiation colitis
		Infective colitis
		Miscellaneous colitides
	Stomas	
BREAST - ONCOPLASTIC		Breast assessment
		Benign conditions
		Breast cancer
ENDOCRINE		Neck swellings
		Thyroid
		Parathyroid
		Adrenal
		Pancreatic endocrine
		MEN
VASCULAR		Superficial venous disease
		Deep venous disease
		Acute ischaemia
		Chronic ischaemia
		Upper limb ischaemia
		Aneurysmal disease
		Peripheral aneurysms
		Vascular access
		Renal vascular disease

		Extracranial vascular disease
		Mesenteric vascular disease
		Vascular trauma
		Hyperhydrosis
		Lymphoedema
		Interventional radiology
TRANSPLANTATION		Access for dialysis
		Organ retrieval
		Renal transplantation
		Paediatric renal transplantation
		Pancreatic transplantation
		Liver transplantation
GENERAL SURGERY OF CHILDHOOD		Abdominal pain
		Intussusception
		Child with vomiting
		Constipation
		Abdominal wall conditions
		Child with groin condition
		Urological conditions
		Head and neck swellings
		Trauma
		Miscellaneous
MILITARY SURGERY		
REMOTE AND RURAL		Ophthalmology
		Otolaryngology
		Dental
		Plastic Surgery
		Neurosurgery

Initial Stage Overview

The purpose of the initial stage (early years CT1 - 2) is to allow the trainee to develop the basic and fundamental surgical skills common to all surgical specialties, together with a few specialty-specific surgical skills.

The outcome of early years training is to achieve the competences required of surgeons entering ST3. These competences include:

- Competence in the management of patients presenting with a range of symptoms and elective and emergency conditions as specified in the core syllabus for surgery.
- Competence in the management of patients presenting with an additional range of elective and emergency conditions, as specified by the Cardiothoracic Surgery specialty component of the early years syllabus.
- Professional competences as specified in the syllabus and derived from Good Medical Practice guidance of the General Medical Council of the UK

By the end of CT2, trainees, including those following an academic pathway, will have acquired to the defined level generic skills to allow team working and management of specialty-specific patient cases so as to:

- perform as a member of the team caring for surgical patients
- receive patients as emergencies and review patients in clinics and initiate management and diagnostic processes based on a reasonable differential diagnosis
- manage the perioperative care of their patients and recognise common complications and either be able to deal with them or know to whom to refer
- be a safe and useful assistant in the operating room
- perform some simple procedures under minimal supervision and perform more complex procedures under direct supervision

In addition they will have attained the knowledge, skills and behaviour as defined in the following (common) modules of the syllabus:

Module 1: Basic Science Knowledge relevant to surgical practice (These can all be contextualised within the list of presenting symptoms and conditions outlined in module 2)

- Anatomy
- Physiology
- Pharmacology - in particular safe prescribing
- Pathological principles underlying system specific pathology
- Microbiology
- Diagnostic and interventional radiology

Module 2: Common surgical conditions

- To assess and initiate investigation and management of common surgical conditions which may confront any patient whilst under the care of surgeons, irrespective of their speciality.
- To have sufficient understanding of these conditions so as to know what and to whom to refer in a way that an insightful discussion may take place with colleagues whom will be involved in the definitive management of these conditions.
- This defines the scope and depth of the topics in the generality of clinical surgery required of any surgeon irrespective of their ST3 defined speciality

Module 3 Basic surgical skills

- To prepare oneself for surgery
- To safely administer appropriate local anaesthetic agents
- To handle surgical instruments safely
- To handle tissues safely
- To incise and close superficial tissues accurately
- To tie secure knots
- To safely use surgical diathermy
- To achieve haemostasis of superficial vessels.
- To use a suitable surgical drain appropriately.
- To assist helpfully, even when the operation is not familiar.
- To understand the principles of anastomosis
- To understand the principles of endoscopy including laparoscopy

Module 4: The principles of assessment and management of the surgical patient

- To assess the surgical patient
- To elicit a history that is relevant, concise, accurate and appropriate to the patient's problem
- To produce timely, complete and legible clinical records.
- To assess the patient adequately prior to operation and manage any pre-operative problems appropriately.
- To propose and initiate surgical or non-surgical management as appropriate.
- To take informed consent for straightforward cases.

Module 5: Peri-operative care of the surgical patient

- To manage patient care in the peri-operative period.
- To assess and manage preoperative risk.
- To take part in the conduct of safe surgery in the operating theatre environment.
- To assess and manage bleeding including the use of blood products.
- To care for the patient in the post-operative period including the assessment of common complications.
- To assess, plan and manage post-operative fluid balance
- To assess and plan perioperative nutritional management.

Module 6: Assessment and early treatment of the patient with trauma

- To safely assess the multiply injured patient.
- To safely assess and initiate management of patients with
- traumatic skin and soft tissue injury
- chest trauma
- a head injury
- a spinal cord injury
- abdominal and urogenital trauma
- vascular trauma
- a single or multiple fractures or dislocations
- burns

Module 7: Surgical care of the paediatric patient

- To assess and manage children with surgical problems, understanding the similarities and differences from adult surgical patients.
- To understand common issues of child protection and to take action as appropriate.

Module 8: Management of the dying patient

- To manage the dying patient appropriately.
- To understand consent and ethical issues in patients certified DNAR (do not attempt resuscitation)
- To manage the dying patient in consultation with the palliative care team.

Module 9: Organ and tissue transplantation

- To understand the principles of organ and tissue transplantation.
- To assess brain stem death and understand its relevance to continued life support and organ donation.

Module 10: Professional behaviour

- To provide good clinical care
- To be a good communicator
- To teach and to train
- To keep up to date and know how to analyse data
- To understand and manage people and resources within the health environment
- To promote good Health
- To understand the ethical and legal obligations of a surgeon

In addition they will have attained the knowledge, skills and behaviour as defined in the following (general surgery specific) modules of the syllabus:

1. Elective general surgery
To be able to diagnose and manage a range of elective conditions presenting to general surgeons including appropriate investigation and treatment. This should include primary abdominal wall herniae, lesions of the cutaneous and subcutaneaous tissues and uncomplicated long saphenous varicose veins

2. Elective subspecialty surgery
To be able to assess and initiate management of patients presenting with common conditions electively to subspecialty clinics. This should include gall stones, upper and lower gastrointestinal tract cancers, breast lumps and vascular insufficiency.

3. Acute abdomen
To be able to assess and provide the early care of a patient presenting with acute abdominal symptoms and signs. This should include localised and generalised peritonitis (Acute chlecystitis, acute diverticulitis, acute pancreatitis, visceral perforation, acute appendicitis and acute gynaecological conditions), obstruction (small and large bowel – obstructed herniae, adhesions, colonic carcinoma) and localised abdominal pain (biliary colic, non-specific abdominal pain).

4. Abdominal Trauma
To be able to assess and provide the early care of a patient with suspected abdominal trauma. This should include primary and secondary survey.

5. Acute Vascular Disorders
To be able to recognise assess and provide the early care of a patient presenting with ruptures abdominal aortic aneurysm and acute arterial insufficiency.

6. Acute Urological conditions
To be able to provide the early care of a patients presenting with acute urological conditions including acute urinary retention, ureteric colic, urinary tract infection and acute testicular pain

7. Superficial Sepsis
To be able to diagnose and manage including appropriate investigations superficial and common acute septic conditions including subcutaneous abscess, cellulitis, ingrowing toe nail, perianal and pilonodal abscess and breast abscess. To be aware of gas gangrene and necrotising fasciitis

Initial Stage Topics

Module 1	**Basic sciences**
Objective	• To acquire and demonstrate underpinning basic science knowledge appropriate for the practice of surgery, including:- • Applied anatomy: Knowledge of anatomy appropriate for surgery • Physiology: Knowledge of physiology relevant to surgical practice • Pharmacology: Knowledge of pharmacology relevant to surgical practice centred around safe prescribing of common drugs • Pathology: Knowledge of pathological principles underlying system specific pathology • Microbiology: Knowledge of microbiology relevant to surgical practice Imaging: • Knowledge of the principles, strengths and weaknesses of various diagnostic and interventional imaging methods
Knowledge	Applied anatomy: • Development and embryology • Gross and microscopic anatomy of the organs and other structures • Surface anatomy • Imaging anatomy This will include anatomy of thorax, abdomen, pelvis, perineum, limbs, spine, head and neck as appropriate for surgical operations that the trainee will be involved with during core training (see Module 2). Physiology: General physiological principles including: • Homeostasis • Thermoregulation • Metabolic pathways and abnormalities • Blood loss and hypovolaemic shock • Sepsis and septic shock • Fluid balance and fluid replacement therapy • Acid base balance • Bleeding and coagulation • Nutrition This will include the physiology of specific organ systems relevant to surgical care including the cardiovascular, respiratory, gastrointestinal, urinary, endocrine and neurological systems. Pharmacology: • The pharmacology and safe prescribing of drugs used in the treatment of surgical diseases including analgesics, antibiotics, cardiovascular drugs, antiepileptic, anticoagulants, respiratory drugs, renal drugs, drugs used for the management of endocrine disorders (including diabetes) and local anaesthetics. • The principles of general anaesthesia • The principles of drugs used in the treatment of common malignancies Pathology: General pathological principles including: • Inflammation • Wound healing • Cellular injury • Tissue death including necrosis and apoptosis • Vascular disorders • Disorders of growth, differentiation and morphogenesis • Surgical immunology

	• Surgical haematology • Surgical biochemistry • Pathology of neoplasia • Classification of tumours • Tumour development and growth including metastasis • Principles of staging and grading of cancers • Principles of cancer therapy including surgery, radiotherapy, chemotherapy, immunotherapy and hormone therapy • Principles of cancer registration • Principles of cancer screening • The pathology of specific organ systems relevant to surgical care including cardiovascular pathology, respiratory pathology, gastrointestinal pathology, genitourinary disease, breast, exocrine and endocrine pathology, central and peripheral, neurological systems, skin, lymphoreticular and musculoskeletal systems Microbiology: • Surgically important micro organisms including blood borne viruses • Soft tissue infections including cellulitis, abscesses, necrotising fasciitis, gangrene • Sources of infection • Sepsis and septic shock • Asepsis and antisepsis • Principles of disinfection and sterilisation • Antibiotics including prophylaxis and resistance • Principles of high risk patient management • Hospital acquired infections Imaging: • Principles of diagnostic and interventional imaging including x-rays, ultrasound, CT, MRI. PET, radiounucleotide scanning

Module 2	**Common Surgical Conditions**	
Objective	This section assumes that trainees have general medical competences consistent with a doctor leaving Foundation in the UK. It also assumes an ongoing commitment to keeping these skills and knowledge up to date as laid out in GMP. It is predicated on the value that surgeons are doctors who carry our surgery and require competence. To demonstrate understanding of the relevant basic scientific principles for each of these surgical conditions and to be able to provide the relevant clinical care as defined in modules assessment and management as defined in Modules 1 and 4.	
Topics	Presenting symptoms or syndromes • Abdominal pain • Abdominal swelling • Change in bowel habit • Gastrointestinal haemorrhage • Rectal bleeding • Dysphagia • Dyspepsia • Jaundice	To include the following conditions • Appendicitis • Gastrointestinal malignancy • Inflammatory bowel disease • Diverticular disease • Intestinal obstruction • Adhesions • Abdominal hernias • Peritonitis • Intestinal perforation • Benign oesophageal disease • Peptic ulcer disease • Benign and malignant hepatic, gall bladder and pancreatic disease • Haemorrhoids and perianal disease • Abdominal wall stomata

	Breast disease • Breast lumps and nipple discharge • Acute Breast pain	To include the following conditions • Benign and malignant breast lumps • Mastitis and breast abscess
	Peripheral vascular disease Presenting symptoms or syndrome • Chronic and acute limb ischaemia • Aneurismal disease • Transient ischaemic attacks • Varicose veins • Leg ulceration	To include the following conditions • Atherosclerotic arterial disease • Embolic and thrombotic arterial disease • Venous insufficiency • Diabetic ulceration
	Cardiovascular and pulmonary disease	To include the following conditions • Coronary heart disease • Bronchial carcinoma • Obstructive airways disease • Space occupying lesions of the chest
	Genitourinary disease Presenting symptoms or syndrome • Loin pain • Haematuria • Lower urinary tract symptoms • Urinary retention • Renal failure • Scrotal swellings • Testicular pain	To include the following conditions • Genitourinary malignancy • Urinary calculus disease • Urinary tract infection • Benign prostatic hyperplasia • Obstructive uropathy
	Trauma and orthopaedics Presenting symptoms or syndrome • Traumatic limb and joint pain and deformity • Chronic limb and joint pain and deformity • Back pain	To include the following conditions • Simple fractures and joint dislocations • Fractures around the hip and ankle • Basic principles of Degenerative joint disease • Basic principles of inflammatory joint disease including bone and joint infection • Compartment syndrome • Spinal nerve root entrapment and spinal cord compression • Metastatic bone cancer • Common peripheral neuropathies and nerve injuries
	Disease of the Skin, Head and Neck Presenting symptoms or syndrome • Lumps in the neck • Epistaxis • Upper airway obstructions	To include the following conditions • Benign and malignant skin and subcutaneous lesions • Benign and malignant lesions of the mouth and tongue
	Neurology and Neurosurgery Presenting symptoms or syndrome • Headache • Facial pain • Coma	To include the following conditions • Space occupying lesions from bleeding and tumour
	Endocrine Presenting symptoms or syndrome • Lumps in the neck • Acute endocrine crises	To include the following conditions • Thyroid and parathyroid disease • Adrenal gland disease • Diabetes

Module 3	**Basic surgical skills**
Objective	• Preparation of the surgeon for surgery • Safe administration of appropriate local anaesthetic agents • Acquisition of basic surgical skills in instrument and tissue handling. • Understanding of the formation and healing of surgical wounds • Incise superficial tissues accurately with suitable instruments. • Close superficial tissues accurately. • Tie secure knots. • Safely use surgical diathermy • Achieve haemostasis of superficial vessels. • Use suitable methods of retraction. • Knowledge of when to use a drain and which to choose. • Handle tissues gently with appropriate instruments. • Assist helpfully, even when the operation is not familiar. • Understand the principles of anastomosis • Understand the principles of endoscopy
Knowledge	Principles of safe surgery • Preparation of the surgeon for surgery • Principles of hand washing, scrubbing and gowning • Immunisation protocols for surgeons and patients Administration of local anaesthesia • Choice of anaesthetic agent • Safe practise Surgical wounds • Classification of surgical wounds • Principles of wound management • Pathophysiology of wound healing • Scars and contractures • Incision of skin and subcutaneous tissue: o Langer's lines o Choice of instrument o Safe practice • Closure of skin and subcutaneous tissue: o Options for closure o Suture and needle choice • Safe practice • Knot tying o Range and choice of material for suture and ligation o Safe application of knots for surgical sutures and ligatures • Haemostasis: o Surgical techniques o Principles of diathermy • Tissue handling and retraction: o Choice of instruments • Biopsy techniques including fine needle aspiration cytology • Use of drains: o Indications o Types o Management/removal • Principles of anastomosis • Principles of surgical endoscopy
Clinical Skills	Preparation of the surgeon for surgery

	• Effective and safe hand washing, gloving and gowning • Administration of local anaesthesia • Accurate and safe administration of local anaesthetic agent Preparation of a patient for surgery • Creation of a sterile field • Antisepsis • Draping
Technical Skills and Procedures	Preparation of the surgeon for surgery • Effective and safe hand washing, gloving and gowning Administration of local anaesthesia • Accurate and safe administration of local anaesthetic agent Incision of skin and subcutaneous tissue: • Ability to use scalpel, diathermy and scissors Closure of skin and subcutaneous tissue: • Accurate and tension free apposition of wound edges Knot tying: • Single handed • Double handed • Instrument • Superficial • Deep Haemostasis: • Control of bleeding vessel (superficial) • Diathermy • Suture ligation • Tie ligation • Clip application • Transfixion suture Tissue retraction: • Tissue forceps • Placement of wound retractors Use of drains: • Insertion • Fixation • Removal Tissue handling: • Appropriate application of instruments and respect for tissues • Biopsy techniques Skill as assistant: • Anticipation of needs of surgeon when assisting

Module 4	**The assessment and management of the surgical patient**
Objective	To demonstrate the relevant knowledge, skills and attitudes in assessing the patient and manage the patient, and propose surgical or non-surgical management.
Knowledge	The knowledge relevant to this section will be variable from patient to patient and is covered within the rest of the syllabus – see common surgical conditions in particular (Module 2). As a trainee develops an interest in a particular speciality then the principles of history taking and examination may be increasingly applied in that context.

Clinical Skills	Surgical history and examination (elective and emergency) Construct a differential diagnosis Plan investigations Clinical decision making Team working and planning Case work up and evaluation; risk management Active participation in clinical audit events Appropriate prescribing Taking consent for intermediate level intervention; emergency and elective Written clinical communication skills Interactive clinical communication skills: patients Interactive clinical communication skills: colleagues

Module 5	**Peri-operative care**
Objective	To assess and manage preoperative risk To manage patient care in the peri-operative period To conduct safe surgery in the operating theatre environment To assess and manage bleeding including the use of blood products To care for the patient in the post-operative period including the assessment of common complications To assess, plan and manage post-operative fluid balance To assess and plan perioperative nutritional management
Knowledge	Pre-operative assessment and management: • Cardiorespiratory physiology • Diabetes mellitus and other relevant endocrine disorders • Fluid balance and homeostasis • Renal failure • Pathophysiology of sepsis – prevention and prophylaxis • Thromboprophylaxis • Laboratory testing and imaging • Risk factors for surgery and scoring systems • Pre-medication and other preoperative prescribing • Principles of day surgery Intraoperative care: • Safety in theatre including patient positioning and avoidance of nerve injuries • Sharps safety • Diathermy, laser use • Infection risks • Radiation use and risks • Tourniquet use including indications, effects and complications • Principles of local, regional and general anaesthesia • Principles of invasive and non-invasive monitoring • Prevention of venous thrombosis • Surgery in hepatitis and HIV carriers • Fluid balance and homeostasis Post-operative care: • Post-operative monitoring • Cardiorespiratory physiology • Fluid balance and homeostasis • Diabetes mellitus and other relevant endocrine disorders • Renal failure • Pathophysiology of blood loss • Pathophysiology of sepsis including SIRS and shock • Multi-organ dysfunction syndrome • Post-operative complications in general • Methods of postoperative analgesia

	To assess and plan nutritional management • Post-operative nutrition • Effects of malnutrition, both excess and depletion • Metabolic response to injury • Methods of screening and assessment of nutritional status • Methods of enteral and parenteral nutrition Haemostasis and Blood Products: • Mechanism of haemostasis including the clotting cascade • Pathology of impaired haemostasis e.g. haemophilia, liver disease, massive haemorrhage • Components of blood • Alternatives to use of blood products • Principles of administration of blood products • Patient safety with respect to blood products Coagulation, deep vein thrombosis and embolism: • Clotting mechanism (Virchow Triad) • Effect of surgery and trauma on coagulation • Tests for thrombophilia and other disorders of coagulation • Methods of investigation for suspected thromboembolic disease • Principles of treatment of venous thrombosis and pulmonary embolism including anticoagulation • Role of V/Q scanning, CTpulmonary angiography, D-dimer and thrombolysis • Place of pulmonary embolectomy • Prophylaxis of thromboembolism: • Risk classification and management of DVT • Knowledge of methods of prevention of DVT, mechanical and pharmacological Antibiotics: • Common pathogens in surgical patients • Antibiotic sensitivities • Antibiotic side-effects • Principles of prophylaxis and treatment Metabolic and endocrine disorders in relation perioperative management • Pathophysiology of thyroid hormone excess and deficiency and associated risks from surgery • Causes and effects of hypercalcaemia and hypocalcaemia • Complications of corticosteroid therapy • Causes and consequences of Steroid insufficiency • Complications of diabetes mellitus • Causes and effects of hyponatraemia • Causes and effects of hyperkalaemia and hypokalaemia
Clinical Skills	Pre-operative assessment and management: • History and examination of a patient from a medical and surgical standpoint • Interpretation of pre-operative investigations • Management of co morbidity • Resuscitation • Appropriate preoperative prescribing including premedication Intra-operative care: • Safe conduct of intraoperative care • Correct patient positioning • Avoidance of nerve injuries

	• Management of sharps injuries • Prevention of diathermy injury • Prevention of venous thrombosis Post-operative care: • Writing of operation records • Assessment and monitoring of patient's condition • Post-operative analgesia • Fluid and electrolyte management • Detection of impending organ failure • Initial management of organ failure • Principles and indications for Dialysis • Recognition, prevention and treatment of post-operative complications Haemostasis and Blood Products: • Recognition of conditions likely to lead to the diathesis • Recognition of abnormal bleeding during surgery • Appropriate use of blood products • Management of the complications of blood product transfusion Coagulation, deep vein thrombosis and embolism • Recognition of patients at risk • Awareness and diagnosis of pulmonary embolism and DVT • Role of duplex scanning, venography and d-dimer measurement • Initiate and monitor treatment of venous thrombosis and pulmonary embolism • Initiation of prophylaxis Antibiotics: • Appropriate prescription of antibiotics Assess and plan preoperative nutritional management • Arrange access to suitable artificial nutritional support, preferably via a nutrition team including Dietary supplements, Enteral nutrition and Parenteral nutrition Metabolic and endocrine disorders • History and examination in patients with endocrine and electrolyte disorders • Investigation and management of thyrotoxicosis and hypothyroidism • Investigation and management of hypercalcaemia and hypocalcaemia • Peri-operative management of patients on steroid therapy • Peri-operative management of diabetic patients • Investigation and management of hyponatraemia • Investigation and management of hyperkalaemia and hypokalaemia
Technical Skills and Procedures	Central venous line insertion Urethral catheterisation

Module 6	**Assessment and management of patients with trauma (including the multiply injured patient)**
Objective	Assess and initiate management of patients with chest trauma • who have sustained a head injury • who have sustained a spinal cord injury • who have sustained abdominal and urogenital trauma • who have sustained vascular trauma • who have sustained a single or multiple fractures or dislocations • who have sustained traumatic skin and soft tissue injury • who have sustained burns • Safely assess the multiply injured patient.

	• Contextualise any combination of the above • Be able to prioritise management in such situation as defined by ATLS, APLS etc
Knowledge	General • Scoring systems for assessment of the injured patient • Major incident triage • Differences In children Shock • Pathogenesis of shock • Shock and cardiovascular physiology • Metabolic response to injury • Adult respiratory distress syndrome • Indications for using uncross matched blood Wounds and soft tissue injuries • Gunshot and blast injuries • Stab wounds • Human and animal bites • Nature and mechanism of soft tissue injury • Principles of management of soft tissue injuries • Principles of management of traumatic wounds • Compartment syndrome Burns • Classification of burns • Principle of management of burns Fractures • Classification of fractures • Pathophysiology of fractures • Principles of management of fractures • Complications of fractures • Joint injuries Organ specific trauma • Pathophysiology of thoracic trauma • Pneumothorax • Head injuries including traumatic intracranial haemorrhage and brain injury • Spinal cord injury • Peripheral nerve injuries • Blunt and penetrating abdominal trauma • Including spleen • Vascular injury including iatrogenic injuries and intravascular drug abuse • Crush injury • Principles of management of skin loss including use of skin grafts and skin flaps
Clinical Skills	General History and examination Investigation Referral to appropriate surgical subspecialties Resuscitation and early management of patient who has sustained thoracic, head, spinal, abdominal or limb injury according to ATLS and APLS guidelines Resuscitation and early management of the multiply injured patient Specific problems • Management of the unconscious patient

	• Initial management of skin loss • Initial management of burns • Prevention and early management of the compartment syndrome
Technical Skills and Procedures	Central venous line insertion Chest drain insertion Diagnostic peritoneal lavage Urethral catheterisation Suprapubic catheterisation

Module 7	**Surgical care of the Paediatric patient**
Objective	To assess and manage children with surgical problems, understanding the similarities and differences from adult surgical patients To understand the issues of child protection and to take action as appropriate
Knowledge	• Physiological and metabolic response to injury and surgery • Fluid and electrolyte balance • Thermoregulation Safe prescribing in children • Principles of vascular access in children • Working knowledge of trust and Local Safeguarding Children Boards (LSCBs) and Child Protection Procedures • Basic understanding of child protection law • Understanding of Children's rights • Working knowledge of types and categories of child maltreatment, presentations, signs and other features (primarily physical, emotional, sexual, neglect, professional) • Understanding of one personal role, responsibilities and appropriate referral patterns in child protection • Understanding of the challenges of working in partnership with children and families • Recognise the possibility of abuse or maltreatment • Recognise limitations of own knowledge and experience and seek appropriate expert advice • Urgently consult immediate senior in surgery to enable referral to paediatricians • Keep appropriate written documentation relating to child protection matters • Communicate effectively with those involved with child protection, including children and their families
Clinical Skills	History and examination of the neonatal surgical patient History and examination of paediatric surgical patient Assessment of respiratory and cardiovascular status Undertake consent for surgical procedures (appropriate to the level of training) in paediatric patients

Module 8	**Management of the dying patient**
Objective	Ability to manage the dying patient appropriately. To understand consent and ethical issues in patients certified DNAR (do not attempt resuscitation) Palliative Care: Good management of the dying patient in consultation with the palliative care team.
Knowledge	Palliative Care: • Care of the terminally ill • Appropriate use of analgesia, antiemetics and laxatives Principles of organ donation: • Circumstances in which consideration of organ donation is appropriate • Principles of brain death Understanding the role of the coroner and the certification of death
Clinical Skills	Palliative Care: • Symptom control in the terminally ill patient Principles of organ donation: • Assessment of brain stem death • Certification of death

Module 9	**Organ and Tissue transplantation**
Objective	To understand the principles of organ and tissue transplantation
Knowledge	• Principles of transplant immunology including tissue typing, acute, hyperactute and chronic rejection • Principles of immunosuppression • Tissue donation and procurement • Indications for whole organ transplantation

Eligibility requirements for ST3 in General Surgery

In order to meet the job specifications of an ST3 trainee an early years trainee must take a clear role in the General Surgery team, managing clinic and ward based patients under supervision, including the management of acute admissions. They will need to be able to take part in an outpatient clinic and see both new and old patients themselves with the consultant available for advice.

Therefore in early years training, In addition to the generic competencies for all surgeons, it is necessary to address the specifics of a developing interest in General Surgery during these years. This means spending 12 months in General Surgery with appropriate sub-specialty experience in a service which gives trainees access to the appropriate learning opportunities. Also by the time a trainee enters ST3 they need to be familiar with the operating room environment both with respect to elective and emergency cases.

Trainees must attend MDT and other Departmental meetings and ward rounds, prepare elective operating lists (both inpatient and day-case), and actually perform some surgery under appropriate supervision. They must manage all patients in the ward environment, both preoperatively and post operatively. This includes recognising and initiating the management of common complications and emergencies, over and above those already laid out in the generic curriculum, particularly module 2.

The range of conditions a trainee needs to manage is laid out below and in the depth demonstrated in a text book such as Principles and Practice of Surgery (edited by O. James Garden) include

1. Elective general surgery
To be able to diagnose and manage a range of elective conditions presenting to general surgeons including appropriate investigation and treatment. This should include primary abdominal wall herniae, lesions of the cutaneous and subcutaneous tissues and uncomplicated long saphenous varicose veins

2. Elective subspecialty surgery
To be able to assess and initiate management of patients presenting with common conditions electively to subspecialty clinics. This should include gall stones, upper and lower gastrointestinal tract cancers, breast lumps and vascular insufficiency.

3. Acute abdomen
To be able to assess and provide the early care of a patient presenting with acute abdominal symptoms and signs. This should include localised and generalised peritonitis (Acute chlecystitis, acute diverticulitis, acute pancreatitis, visceral perforation, acute appendicitis and acute gynaecological conditions), obstruction (small and large bowel – obstructed herniae, adhesions, colonic carcinoma) and localised abdominal pain (biliary colic, non-specific abdominal pain).

4. Abdominal Trauma
To be able to assess and provide the early care of a patient with suspected abdominal trauma. This should include primary and secondary survey.

5. Acute Vascular Disorders
To be able to recognise assess and provide the early care of a patient presenting with rupture abdominal aortic aneurysm and acute arterial insufficiency.

6. Acute Urological conditions
To be able to provide the early care of a patients presenting with acute urological conditions including acute urinary retention, ureteric colic, urinary tract infection and acute testicular pain

7. Superficial Sepsis
To be able to diagnose and manage with appropriate investigations superficial and common acute septic conditions including subcutaneous abscess, cellulitis, ingrowing toe nail, perianal and pilonodal abscess and breast abscess. To be aware of gas gangrene and necrotising fasciitis

Early Years training in General Surgery	
Objective	Provide experience in the early care of patients with common general surgery problems: • The common emergency problems are acute abdomen, abdominal trauma, acute vascular disorders, acute urological conditions and superficial sepsis. • The common elective problems include abdominal wall hernia, lesions of the cutaneous and subcutaneous tissues, primary long saphenous varicose veins, gall bladder disease, upper and lower gastrointestinal tract cancers, vascular insufficiency and breast lumps. Provide some operative experience of elective abdominal wall hernia repair, primary varicose vein surgery, excision of benign subcutaneous lesions and localised malignant skin lesions and intra-abdominal surgery
Knowledge	Basic science relevant to the management of patients with the common elective and emergency problems, (including anatomy, physiology, pharmacology, and radiology) Clinical presentation and pathology of common elective and emergency conditions. Principles of management of patients presenting with the common elective and emergency problems
Clinical Skills	4 Pre-operative and postoperative assessment of patients with elective and emergency presentations of general surgical conditions. This should include assessment of co-morbidity in the context of the planned surgical procedure. 3 Management of fluid balance and nutritional support; postoperative analgesia; thromboprophylaxis; wound management. 3 Assessment and planning investigation of new and follow-up patients in outpatient clinics. 3 Assessment and management of patients with emergency conditions including primary and secondary survey and determining appropriate investigations.
Technical Skills and Procedures	3 Chest drain insertion 3 Central venous line insertion 3 Suprapubic catheter insertion 3 Needle biopsy including Fine needle aspiration 3 Rigid sigmoidoscopy 4 Excision biopsy of benign skin or subcutaneous lesions 4 In growing toenail – avulsion / wedge resection / phenolisaton 3 Excision biopsy malignant skin lesion 3 Outpatient treatment of haemorrhoids 2 Breast lump excision 2 Induction of pneumoperitoneum for laparoscopy with port placement 2 Open and close midline laparotomy incision 3 Appendicectomy 2 Inguinal hernia repair 2 Primary abdominal wall hernia repair 2 Primary varicose vein surgery

Assessment

The speciality elements of the early years will all be assessed primarily in the workplace and then scrutinised in the Annual Review of Competency Progression. All these documents would be included in a portfolio which would contribute as evidence in subsequent applications to enter ST3. The specific job specifications for entry into ST3 are shown below. Completion of the MRCS is mandatory during the same period

Specific evidence includes

	Assessment type	Subject
	DOPS a selection of types and numbers of each type according to learning agreements	Urethral catheterisation. Suprapubic catheterisation Chest drain insertion Central venous line insertion Needle biopsy including Fine needle aspiration Rigid sigmoidoscopy Excision biopsy of benign skin or subcutaneous lesions Ingrowing toenail – avulsion / wedge resection / phenolisaton Excision biopsy malignant skin lesion Outpatient treatment of haemorrhoids Breast lump excision Induction of pneumoperitoneum for laparoscopy with port placement Open and close midline laparotomy incision
	Case Based Discussion	One per attachment
	CEX	Clinical assessment of patients with common conditions
	PBAs	Appendicectomy Inguinal hernia repair Primary varicose vein surgery
	Training Supervisors report	Evidenced by the above WPBAs
	ARCP for each specified training interval	As per local Deanery specifications

MRCS	Generic syllabus	Complete

Entry into ST3

Entry into ST3 will usually involve a competitive selection process. The current person specifications for entry into ST3 in general surgery are shown on the Modernising Medical Careers website.. The essential components are completion of the common component of the core surgical training programme (as evidenced by successful ARCP, WPBA and completion of the MRCS examination) and completion of the general surgery components of the early years training as evidenced by a successful ARCP and completion of the appropriate WPBA

Intermediate Stage Overview

The intermediate phase includes further training in emergency surgery and intermediate surgery but also some more specialist surgery, with the opportunity to be exposed to all of the major specialist interest areas over the two years. There should also be the opportunity for a limited exposure to one of the smaller areas of special interest such as paediatrics, transplant or remote and rural surgery.

These areas could be covered either by specific attachments to emergency/day case/specialist units or by working in a smaller hospital where practice is more general and emergency exposure gained throughout the entire period. This would depend on the local situation.

Depending on local circumstances different combinations of specialist interest might be more suitably combined but experience should be gained in each of the major areas

The expected levels of knowledge, clinical and technical skills are shown in the table in summary form. The emphasis is on Elective and Emergency General Surgery with exposure to the breadth of the special interest areas in General Surgery. This summary is intended to guide trainee, trainer and ARCP Panel on the acquisition of the required skills during the Intermediate Stage.

Intermediate Curriculum Summary

		Knowledge / Clinical Skills – Clinical Features, Pathology, Management	**Level**	**Technical Skills**	**Level**
General					
	Elective	Benign skin lesions	4	Excisional surgery	4
		Hernia	4	Repair of primary hernias	3
				Repair of recurrent / incisional hernias	2
		Laparoscopic surgery - perioperative management, complications	3	Establishment of pneumoperitoneum	3
		Genetic aspects of surgical disease	3		
		Principles of Oncology	3		

		Knowledge / Clinical Skills - Clinical Features, Pathology, Management	**Level**	**Technical Skills**	**Level**
General					
	Emergency	Superficial sepsis and abscess	4	Drainage of superficial abscesses	4
				Synergistic gangrene	2
		Peritonitis - perforated viscus, appendicitis, pancreatitis, acute cholecystitis	4	Appendicectomy	Open 4; Laparoscopic 3
				Repair perforated peptic ulcer	3

				Hartmans procedure	2
				Cholecystectomy - acute - lap/open	2
				Small bowel resection	2
		Acute Intestinal Obstruction including stangulated hernia	3	Incarcerated / strangulated hernia	2
				Division of adhesions	3
				Right hemicolectomy	2
				Left hemicolectomy +/- stoma	2
				Smal bowel resection	2
		Blunt trauma	3	Laparotomy	2
				Procedures for injury to spleen, liver, pancreas, bowel	2
		Penetrating trauma	3	Laparotomy	2
				Procedures for injury to spleen, liver, pancreas, bowel	2
		Thoracic trauma	2	Thoracotomy and control of haemorrhage	1
		Arterial injury	2	Fasciotomy	2
		Acute gastrointestinal haemorrhage	3	Endoscopic / open control of haemorrhage	2
		Acute presentations of urological disease	3		
		Acute presentations of gynaecological disease	2	Laparoscopy in acute abdominal pain	2
		Scotal emergencies in all age groups	3	Testicular torsion	2

		Knowledge / Clinical Skills - Clinical Features, Pathology, Management	**Level**	**Technical Skills**	**Level**
General					
	Critical Care	Pathophysiology of hypovolaemic and septic shock	3		
		Bleeding diatheses and Thrombo-embolic disease	3		
		Nutritional support	3		

	Knowledge / Clinical Skills - Clinical Features, Pathology, Management	**Level**	**Technical Skills**	**Level**
Oesophago-Gastric				
	Gastro-oesophageal reflux disease	2	Antireflux surgery	2
	Oesophageal cancer	2	Oesophagectomy	2
	Gastric cancer	2	Gastrectomy	2

	Obesity	2	Anti-obesity procedures	1
	Peptic ulcer and complications	3		
	Upper GI Endoscopy	2 or 3	Upper GI endoscopy - basic skills	3 GI interest; 2 non-GI interest

	Knowledge / Clinical Skills - Clinical Features, Pathology, Management	**Level**	**Technical Skills**	**Level**
Hepatic, Pancreatobiliary	Gall bladder disease	3	Laparoscopic cholecystectomy	3
			Open cholecystectomy	2
			Exploration of common bile duct	2
	Acute pancreatitis	3		
	Pancreatic cancer	2	Pancreato-duodenectomy	2

	Knowledge / Clinical Skills - Clinical Features, Pathology, Management	**Level**	**Technical Skills**	**Level**
Colorectal	Inflammatory bowel disease	2	Ileo-anal pouch	2
	Functional bowel disease - including pseudo-obstruction and volvulus	2	Surgery for prolapse	2
	Colorectal cancer	2	Segmental colonic resection	2
			Proctectomy	2
			Anterior resection	2
			Stoma formation	2
	Proctology - haemorrhoids, anal fissure and fistula	3	Haemorroidectomy	2
			Surgery for anal fissure	2
			Anal fistula surgery	2
			Drainage of perianal abscess	4
			Pilonidal sinus surgery	3
	Diverticular disease	2	Reversal of Hartmans	1
	Lower GI endoscopy	2 or 3	Lower GI endoscopy - basic skills	3 GI interest; 2 non-GI interest

	Knowledge / Clinical Skills - Clinical Features, Pathology, Management	**Level**	**Technical Skills**	**Level**
Vascular	Vascular - acute ischaemia	3	Femoral Embolectomy	2
			thrombolysis	1
			aspiration thrombectomy	
	Vascular- chronic ischaemia	3	Aorto-iliac / femoral bypass	2
			Infra-inguinal bypass	2
			Lower limb amputations	2
			SFA angioplasty and stenting	2

			Iliac angioplasty and stenting	2
	Abdominal aortic aneurysmal disease	2	Aortic aneurysm repair	2
			Endovascular Aneurysm Repair	2
	Carotid artery disease	2	Carotid endarterectomy	2
			Carotid Artery angioplasty and stenting	1
	Venous disease	3	Treatments for primary varicose veins	2
			Treatments for recurrent varicose veins	2
	Lower Limb Ulcers	3	Surgical debridment of venous ulcer	3
			Skin grafting tecniques for ulcers	2
	Diabetic Foot complications	3	Drainage of infection	3
			Amputation of toe	3
			Ray amputation	2
			Forefoot amputation	2

	Knowledge / Clinical Skills - Clinical Features, Pathology, Management	**Level**	**Technical Skills**	**Level**
Breast	Benign breast disease	2	Breast lump excision	3
	Acute breast infection	3	Drainage of breast abscess	4
	Breast cancer	2	Wide local excision	2
			Simple mastectomy	2

	Knowledge / Clinical Skills - Clinical Features, Pathology, Management	**Level**	**Technical Skills**	**Level**
Endocrine	Thyroid disease	2	Thyroidectomy	2

	Knowledge / Clinical Skills - Clinical Features, Pathology, Management	**Level**	**Technical Skills**	**Level**
Transplant	Chronic renal failure	3	Renal transplant	2
			Organ retrieval	2

	Knowledge / Clinical Skills - Clinical Features, Pathology, Management	**Level**	**Technical Skills**	**Level**
General Surgery Of Childhood	Hernia	2	Herniotomy	2
	Undescended testicle	2	Orchidopexy	2

FINAL STAGE

Final Stage Overview

The final phase consists of two strands, which run concurrently throughout ST5-8.

- An emergency/general strand which must be covered by all trainees including those who have taken an academic pathway. Topics are described on the basis of indicative years throughout ST5-8.
- Training in areas of special interest. The degree of subspecialisation desired by the trainee may vary depending on his/her career aims.

In order to participate in the general surgical on call rota as a consultant at least a year must be spent in both upper and lower GI surgery. However it must be emphasised that sufficient competency and experience to participate as a consultant covering general surgical emergencies will not be gained overall until CCT has been obtained. Even at this stage it is anticipated that certain complex cases will require consultation with more experienced or subspecialist consultants.

Thus a colorectal trainee would undertake training in upper GI surgery to attain knowledge and clinical and technical skills expected at ST6 for upper GI surgery to equip them to provide a gastrointestinal acute service. Similarly, a trainee with an upper gastrointestinal interest would be expected to reach ST6 competence in lower GI surgery. A trainee from a non-gastrointestinal subspecialty would be expected to attain ST6 level in each of upper and lower GI surgery in order to deal with an acute GI take. Some breast and vascular trainees may wish to gain this experience but others may wish to confine themselves to their own specialty. A small number of superspecialised areas will not be fully covered before CCT is gained e.g. liver transplantation, major upper GI resections, pelvic floor surgery and complex or redo pelvic surgery.

This schema allows the amount of flexibility needed for a variety of situations, including trainees who are pursuing an academic pathway, yet permits specialisation in a narrow field if this is appropriate. Academic trainees will be expected to demonstrate that they have achieved all the essential requirements of the CCT similar to non-academic trainees.

LESIONS OF SKIN AND SUBCUTANEOUS TISSUES

OBJECTIVE

Recognise and appropriately manage malignant skin lesions.
Basal cell carcinoma: Diagnose and treat appropriately small basal call carcinomas.
Malignant melanoma: Diagnose malignant melanoma and refer appropriately.
Squamous cell carcinoma: Diagnose squamous cell carcinoma and refer appropriately if large.

		ST4	ST6	ST8
KNOWLEDGE				
Basal cell carcinoma:	Anatomy	4	4	4
	Histopathology	4	4	4
	Natural history	4	4	4
Malignant melanoma:	Anatomy	4	4	4
	Histopathology	4	4	4
	Natural history	4	4	4
	Staging	3	4	4
Squamous cell carcinoma:	Anatomy	4	4	4
	Histopathology	4	4	4
	Natural history of malignant transformation in chronic ulcers	3	4	4
CLINICAL SKILLS				
Basal cell carcinoma:	Assess skin lesion	3	4	4
	Biopsy of large skin lesions to plan treatment	4	4	4
	Closure of large defects after excision by split skin grafts, full thickness grafts, flap closure	2	3	4
Malignant melanoma:	Assess skin lesion	2	3	4
	Indications for wider excision, lymph node biopsy, axillary or groin block dissection based on staging	2	3	4
	Assess skin lesion including incisional biopsy	3	4	4
Squamous cell carcinoma:				
TECHNICAL SKILLS				
	Malignant skin lesion-excision biopsy	4	4	4
Basal cell carcinoma:	SCC/BCC			
	Malignant skin lesion-treatment of	3	4	4
Malignant melanoma:	melanoma			
	Malignant skin lesion-excision biopsy	4	4	4
Squamous cell carcinoma	SCC/BCC			

ABDOMINAL WALL

OBJECTIVE

Management of abnormalities of the abdominal wall, excluding hernia.
Diagnosis: Ability to diagnose abdominal wall masses.
Treatment: Ability to manage abdominal wall masses.

		ST4	ST6	ST8
KNOWLEDGE				
Diagnosis:	Anatomy of the abdominal wall	4	4	4
	Pathology of the acute and chronic conditions; Haematoma, Sarcoma, Desmoid Tumours	4	4	4
Treatment:	Principles of management of desmoid tumours and sarcomas	4	4	4
CLINICAL SKILLS				
Diagnosis:	Ability to determine that a swelling is in the abdominal wall	3	4	4
	Initiate appropriate investigation	3	4	4
TREATMENT				
Conservative management of haematoma		3	4	4

RETICULO-
ENDOTHELIAL SYSTEM

OBJECTIVE

Knowledge of general and specialist surgical support needed in the management of conditions affecting the reticulo-endothelial and haemopoetic systems.
Lymphatic conditions: Knowledge of the general and specialist surgical support needed in the management of conditions affecting the lymphatic system. Simple lymph node biopsy.
Conditions involving the spleen: Knowledge of the general and specialist surgical support needed in the management of conditions affecting the spleen.

		ST4	ST6	ST8
KNOWLEDGE				
Lymphatic conditions:	Non Hodgkin's Lymphoma	3	3	4
	Lymphadenopathy	3	3	4
	Hodgkin's disease	3	3	4
	Staging classifications	2	3	4
Conditions involving the spleen:	Indications for elective splenectomy-haemolytic anaemia, ITP, Thrombocytopaenia, myeloproliferative disorders	3	3	4
	Indications for emergency splenectomy	4	4	4
	Sequelae of splenectomy	3	4	4
	Splenic conditions	2	3	4
	Thrombophilia	3	3	4
CLINICAL SKILLS				
Lymphatic conditions:	Planning appropriate diagnostic tests	3	3	4
	Liver biopsy	2	34	4
Conditions involving the spleen:	Planning appropriate treatment schedule in consultation with haematologist	2	3	4
TECHNICAL SKILLS				
Lymphatic conditions:	Biopsy-FNA	4	4	4
	Liver biopsy	2	3	4
	Lymph node biopsy-groin, axilla	3	4	4
Conditions involving the spleen:	Splenectomy	2	3	4

VENOUS THROMBOSIS
AND EMBOLISM

OBJECTIVE

Full understanding of prevention and management of Venous thrombosis and Embolism.
Coagulation: Understanding of the physiology and pathophysiology of coagulation.
Diagnosis: Knowledge and clinical skills in the common means of diagnosis of Venous thrombosis and Embolism
Treatment: Ability to treat Venous Thrombosis and Embolism.
Prophylaxis: Knowledge and clinical skills in common methods of prophylaxis against Venous thrombosis and Embolism.

		ST4	ST6	ST8
KNOWLEDGE				
Coagulation:	Clotting mechanism (Virchow Triad)	4	4	4
	Effect of surgery and trauma on coagulation	4	4	4
	Tests for thrombophilia and other disorders of coagulation	4	4	4
Diagnosis:	Methods of investigation for suspected thromboembolic disease	3	4	4
Treatment:	Anticoagulation, heparin and warfarin	4	4	4
	Role of V/Q scanning, CT angiography and thrombolysis	3	4	4
	Place of pulmonary embolectomy	3	4	4
Prophylaxis:	Detailed knowledge of methods of prevention, mechanical and pharmacological	4	4	4
CLINICAL SKILLS				
Coagulation	Recognition of patients at risk	3	4	4
Diagnosis:	Awareness of symptoms and signs associated with pulmonary embolism and DVT	3	4	4
Treatment:	Initiate and monitor treatment	3	4	4
Prophylaxis:	Awareness at all times of the importance of prophylaxis	3	4	4

GENETIC ASPECTS OF SURGICAL DISEASE

OBJECTIVES

Basic understanding of genetically determined diseases.
Endocrine: Basic understanding of the influence of genetics on endocrine disease.
Colorectal: Basic understanding of the influence of genetics on colorectal cancer development.
Breast: Basic understanding of the influence of genetics of breast cancer development.
Upper GI/HPB: Basic understanding of the influence of genetics in upper GI disease.
Clinical and molecular genetics: Basic understanding of the principles of genetics

		ST4	ST6	ST8
KNOWLEDGE				
Endocrine Thyroid, Parathyroid, Pancreas and adrenal	Principal genetically influenced endocrine diseases and syndromes, MEN I, MEN II,	2	3	4
Colorectal:	Outline knowledge of genetic changes which predispose to colorectal cancer including familial adenomatous polyposis, HNPCC and other polyposis syndromes	2	3	4
Breast:	Outline knowledge of genetic changes which predispose to breast cancer; BRCA1, BRCA2, P53	2	3	4
Upper GI/HPB:	Principal genetically influenced upper gastrointestinal diseases and syndromes, including duodenal polyposis, familial gastric cancer, Peutz-Jeger syndrome and polycystic disease of the liver	2	3	4
Clinical and molecular genetics:		2	3	4
	Modes of inheritance			
	Genetic Testing	2	3	4
	Screening	2	3	4
	Prophylactic intervention	2	3	4
	Therapeutic intervention	2	3	4
	Ethics	2	3	4

ONCOLOGY FOR SURGEONS

OBJECTIVE		ST4	ST6	ST8
The basic understanding of the principles of Surgical Oncology The knowledge of risk factors and presentation of common cancers the knowledge and practice of the basics of management for common cancers The understanding of the ways of evaluating different cancer treatments				
KNOWLEDGE				
Cancer epidemiology and presentations	Aetiology and epidemiology of malignant disease	2	3	4
	Environmental and genetic factors in carcinogenesis	2	3	4
	Evaluate risk factors for malignant disease	2	3	4
	Terminology in epidemiology	2	3	4
Staging, prognosis and treatment planning	Prognosis and natural history of malignant disease	2	3	4
	Mechanisms and patterns in local, regional and distant spread	2	3	4
	Differences in course between hereditary and sporadic cancers	2	3	4
	Diseases predisposing to cancer e.g. inflammatory bowel disease	2	3	4
	Prognostic/predictive factors	2	3	4
	Genetics of hereditary malignant diseases	2	3	4
Cancer Biology	Cancer biology: cell kinetics, proliferation, apoptosis, balance between normal cell death/proliferation; angiogenesis and lymphangiogenesis; genome maintenance mechanisms to prevent cancer; intercellular and intermolecular adhesion mechanisms and signalling pathways; potential effects of surgery and surgery-related events on cancer biology (e.g. angiogenesis)	2	3	4
Tumour immunology	Tumour immunology: cellular and humoral components of the immune system; regulatory mechanisms of immune system; tumour antigeneity; immune mediated antitumour cytotoxicity; effects of cytokines on	2	3	4

	tumours; effects of tumours on antitumour immune mechanisms; potential adverse effects of surgery, surgery-related events (e.g. blood transfusion) on immunologic responses			
Basic principles of cancer treatments and their evaluation	Basic principles of cancer treatment: surgery; radiotherapy; chemotherapy; endocrine therapy; immunotherapy	2	3	4
	Surgical pathology	3	4	4
	Evaluation of response to treatment(s)	2	3	4
	Adverse effects of treatment(s)	2	3	4
	Interactions of other therapies with surgery	2	3	4
	Ability to evaluate published clinical studies	2	3	4
	Relevance of statistical methods; inclusion/exclusion criteria of study objectives; power of the study; intention to treat; number needed to treat; relative and absolute benefit; statistical versus clinical significance	2	3	4
CLINICAL SKILLS				
Cancer epidemiology and presentations	Recognise symptoms and signs of cancer	3	4	4
	Initiate appropriate diagnostic and staging investigations for common solid tumours	3	4	4
Staging, prognosis and treatment planning	Perform prognostic assessment for patients with common solid tumours	3	4	4
	Define the role of surgery for given common solid tumours	2	3	4
	Participation in multi-disciplinary team discussion	2	3	4
	Undertake adequate pre-operative work-up	3	4	4
	Manage post-operative care	3	4	4
	Decide on and perform adequate follow-up	2	3	4
	Diagnose, score and treat side effects and complications of surgical treatment	2	3	4
	Recognise common side effects of other treatment modalities	2	3	4
Basic principles of cancer treatments and their	The conduct of clinical studies	2	3	4

evaluation				
	Design and implement a prospective database (part of audit skills)	2	3	4
	Elementary principles in biostatistics and commonly used statistical methods (parametric versus non-parametric etc.)	2	3	4
	Ethical and legal aspects of research	2	3	4
	Present local audits; publication, presentation of case reports	2	3	4
TECHNICAL SKILLS				
Staging, prognosis and treatment planning	Malignant skin lesion-excision biopsy	3	4	4
	Malignant skin lesion-treatment of melanoma	3	4	4
	Lymph node biopsy-groin, axilla	3	4	4
	Central venous line insertion	4	4	4
	Laparotomy/laparoscopy	2	3	4

ELECTIVE HERNIA

OBJECTIVE

Diagnosis + management, including operative management of primary and most recurrent abdominal wall hernia

	ST4	ST6	ST8
KNOWLEDGE			
Anatomy of inguinal region including inguinal canal, femoral canal, abdominal wall and related structures e.g. adjacent etroperitoneum and soft tissues.	4	4	4
Relationship of structure to function of anatomical structures.	4	4	4
Natural history of abdominal wall hernia including presentation, course and possible complications.	3	4	4
Treatment options	3	4	4
Current methods of operative repair including open mesh, laparoscopic mesh and posterior wall plication, to include the underlying principles, operative steps, risks, benefits, complications and process of each	3	4	4
CLINICAL SKILLS			
Diagnose and assess a patient presenting with abdominal wall hernia, including inguinal, femoral, epigastric, umbilical, paraumbilical, rare hernias such as obturator and Spigelian hernias and incisional hernias	3	4	4
Supervise the postoperative course in hospital and on follow-up	3	3	4
TECHNICAL SKILLS			
Hernia repair-femoral	3	4	4
Hernia repair-incisional	2	3	4
Hernia repair-incisional recurrent	2	3	4
Hernia repair-inguinal	3	4	4
Hernia repair-inguinal recurrent	2	3	4
Hernia repair-umbilical/paraumbilical	3	4	4
Hernia repair-epigastric	3	4	4

NUTRITION

OBJECTIVE

Recognise the need for artificial nutritional support, assess whether this is appropriate and arrange treatment

	ST4	ST6	ST8
KNOWLEDGE			
Effects of malnutrition, both excess and depletion	3	3	4
Methods of screening and assessment	2	3	4
CLINICAL SKILLS			
Arrange access to suitable artificial nutritional support, preferably via a nutrition team	2	3	4
Dietary supplements	2	3	4
Enteral nutrition	2	3	4
Parenteral nutrition	2	3	4

OUTPATIENT SKILLS

OBJECTIVE

Assess individual outpatients adequately, manage a single outpatient clinic.
Individual patient assessment: Ability to assess individual outpatients.
Organise a consultant led OP service

KNOWLEDGE

		ST4	ST6	ST8
Individual patient assessment:	Relevant anatomy, physiology and clinical knowledge for the system involved	4	4	4
Organisation of outpatient service:	Understanding of the administrative system of the hospital	1	2	3
	Relevant guidelines for disease management	2	3	4

CLINICAL SKILLS

Individual patient assessment:	Focused history taking and examination.	4	4	4
	Organise appropriate investigations.	4	4	4
Management of an outpatient clinic:	Ability to allocate patients to appropriate staff members	2	3	4
	Ability to prioritise urgent patient investigations and operation	2	3	4
Organisation of outpatient service:	Prioritisation of patient appointments	2	3	4

TECHNICAL SKILLS

Individual patient assessment:	Sigmoidoscopy-rigid.	4	4	4
	Haemorrhoids-OP treatment(injection/banding or infrared coagulation)	3	4	4

LAPAROSCOPIC SURGERY

Objective
To understand the principles of laparoscopic surgery including technical aspects and common complications

	ST4	ST6	ST8
Knowledge			
Physiology of pneumoperitoneum	3	4	4
Technology of video imaging, cameras and insufflator	3	4	4
Laparoscopic instruments, clips, staplers and port types	3	4	4
Use and dangers of diathermy	3	4	4
Management of equipment failure	2	3	4
Anaesthetic problems in laparoscopic surgery	2	3	4
Informed consent for laparoscopic procedures	3	4	4
Recognition and management of laparoscopic complications	2	3	4
Clinical Skills			
Pre and postoperative management of laparoscopic cases	2	3	4
Port complications	2	3	4
Technical Skills			
Closed and open techniques for port insertion	2	3	4
Diagnostic laparoscopy	2	3	4
Laparoscopic suturing and knotting	2	3	4
Control of laparoscopic bleeding	2	3	4

SUPERFICIAL SEPSIS INCLUDING NECROTISING INFECTIONS

OBJECTIVE

Diagnosis and basic management of gas gangrene and other necrotising infections.

		ST4	ST6	ST8
KNOWLEDGE				
Infected sebaceous cyst / carbuncle	Natural history	4	4	4
	Bacteriology	4	4	4
	Associated medical conditions	4	4	4
Superficial abscess	Aetiology	4	4	4
	Natural history	4	4	4
	Bacteriology	4	4	4
Cellulitis	Aetiology	4	4	4
	Associated medical conditions	4	4	4
	Immunocompromised patients	4	4	4
	Bacteriology	4	4	4
	Antibiotic therapy	4	4	4
Infected ingrowing toenail / paronychia	Aetiology	4	4	4
	Bacteriology	4	4	4
	Atherosclerosis	4	4	4
	Diabetes	4	4	4
Gas gangrene and other Necrotising Infections				
Natural history		4	4	4
Vulnerable individuals		4	4	4
Associated medical conditions	Diabetes, atherosclerosis, Steroids and immunocompromised	4	4	4
Bacteriology and toxins		3	4	4
Mechanisms of septic shock		4	4	4
Appropriate antibiotic therapy		4	4	4
Necrotising fasciitis		4	4	4
CLINICAL SKILLS				
Infected sebaceous cyst / carbuncle	History and examination	4	4	4
	Medical management or diabetes periop	4	4	4
Superficial abscess	History and examination	4	4	4
Cellulitis	History and examination	4	4	4
	IV therapy	4	4	4
Infected ingrowing toenail / paronychia	History and examination	4	4	4
Warning signs of necrotising fasciitis	History and examination	4	4	4

TECHNICAL SKILLS

Infected sebaceous cyst / carbuncle	Abscess drainage (not breast/anal/abdominal)	4	4	4
	Benign skin or subcutaneous lesion - excision biopsy	4	4	4
Superficial abscess	Abscess drainage (not breast/anal/abdominal)	4	4	4
Infected ingrowing toenail / paronychia	Nail avulsion / wedge resection / phenolisation	4	4	4
Radical excisional surgery	Fournier's gangrene, necrotising fasciitis, debridement	2	2	4

ACUTE ABDOMEN

OBJECTIVE
Assessment, resuscitation and management of patients with acute abdomen.

	ST4	ST6	ST8
KNOWLEDGE			
Abdominal anatomy	4	4	4
Aetiology	4	4	4
Pathophysiology of shock	4	4	4
Pathophysiology of peritonitis and sepsis	4	4	4
Differential Diagnosis	4	4	4
CLINICAL SKILLS			
History and examination	4	4	4
Resuscitation	4	4	4
Investigation	3	3	4
Indication for surgery	3	3	4
Ability to perform emergency laparotomy / laparoscopy	3	3	4
TECHNICAL SKILLS			
Central line insertion	4	4	4
Laparotomy	2	3	4
Laparoscopy	2	3	4

ACUTE INTESTINAL OBSTRUCTION

OBJECTIVE
ST4:Recognise and manage acute intestinal obstruction, including supervised laparotomy in straightforward cases
ST6: Recognise and manage most cases of intestinal obstruction

	ST4	ST6	ST8
KNOWLEDGE			
Abdominal anatomy	3	4	4
Aetiology of intestinal obstruction	3	4	4
Pathophysiology of shock / sepsis	3	4	4
Differential diagnosis	3	4	4
Treatment options	3	4	4
CLINICAL SKILLS			
History and examination	4	4	4
Resuscitation	4	4	4
Investigation	3	3	4
Nutritional support	3	3	4
Ability to perform emergency laparotomy	3	3	4
TECHNICAL SKILLS			
Central line insertion	4	4	4
Laparotomy and division of adhesions	2	3	4
Small bowel resection	2	3	4

ACUTE APPENDICITIS

OBJECTIVE
Recognition and management of acute appendicitis

	ST4	ST6	ST8
KNOWLEDGE			
Anatomy of abdomen and pelvis	4	4	4
Natural history of appendicitis	4	4	4
Pathophysiology of appendicitis	4	4	4
Effects of overwhelming sepsis and management	4	4	4
CLINICAL SKILLS			
History and examination	4	4	4
Investigation	4	4	4
Resuscitation	4	4	4
Postoperative management	4	4	4
TECHNICAL SKILLS			
Appendicectomy	4	4	4

PERITONITIS

		ST4	ST6	ST8
OBJECTIVE				
Recognition and management of peritonitis.				
KNOWLEDGE				
Anatomy of abdomen and pelvis		4	4	4
Differential diagnosis		4	4	4
Pathophysiology and treatment	Intraperitoneal sepsis, generalised sepsis, septicaemic shock	4	4	4
Conditions which do not require surgery		4	4	4
CLINICAL SKILLS				
History and examination		4	4	4
Recognition of severity of disease		4	4	4
Investigation		4	4	4
Resuscitation	Including antibiotics, invasive monitoring	4	4	4
Treat symptoms		4	4	4
Recognition of success or failure of non-operative treatment		3	3	4
Ability to perform emergency laparotomy		2	3	4
Timing of intervention		3	4	4
Recognition and management of complications		3	3	4
TECHNICAL SKILLS				
Laparotomy / laparoscopy		2	3	4
Gastro / duodenal - perforated peptic ulcer closure		3	4	4
Hartmann's procedure		2	3	4

STRANGULATED HERNIA

OBJECTIVE
Recognise and treat most common strangulated hernia.
Strangulated inguinal hernia: Recognise and treat strangulated inguinal hernia.
Strangulated femoral hernia: Recognise and treat strangulated femoral hernia, including operative treatment
Strangulated incisional hernia: Recognise and treat strangulated incisional hernia, including operation .
Strangulated internal hernia: Recognise and treat strangulated hernia.

KNOWLEDGE		ST4	ST6	ST8
Strangulated inguinal hernia				
Anatomy	Inguinal and femoral canal	3	4	4
	Abdominal wall, retroperitoneum, soft tissues	3	4	4
Pathophysiology		4	4	4
Postoperative complications		3	3	4
Strangulated femoral hernia				
Anatomy	Inguinal and femoral canal	3	4	4
	Abdominal wall, retroperitoneum, soft tissues	3	4	4
Pathophysiology		4	4	4
Postoperative complications		2	3	4
Strangulated incisional hernia				
Anatomy of abdominal wall		3	4	4
Pathophysiology		4	4	4
Postoperative complications		2	3	4
Strangulated internal hernia				
Anatomy		3	4	4
Pathophysiology		4	4	4
Postoperative complications		3	4	4
CLINICAL SKILLS				
History and examination		4	4	4
Resuscitation		4	4	4
Investigation of possible strangulated hernia	Inguinal	3	4	4

	Femoral	3	4	4
	Incisional	3	4	4
	Internal	3	4	4
Operative strategy	Strangulated inguinal hernia	2	3	4
	Strangulated femoral hernia	2	3	4
	Strangulated incisional hernia	2	3	4
	Strangulated internal hernia	2	3	4
Postoperative complications		2	3	4
TECHNICAL SKILLS				
Small bowel resection		2	3	4
Repair - inguinal hernia		2	4	4
Repair - femoral hernia		2	3	4
Repair - incisional hernia		2	3	4
Repair internal hernia		2	3	4

ACUTE GYNAECOLOGICAL DISEASE

		ST4	ST6	ST8
OBJECTIVE To Recognise, manage and appropriately refer acute gynaecological disease.				
KNOWLEDGE				
Pelvic inflammatory disease/Endometriosis/salpingitis				
	Anatomy of pelvis	4	4	4
	Physiology of pelvic organs	4	4	4
	Infective intra-abdominal conditions	3	3	4
	Appropriate management - antibiotics - referal pathway	3	4	4
Obstruction secondary to ovarian carcinoma				
	Anatomy of pelvis	4	4	4
	Physiology of pelvic organs	4	4	4
	Investigation of obstructed colon	3	3	4
	Management of ovarian carcinoma	2	2	2
Intra-abdominal haemorrhage from ruptured ovarian cyst / ectopic pregnancy				
	Anatomy of pelvis	4	4	4
	Physiology of pelvic organs	4	4	4
	Management of diagnosed condition	2	2	3
Iatrogenic injury				
	Anatomy of pelvis	4	4	4
	Physiology of pelvic organs	4	4	4
CLINICAL SKILLS				
Pelvic inflammatory disease/Endometriosis/salpingitis	History and examination	4	4	4
	Organise pelvic ultrasound / pregnancy test	3	3	4
	CT scan / tumour markers	3	3	4
	Ability to perform diagnostic laparoscopy / laparotomy	2	3	4
Obstruction secondary to ovarian carcinoma	History and examination	4	4	4

	Nonoperative management	2	2	3
	Perform emergency laparotomy	2	2	4
Intra-abdominal haemorrhage of gynaecology origin	History and examination	4	4	4
	Organise pelvic ultrasound and pregnancy test	3	3	4
	Ability to perform diagnostic laparotomy / laparoscopy	2	3	4
Iatrogenic injury	Recognition of nature and extent of injury	3	3	4
	Ability to perform emergency laparotomy	2	3	4
TECHNICAL SKILLS				
Laparotomy / laparoscopy		3	3	4
Hartmann's procedure		2	3	4
Sigmoid colectomy		2	3	4

GASTROINTESTINAL BLEEDING

OBJECTIVE
Assessment of all cases of gastrointestinal bleeding, management and referral to subspecialists as needed.
Blood loss and Hypotension: Understanding and management of blood loss.
Recognition of cause: Assessment of likely cause of GI bleeding and basic diagnostic endoscopy.
Treatment: Assessment and management of all cases of gastrointestinal bleeding with referral to subspecialist if needed.
Postoperative care: Post-op care of patients who have had surgery for GI bleeding.
Complications: Manage complications after GI bleeding

		ST4	ST6	ST8
KNOWLEDGE				
Blood loss and hypotension	Physiology of hypovolaemia	4	4	4
	Coagulopathy	3	4	4
Recognition of all causes of GI bleeding		4	4	4
Treatment	Treatment options	2	3	4
	Indications for operation	2	3	4
	Role of endoscopic procedures and therapeutic radiology	2	3	4
Postoperative care	Fluid balance	3	4	4
Complications	Emergency complications	2	3	4
CLINICAL SKILLS				
Blood loss and hypotension	Resuscitation of hypotensive patient	4	4	4
	HDU care	2	3	4
Cause of bleeding	Clinical assessment	4	4	4
	Organise appropriate endoscopy or other investigation	2	4	4
Treatment	Appropriate surgery	2	3	4
Postoperative care	Analgesia	4	4	4
	Nutrition	2	3	4
	Recognition of complications	2	3	4
Complications	Rebleeding and postoperative problems - early recognition	3	4	4
	Treatment of complications	1	2	4
TECHNICAL SKILLS				
Diagnostic gastroscopy		2	3	4
Flexible sigmoidoscopy		2	3	4

ABDOMINAL INJURIES

		ST4	ST6	ST8
OBJECTIVE				
Identify and manage the majority of abdominal injuries				
KNOWLEDGE				
Anatomy of abdomen		4	4	4
Aetiology		4	4	4
Pathophysiology of shock		4	4	4
Differences in Children		4	4	4
Principles of management of severely injured patients		4	4	4
Importance of mechanism of injury	Gun shot, stabbing, seat belt	4	4	4
Indications for uncross matched blood		4	4	4
Coagulopathy		4	4	4
Pathophysiology of peritonitis and sepsis		4	4	4
CLINICAL SKILLS				
History and examination		4	4	4
Resuscitation		4	4	4
Investigation		4	4	4
Appropriate use of CT and ultrasound		4	4	4
Indications for intervention		4	4	4
Recognition of injuries requiring other specialties		3	4	4
Management of hollow organ injury		3	4	4
TECHNICAL SKILLS				
Central line insertion		4	4	4
Diagnostic peritoneal lavage		4	4	4
Laparotomy / laparoscopy		3	4	4
Laparotomy - trauma		3	3	4
Liver trama - debridement / packing		2	3	4
Pancreatectomy - distal		2	2	3
Splenectomy		3	3	4
Splenic repair		2	2	4
Management of hollow organ injury		2	3	4

BLUNT AND PENETRATING INJURIES

OBJECTIVE

Assessment and management of blunt and penetrating injury.
Closed thoracic injury: Assessment and emergency management of blunt injury of the thorax.
Penetrating thoracic injury: Assessment and emergency management of penetrating injury of the thorax.
Closed and penetrating abdominal injury: Assessment and management of blunt and penetrating abdominal injury.
Blunt and penetrating soft tissue and skeletal injury: Assessment and management of blunt and penetrating injury of the soft tissues and skeleton.

		ST4	ST6	ST8
KNOWLEDGE				
Closed thoracic injury	Anatomy	4	4	4
	Concept of low energy, high energy transfer injury	2	3	4
	Pathogenesis of shock	3	4	4
Penetrating thoracic injury	Anatomy	4	4	4
	Concept of low energy, high energy transfer injury	2	3	4
	Pathogenesis of shock	3	4	4
Closed and penetrating abdominal injury	Anatomy	4	4	4
	Concept of energy, low high energy transfer injury	2	3	4
	Pathogenesis of shock	3	4	4
Blunt and penetrating soft tissue and skeletal injury	Anatomy	4	4	4
	Concept of low energy, high energy transfer injury	2	3	4
	Pathogenesis of shock	3	4	4
CLINICAL SKILLS				
Closed thoracic injury	Assessment and initial management of multiply injured patient	3	4	4
	Recognise need for operative intervention and organise	2	3	4
	Understand indications for ER thoracotomy	1	2	3
	Postoperative management and recognition of complications	3	3	4
Penetrating thoracic injury	Assessment and initial management of multiply injured	3	4	4

	patient			
	Recognise need for operative intervention and organise	2	3	4
	Recognise and treat sucking chest wound	3	3	4
	Understand indications for ER thoracotomy	1	2	3
	Postoperative management and recognition of complications	3	3	4
Closed and penetrating abdominal injury	Assessment and initial management of multiply injured patient	3	4	4
	Recognise need for laparotomy and organise	2	3	4
	Arrest haemorrhage by suture/ligation/packing	1	2	4
	Indication for pelvic fixator	1	2	3
	Drains for biliary / pancreatic injury	1	2	3
	Management of retroperitoneal haematoma	1	2	4
	Postoperative management and recognition of complications	2	3	4
Blunt and penetrating soft tissue and skeletal injury	Assessment and initial management of multiply injured patient	3	4	4
	Arrest haemorrhage by pressure and tourniquet	3	3	4
	Appropriate immobilisation during assessment	3	4	4
	Recognition of major vascular trauma	2	3	4
	Assessment of ischaemic limb	2	4	4
	Recognition and treatment of acute compartment syndrome	2	3	4
	Femoral artery exposure	2	3	4
	Postoperative management and recognition of complications	3	3	4
TECHNICAL SKILLS				
Closed thoracic injury	Chest drain insertion	4	4	4
	Lateral thoracotomy	1	2	3
Penetrating thoracic injury	Chest drain insertion	4	4	4
	Lateral thoracotomy	1	2	3
Closed and penetrating abdominal injury	Diagnostic peritoneal lavage	3	4	4
	Laparotomy - trauma	2	3	4
	Splenectomy	2	3	4
	Small bowel resection	2	3	4
	Ileostomy - construction	2	4	4
	Colostomy - construction	2	4	4

GASTRO-OESOPHAGEAL REFLUX DISEASE

OBJECTIVES

Assessment and management of patients presenting with GORD

		ST4	ST6	ST8
KNOWLEDGE				
Anatomy	Lower third of oesophagus; oesophageal sphincter	4	4	4
Pathophysiology	Acid or bile reflux; pH abnormalities; motility disorder	3	4	4
Pathology	Classification of oesophagitis	3	4	4
Complications	Barrett's metaplasia; stricture	3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	Endoscopy, pH studies, Manometry	3	4	4
Decision making	Indications for surgery	2	3	4
Non operative options	Medical management; postural changes	3	4	4
Operative options	Indications for surgery; antireflux surgery - open or laparoscopic	2	3	4
Postoperative management		2	4	4
TECHNICAL SKILLS				
Endoscopy		2	3	4
Antireflux surgery		2	3	4
Revisional antireflux surgery		1	2	4

HIATUS HERNIA

OBJECTIVES
Assessment of patients presenting with hiatus hernia

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy	Sliding; para-oesophageal	4	4	4
Pathophysiology		3	4	4
Pathology		3	4	4
Complications	Incarceration	2	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	Contrast radiology; manometry	4	4	4
Decision making	Indications for operation	2	3	4
Non operative options	Medical management: weight loss, posture	3	4	4
Postoperative management		2	4	4
TECHNICAL SKILLS				
Endoscopy		2	4	4
Open repair		1	2	4
Laparoscopic repair		1	2	4
Revisional antireflux surgery		1	2	4

PEPTIC STRICTURE

OBJECTIVES
Assessment and management of patients presenting with peptic stricture

		ST4	ST6	ST8
KNOWLEDGE				
Anatomy		4	4	4
Pathophysiology	Physiology of reflux - pH; motility	3	4	4
Pathology	Differential diagnosis	3	4	4
Complications	Perforation	3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	Endoscopy; contrast radiology; pH studies; manometry	3	4	4
Decision making	Indications for dilatation	3	4	4
Postoperative management	Diagnosis and management of perforation	3	4	4
TECHNICAL SKILLS				
Endoscopy		2	3	4
Oesophageal dilatation		1	2	4

ACHALASIA

OBJECTIVES
Assessment and management of patients presenting with achalasia

	ST4	ST6	ST8
KNOWLEDGE			
Anatomy	4	4	4
Pathophysiology	4	4	4
Pathology	4	4	4
Complications	3	4	4
CLINICAL SKILLS			
History and Examination	4	4	4
Investigation	3	4	4
Decision making	2	3	4
Non operative options	2	4	4
Postoperative management	3	4	4
TECHNICAL SKILLS			
Endoscopy	2	3	4
Endoscopic dilation	N/A	2	4
Endoscopic botox injection	N/A	2	4
Laparoscopic cardiomyotomy	N/A	2	4

MOTILITY DISORDERS

OBJECTIVES
Assessment and management of patients presenting with oesophageal motility disorders

	ST4	ST6	ST8
KNOWLEDGE			
Anatomy	4	4	4
Pathophysiology	4	4	4
Pathology	4	4	4
Complications	3	4	4
CLINICAL SKILLS			
History and Examination	2	4	4
Investigation	2	4	4
Decision making	2	3	4
Non operative options	2	3	4
Postoperative management	3	4	4
TECHNICAL SKILLS			
Endoscopy	2	3	4

IATROGENIC OESOPHAGEAL PERFORATION

OBJECTIVES
Ability to manage oesophageal emergencies.
Diagnosis: Diagnosis of oesophageal emergencies.
Management: Ability to manage rupture of the oesophagus
Operation: Operative treatment of rupture of the oesophagus
Post-operative care: Postoperative care of all patients with oesophageal emergencies.

		ST4	ST6	ST8
KNOWLEDGE				
Anatomy	Oesophagus and mediastinal relationships	4	4	4
Clinical presentation	Post-instrumentation	4	4	4
Investigation	Contrast radiology	3	4	4
Pathophysiology	Mediastinitis	3	4	4
Complications	Empyema	3	4	4
CLINICAL SKILLS				
History and Examination		3	3	4
Investigation		3	3	4
Decision making		2	3	4
Non-operative treatment	Pleural drainage; antibiotics; nutritional support	2	3	4
Interventional options		2	3	4
Postoperative management		2	3	4
TECHNICAL SKILLS				
Endoscopy		3	4	4
Endoscopic interventions incl stent		2	3	4
Thoracotomy + lavage		1	3	4
Oesophagectomy		1	3	4

BOERHAAVE'S PERFORATION

OBJECTIVES
Ability to manage oesophageal emergencies.
Diagnosis: Diagnosis of oesophageal emergencies.
Management: Ability to manage rupture of the oesophagus
Operation: Operative treatment of rupture of the oesophagus .
Post-operative care: Postoperative care of all patients with oesophageal emergencies.

		ST4	ST6	ST8
KNOWLEDGE				
Anatomy		4	4	4
Pathophysiology	Aetiology	3	4	4
Clinical presentation		3	4	4
Investigations	Contrast radiology	3	4	4
Complications	Empyema	3	4	4
CLINICAL SKILLS				
History and Examination		2	3	4
Investigation		2	3	4
Decision making		2	3	4
Non-operative treatment		2	3	4
Interventional options	Primary repair; nutritional support	2	3	4
Postoperative management		2	3	4
TECHNICAL SKILLS				
Endoscopy		3	4	4
Thoracotomy + non-resectional management		1	3	4
Oesophagectomy		1	3	4

OESOPHAGEAL CANCER

OBJECTIVES
Assessment and management of patients presenting with oesophageal carcinoma

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy	Oesophageal and Oesophago-gastric junctional cancer; lymph node	2	3	4
Pathology	Epidemiology; aetiology : SCC or ACA	3	4	4
	Staging - TNM	3	3	4
Clinical Presentation	Dysphagia	4	4	4
Investigations	CT; Endoscopic ultrasound; PET-CT; laparoscopy	2	3	4
Complications		3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	Endoscopy; CT; EUS; PET-CT; Laparoscopy	4	4	4
Decision making	Assessment of medical comorbidity for radical therapy	2	4	4
	Nutritional support	2	3	4
Chemotherapy	Neoadjuvant	2	3	4
Radiotherapy	Combination with chemotherapy	2	3	4
	Difference in treatment for SCC or ACA	2	3	4
Other non-operative treatment incl palliation	Palliative treatment; pain control	2	3	4
Indications for surgery		2	4	4
Postoperative management	Anastomotic leak; chylothorax; recurrent laryngeal nerve injury	3	4	4
Follow-up	Detection of recurrence	2	3	4
TECHNICAL SKILLS				
Endoscopy		1	3	4
Endoscopic palliation incl stenting		1	2	4
EMR		N/A	1	2
Open Oesophagogastrectomy	2 field lymph node dissection	1	2	4
	Transthoracic	1	2	4
	Transhiatal	1	2	4
MIO		N/A	1	3

OESOPHAGEAL VARICES

OBJECTIVES
Assessment and management of patients presenting with oesophageal varices

		ST4	ST6	ST8
KNOWLEDGE				
Anatomy		3	4	4
Pathophysiology	Aetiology of portal hypertension	3	4	4
Clinical presentation		3	4	4
Diagnosis		3	4	4
Treatment options	Endoscopic - injection, banding; Sengstaken tube	3	4	4
Indications for surgery		3	4	4
Complications	Child's classification of liver disease	3	4	4
CLINICAL SKILLS				
History and Examination		2	3	4
Investigation	Endoscopic assessment	2	3	4
Resuscitation		2	3	4
Decision making		2	3	4
Non-operative treatment	Sclerotherapy	2	3	3
Operative options	Porto-caval shunt; Oesophageal transection	2	3	3
Postoperative management		2	3	4
TECHNICAL SKILLS				
Endoscopy		2	4	4
Variceal injection		1	2	3
Balloon tamponade		2	2	3

GASTRIC ULCER

OBJECTIVES
Assessment and management of patients presenting with gastric ulcer

		ST4	ST6	ST8
KNOWLEDGE				
Anatomy		4	4	4
Pathophysiology		3	4	4
Clinical presentation	Differential diagnosis of cancer	3	4	4
Complications	Perforation; bleeding; pyloric stenosis	3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	Endoscopy and biopsy	4	4	4
Decision making	Indications for surgery	3	4	4
Operative options		3	4	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Endoscopy		3	4	4
Endoscopic therapy		2	3	4
Laparoscopy		3	3	4
Local treatment, ulcer excision		3	4	4
Gastroenterostomy		3	4	4
Partial gastrectomy		2	4	4
Total gastrectomy		2	3	4

DUODENAL ULCER

OBJECTIVES
Assessment and management of patients with duodenal ulceration and its complications

		ST4	ST6	ST8
KNOWLEDGE				
Clinical presentation		3	4	4
Pathophysiology		3	4	4
Complications	Perforation; bleeding; pyloric stenosis	3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	OGD	4	4	4
Resuscitation		4	4	4
Decision making	Indications for operation	3	4	4
Operative options		3	4	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Endoscopy		3	4	4
Endoscopic therapy		2	3	4
Laparoscopy		3	4	4
Local treatment, ulcer underrun/oversew		3	4	4
Gastroenterostomy		3	4	4
Partial gastrectomy		2	4	4
Vagotomy and pyloroplasty		2	3	4

GASTRIC AND DUODENAL POLYPS

OBJECTIVES
Assessment and management of patients presenting with gastric and duodenal polyps

		ST4	ST6	ST8
KNOWLEDGE				
Anatomy		4	4	4
Clinical presentation	Incidental; bleeding;	3	4	4
Pathology	Adenoma; hamartoma; GIST; FAP	3	4	4
Complications	Malignant change	3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	OGD & polypectomy	4	4	4
Decision making		2	4	4
Operative options		3	4	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Endoscopy		3	4	4
Endoscopic excision		2	4	4
EMR		1	2	3
Laparoscopy		3	4	4
Open excision		2	4	4
Partial gastrectomy		2	4	4

ACUTE GASTRIC PERFORATION

OBJECTIVES

Diagnosis and management of perforated peptic ulcer.
Diagnosis and preop management: Diagnosis of perforated peptic ulcer and assess for operation.
Operative management: Operation for perforated peptic ulcer.
Postoperative management: postoperative management of patients who have had surgery for perforated peptic ulcer.

		ST4	ST6	ST8
KNOWLEDGE				
Anatomy		4	4	4
Pathophysiology		3	4	4
Differential diagnosis	Perforated gastric ulcer; duodenal ulcer; perforated cancer	3	4	4
Complications	Subphrenic abscess	3	4	4
CLINICAL SKILLS				
History and Examination	Assessment of peritonitis	4	4	4
Investigation		4	4	4
Resuscitation		4	4	4
Decision making	Medical comorbidity	3	4	4
Operative options	Local excision; resection	3	4	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Laparoscopy		3	4	4
Local treatment, ulcer excision		3	4	4
Partial gastrectomy		2	4	4
Total gastrectomy		2	3	4

ACUTE UPPER GI HAEMORRHAGE

OBJECTIVES
Endoscopic diagnosis of upper GI haemorrhage, endoscopic management of most cases,
operative management of cases where endostasis has failed, including management of complications.
Diagnosis: Endoscopic diagnosis of upper GI haemorrhage.
Management: Endoscopic management of most cases of upper GI haemorrhage, operative management where endostasis has failed.
Post-operative care: Post-operative care of all patients who have had surgery for UGI haemorrhage, including management of complications.

		ST4	ST6	ST8
KNOWLEDGE				
Anatomy		4	4	4
Pathophysiology	Aetiology	3	4	4
Differential diagnosis	Benign ulcer; cancer; vascular malformation; GIST	3	4	4
Complications	Hypovolaemic shock	3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	Endoscopy	3	3	4
Resuscitation	Management of hypovolaemic shock	4	4	4
Decision making	Indications for intervention	3	4	4
Non-operative treatment	Injection scleotherapy	3	4	4
Operative options		3	4	4
Postoperative management	Re-bleeding	3	4	4
TECHNICAL SKILLS				
Endoscopy		2	4	4
Endoscopic therapy		2	3	4
Gastrotomy + non-resectional treatment	Need for histology of ulcer edge	2	4	4
Partial gastrectomy		2	4	4
Total gastrectomy		2	3	4

ACUTE GASTRIC DILATION

OBJECTIVES
Assessment and management of patients presenting with acute gastric dilatation

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy		4	4	4
Pathophysiology	Spontaneous; postsplenectomy	3	4	4
Clinical presentation		3	4	4
Complications		3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	Contrast radiology; CT	4	4	4
Resuscitation		4	4	4
Decision making		2	4	4
Non-operative treatment	Naso-gastric aspiration	3	4	4
Operative options		3	4	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Endoscopy		2	4	4
Gastrectomy		2	3	4

ACUTE GASTRIC VOLVULUS

OBJECTIVES
Assessment and management of patients presenting with acute gastric volvulus

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy	Para-oesophageal hernia	4	4	4
Pathophysiology		3	4	4
Clinical presentation		3	4	4
Investigation	Contrast radiology; CT	3	4	4
Complications	Gastric necrosis	3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation		4	4	4
Resuscitation	Fluid resuscitation	4	4	4
Decision making	Indications for surgery	2	4	4
Operative options	Endoscopic reduction; urgent or delayed surgery	3	4	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Endoscopy		2	4	4
Gastropexy		2	3	4
Hiatus hernia repair		2	3	4
Total Gastrectomy		2	3	4

GASTRIC CARCINOMA

OBJECTIVES
Assessment and management of patients presenting with gastric cancer

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy	Arterial blood supply; Lymph node tiers	3	4	4
Pathology	Epidemiology; Aetiology - Helicobacter	3	4	4
	Stage - TNM; pattern of spread	3	4	4
Clinical presentation	Early gastric cancer; advanced gastric cancer	3	4	4
Investigation	Endoscopy, CT, EUS, Laparoscopy	4	4	4
Complications		4	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	Endoscopy; CT; EUS; laparoscopy	3	4	4
Decision making	Comorbidity assessment; nutritional support	2	4	4
Chemotherapy	Neoadjuvant; adjuvant	2	3	4
Chemoradiotherapy	Adjuvant	2	3	4
Other non-operative treatment incl palliation,	Chemotherapy; pain control	2	3	4
Interventional options	Endoscopic; resectional; extended lymphadenectomy	2	4	4
Postoperative management	Anastomotic leak; Duodenal stump disruption	3	4	4
TECHNICAL SKILLS				
Endoscopy		3	4	4
Endoscopic palliation incl stenting		1	2	4
EMR		1	1	3
Gastrojejunostomy		2	4	4
Palliative gastrectomy		2	3	4
D2 Subtotal gastrectomy		2	3	4
D2 Total gastrectomy		2	3	4

GIST

OBJECTIVES
Assessment and management of patients presenting with gastrointestinal stromal tumours

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy		4	4	4
Clinical presentation	Incidental; upper GI bleed	3	4	4
Pathology	"Benign" vs malignant	3	4	4
Complications		3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	OGD +/- biopsy; CT	4	4	4
Decision making		2	4	4
Chemotherapy	Imatinib	2	3	4
Operative options	Resection; excision	3	4	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Endoscopy		3	3	4
Laparoscopy		3	4	4
Open excision		2	4	4
Small bowel resection		3	4	4
Partial gastrectomy		2	4	4
Total gastrectomy		2	3	4

GASTRIC LYMPHOMA

OBJECTIVES
Assessment and management of patients presenting with gastric lymphoma

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy		4	4	4
Clinical presentation		3	4	4
Investigation	Endoscopy, CT, PET-CT	3	4	4
Pathology	Extranodal lymphoma.; MALToma	3	4	4
Complications	Perforation on treatment	3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	Endoscopy; CT; PET-CT	4	4	4
Decision making		2	4	4
Medical management	Chemotherapy; Helicobacter eradication	2	3	4
Interventional options		2	4	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Endoscopy		2	3	4
Gastrojejunostomy		2	4	4
Total gastrectomy		2	3	4

MORBID OBESITY

OBJECTIVES
Basic management of the patient who is morbidly obese and an understanding of the surgical treatment of morbid obesity including early and late complications. A knowledge of the different patterns of presentations complications

	ST4	ST6	ST8
KNOWLEDGE			
Indications for surgery in morbid obesity	3	4	4
	3	4	4
Therapeutic options for morbid obesity. Types of operations performed			
General principles of the management of the obese patient perioperatively	4	4	4
Long term management of the bariatric patient post surgery	3	4	4
CLINICAL SKILLS			
History and Examination of the Obese patient	4	4	4
Assessment of the post operative bariatric patient	3	4	4
Interpretation of Investigations in the obese patient	3	4	4
	3	4	4
Management decisions for early and late complications of morbid obesity			
TECHNICAL SKILLS			
Laparoscopic access in the morbidly obese	1	2	4
Aspiration of lap band port	1	2	4
Emergency release of lap band for slippage	1	2	4
Insertion of lap band	1	2	3
Repair of internal hernia after gastric bypass	2	2	4
Roux en Y gastric bypass		1	2
Revisional gastric surgery for obesity		1	2
General Surgery for the super morbidly obese patient	1	2	4

GALLSTONE DISEASE

OBJECTIVES

Diagnosis and management of acute gallstone disease, including operation.
Acute gall stone disease including acute cholecystitis, empyema, acute biliary colic and cholangitis. Diagnosis and management of acute gallstone disease, including operation

		ST4	ST6	ST8
KNOWLEDGE				
Anatomy		4	4	4
Pathophysiology		4	4	4
Microbiology		4	4	4
Complications	Acute cholecystitis	3	4	4
	Empyema	3	4	4
	Mucocoele	3	4	4
	Acute pancreatitis	3	4	4
	Chronic cholecystitis	3	4	4
	Common bile duct stone	3	4	4
	Gall stone ileus	3	4	4
	Gall bladder cancer	3	4	4
Postoperative problems	Bile duct injury	3	4	4
CLINICAL SKILLS				
History and Examination	Acute / Emergency	4	4	4
	Elective	4	4	4
Investigation	U/S; ERCP; MRCP; CT	3	4	4
Resuscitation		2	4	4
Decision making		3	4	4
Non-operative treatment	ERCP; U/S Cholecystostomy	3	4	4
Operative options	Lap chole	3	4	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Cholecystectomy - lap / open		2	3	4
Exploration CBD		2	3	4
Hepaticodocho-jejunostomy		1	2	3

ACUTE PANCREATITIS

OBJECTIVES

Diagnosis and management of most patients with acute pancreatitis with operation where appropriate.

KNOWLEDGE		ST4	ST6	ST8
Applied Anatomy		4	4	4
Pathophysiology	Severity of pancreatitis - scoring systems	4	4	4
Microbiology		4	4	4
Clinical presentation		4	4	4
Investigations	CT; ERCP	4	4	4
Complications		3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation		4	4	4
Resuscitation		4	4	4
Decision making		3	4	4
Non-operative treatment incl nutrition, use of antibiotics		2	4	4
Interventional options	ERCP, radiological drainage	3	3	4
Postoperative management	Abscess; Pseudocyst; Haemorrhage	3	4	4
TECHNICAL SKILLS				
Cholecystectomy		2	3	4
Exploration CBD		2	3	4
ERCP		1	2	3
Necrosectomy		1	2	3
Pseudocyst drainage		1	2	3

CHRONIC PANCREATITIS

OBJECTIVES
Assessment and management of patients with chronic pancreatitis

	ST4	ST6	ST8
KNOWLEDGE			
Applied Anatomy	4	4	4
Pathophysiology	4	4	4
Clinical presentation	3	4	4
Investigation	3	4	4
Complications	3	4	4
Postoperative problems	3	4	4
CLINICAL SKILLS			
History and Examination	4	4	4
Investigation	4	4	4
Resuscitation	4	4	4
Decision making	3	4	4
Non-operative treatment incl ERCP	2	4	4
Operative options	3	4	4
Postoperative management	3	4	4
TECHNICAL SKILLS			
ERCP	1	2	3
Pancreaticojejunostomy	1	2	3
Pancreaticoduodenectomy	1	2	3
Distal pancreatectomy	1	2	4
Hepaticodocho-jejunostomy	1	2	3
Pseudocyst drainage	1	2	3

PANCREATIC CANCER /
PERIAMPULLARY CANCER

OBJECTIVES
Assessment and management of patients with pancreatic and ampullary cancer

		ST 4	ST 6	ST 8
KNOWLEDGE				
Applied Anatomy		4	4	4
Pathophysiology	Epidemiology; aetiology	4	4	4
	Stage - TNM	3	4	4
Pathology	ACA pancreas; ampullary	4	4	4
Clinical presentation	Painless Jaundice; Pain	4	4	4
Investigation	CT; MRCP; MRI; EUS	3	4	4
Complications		4	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	CT; MRCP; MRI; EUS	4	4	4
Decision making	Comorbidity; Nutritional assessment	3	4	4
Non-operative treatment incl palliation, nutrition		3	4	4
Interventional options e.g. ERCP, PTC		3	4	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Pancreaticoduodenectomy		1	2	3
Distal pancreatectomy		1	2	4
ERCP		1	2	3
Biliary bypass		1	3	4
Gastroenterostomy		1	3	4

CYSTIC TUMOURS

OBJECTIVES
Assessment and management of patients with cystic tumours of the pancreas

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy		4	4	4
Pathophysiology	Epidemiology; aetiology	4	4	4
Pathology	Benign; Malignant	3	4	4
Clinical presentation		3	4	4
Investigation	CT; MRCP; EUS	3	4	4
Complications		3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	CT; MRCP; EUS	3	4	4
Decision making		2	3	4
Non-operative treatment incl palliation, nutrition		2	3	4
Interventional options e.g. ERCP, PTC		2	3	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Pancreaticoduodenectomy		1	2	3
Distal pancreatectomy		1	2	4
ERCP		1	2	3
Biliary bypass		1	3	4
Gastroenterostomy		1	3	4

NEUROENDOCRINE TUMOURS

OBJECTIVES
Diagnosis, assessment and management of pancreatic endocrine tumours (level of involvement in diagnosis and operation may vary between HPB and endocrine units).
Diagnosis: Diagnosis and assessment of possible pancreatic endocrine tumours, often in consultation with other specialists.
Management: Management of pancreatic endocrine tumours, level of operative skill expected dependent on local arrangements.
Post-operative care: Management of both immediate and longterm care after surgery for pancreatic endocrine tumour.

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy		4	4	4
Pathophysiology		4	4	4
Pathology	Functioning; Non-functioning	3	4	4
Clinical presentation	Symptoms of functioning tumour	3	4	4
Investigation	CT; EUS; MRCP	3	4	4
Complications		3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	CT; EUS; MRCP	3	4	4
Decision making		3	3	4
Non-operative treatment incl palliation, nutrition		2	3	4
Interventional options e.g. ERCP, PTC		2	3	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Pancreaticoduodenectomy		1	2	3
Distal pancreatectomy		1	2	4
Enucleation		1	2	4
ERCP		1	2	3
Biliary bypass		1	3	4
Gastroenterostomy		1	3	4

INTRADUCTAL PAPILLARY MUCINOUS NEOPLASMS

OBJECTIVES
Assessment and management of IPMN

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy		4	4	4
Pathophysiology	IPMN	2	3	4
Pathology		2	3	4
Complications		3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation		3	4	4
Decision making		2	3	4
Non-operative treatment incl palliation, nutrition		2	3	4
Interventional options e.g. ERCP, PTC		2	3	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Pancreaticoduodenectomy		1	2	3
Distal pancreatectomy		1	2	4
Total pancreatectomy		1	2	3
ERCP		1	2	3
Biliary bypass		1	3	4
Gastroenterostomy		1	3	4

PANCREATIC TRAUMA

OBJECTIVES
Assessment and management of patients with pancreatic trauma

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy		4	4	4
Pathophysiology		4	4	4
Clinical presentation	Blunt and abdominal injury	3	4	4
Investigation	CT; MRI	3	4	4
Complications	Pancreatic fistula	3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	CT; MRI; Laparoscopy	3	4	4
Resuscitation		4	4	4
Decision making		2	3	4
Non-operative treatment		2	3	4
Interventional options e.g. ERCP, radiological drainage		2	3	4
Postoperative management	Pancreatic fistula; Nutritional support	3	4	4
TECHNICAL SKILLS				
Cholecystectomy		2	3	4
Debridement & drainage		1	2	4
Pancreaticojejunostomy		1	2	3
Pancreaticoduodenectomy		1	2	3
Distal pancreatectomy		1	2	4
Pseudocyst drainage		1	2	3

LIVER METASTASES

OBJECTIVES
Assessment and management of liver metastases.

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy	Segments of the liver	4	4	4
Pathophysiology	Liver function	3	4	4
Pathology	Solitary; multiple; extrahepatic synchronous disease; colorectal; non-colorectal	3	4	4
Clinical Presentation		3	4	4
Complications		3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	CT; PET-CT; MRI	4	4	4
Decision making including scheduling treatment		3	4	4
Non-operative treatment incl chemotherapy and biological therapy		3	4	4
Interventional options e.g. ablation	Radiofrequency ablation; resection	3	4	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Major hepatectomy	Intra-operative ultrasound	1	2	3
Extended hepatectomy		1	2	3
Peripheral wedge or segmental resection		1	2	4

PRIMARY LIVER CANCER

OBJECTIVES
Assessment and management of primary liver cancer

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy		4	4	4
Pathophysiology	Hepatitis C	3	4	4
Pathology	Differential diagnosis; HCC	3	4	4
Clinical Presentation		3	4	
Complications		3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation		4	4	4
Decision making		3	4	4
Assessment and management of liver insufficiency	Child's classification	3	4	4
Non-operative treatment incl chemoembolisation and biological therapy		3	4	4
Interventional options e.g. ablation		3	4	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Major hepatectomy		1	2	3
Peripheral wedge or segmental resection		1	2	3

HILAR TUMOURS AND GALLBLADDER CANCER

OBJECTIVES

Assessment and management of hilar and gallbladder cancer

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy		4	4	4
Pathophysiology	Incidental finding at Cholecystectomy	3	4	4
Pathology	Classification of hilar tumours	3	4	4
Clinical presentation		3	4	4
Complications		3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	ERCP; MRCP; CT; MRI	4	4	4
Decision making		3	4	4
Non-operative treatment incl PDT, brachytherapy		3	4	4
Interventional options e.g. stenting		3	4	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Extended hepatectomy		1	2	3
Central liver resection		1	2	3
Hepatic artery lymphadenectomy		1	2	3
Hepaticodochojejunostomy		1	2	3

BENIGN AND CYSTIC TUMOURS

OBJECTIVES

Assessment and management of benign and cystic tumours of the liver

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy		4	4	4
Pathophysiology	Simple cysts; complex cysts; hydatid disease	3	4	4
Pathology		3	4	4
Clinical Presentation		3		
Complications		3	4	4
CLINICAL SKILLS				
History and Examination		3	4	4
Investigation	CT; MRI	3	4	4
Decision making		3	4	4
Non operative options e.g. medical treatment of hydatid disease		3	4	4
Interventional options e.g. embolisation		3	4	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Fenestration		1	2	3
Liver resection		1	2	3

LIVER TRAUMA

OBJECTIVES
Diagnosis and early management of liver trauma including laparotomy and liver packing or resection.

		ST4	ST6	ST8
KNOWLEDGE				
Applied Anatomy	Segments of the liver	3	4	4
Pathophysiology		3	4	4
Clinical Presentation	Blunt and penetrating injury	4	4	4
Investigations	CT	3	4	4
Complications	Haemobilia	3	4	4
CLINICAL SKILLS				
History and Examination		4	4	4
Investigation	CT	4	4	4
Resuscitation		4	4	4
Decision making		3	4	4
Non-operative treatment		2	4	4
Interventional options e.g. hepatic artery embolisation	Laparotomy for haemoperitoneum	3	3	4
Postoperative management		3	4	4
TECHNICAL SKILLS				
Salvage surgery e.g. packing		1	2	4
Debridement & hepatectomy		1	2	3

SURGICAL NUTRITION

OBJECTIVES
Recognise the need for artificial nutritional support, assess whether this is appropriate and manage treatment with enteral an parenteral nutrition

		ST4	ST6	ST8
KNOWLEDGE				
Physiology of the GI tract		4	4	4
Assessment of nutritional status	Understanding the role of the Nutrition team	2	3	4
Causation of nutritional deficiency		2	3	4
Metabolic requirements in health and disease		3	4	4
Physiology of nutritional support		3	4	4
Refeeding syndrome		2	3	4
Options for nutritional support Enteral vs parenteral		3	3	4
Indications for nutritional intervention		2	3	4
Management of fistulae	Principles of management	2	3	4
CLINICAL SKILLS				
Assessment of GI tract function		3	4	4
Assessment of nutritional status		2	3	3
Insertion of enteral feeding tubes		2	3	4
Care of the patient on enteral and parenteral support		2	3	4
Decision making		2	3	4
TECHNICAL SKILLS				
Formation of feeding enterostomy (open / lap)		2	2	4
Vascular access for parenteral feeding		2	2	4
PEG tube insertion / replacement		2	3	4

HAEMORRHOIDS

OBJECTIVES
Competency in the diagnosis and all medical and surgical treatments for haemorrhoids.

Knowledge

	ST 4	ST 6	ST 8
Aetiology of internal and external haemorrhoids	4	4	4
Anatomical distinctions between internal and external haemorrhoids	4	4	4
Classifications for internal haemorrhoids	4	4	4
Indications, contraindications and complications of non-operative treatment of haemorrhoids –topical applications, stool modifiers/softeners	3	4	4
Indications, contraindications and complications of office treatment of haemorrhoids	3	4	4
Indications, contraindications and complications of operative treatment of haemorrhoids	2	4	4

Clinical Skills

Diagnosis of thrombosed external haemorrhoids, internal haemorrhoids, skin tags	4	4	4
Diagnosis and treatment of complications of office treatment of haemorrhoids – pain, bleeding, sepsis,	3	4	4
Diagnosis and treatment of complications of operative treatment of haemorrhoids – urinary retention, haemorrhage, faecal impaction, infection stenosis, incontinence	2	3	4
Ability to manage haemorrhoids in IBD, pregnancy, HIV, Coagulopathy, portal hypertension	2	3	4

Technical Skills			
Haemorrhoids-OP treatment(injection/banding/infrared)	3	4	4
Haemorrhoidectomy-operative	2	4	4
Haemorrhoidectomy-stapled	1	3	4

ANAL FISSURE

OBJECTIVE

Competency in the diagnosis and the medical and surgical treatment of anal fissure.

		ST4	ST6	ST8
Knowledge				
Aetiology of anal fissure		**4**	**4**	**4**
Anatomical location of a classic anal fissure		**4**	**4**	**4**
Clinical skills				
Assessment of the signs and symptoms of anal fissure		**4**	**4**	**4**
Arrange the nonoperative management of anal fissure, including indications, contraindications, and complications of stool modifications/softeners, topical anaesthetics, topical pharmacology, botulinium toxin		**3**	**3**	**4**
Indications, contraindications, and complications of the following: lateral internal sphincterotomy anal stretch, anal advancement flap		**3**	**3**	**4**
Pre and postop care of lateral sphincterotomy, anal advancement flap for fissure		**2**	**3**	**4**
Treat complications resulting from operations; persistent fissure, incontinence, stenosis, key-hole deformity		N/A	**2**	**4**
Technical Skills				
Lateral sphincterotomy		**2**	**4**	**4**
Anal advancement flap for fissure/stenosis		N/A	**1**	**4**

ABSCESS AND FISTULA

OBJECTIVE
Competency in the diagnosis and the medical and surgical treatment of abscess and fistula-in-ano.

		ST4	ST6	ST8
Knowledge				
The origin of cryptoglandular abscess and fistula		**4**	**4**	**4**
Classification of anorectal cryptoglandular abscess-based on anatomical spaces		**4**	**4**	**4**
Parks classification of anal fistula		**4**	**4**	**4**
The natural history of surgically-treated anal abscess, including the risk of fistula formation		**4**	**4**	**4**
Operative strategy for anal fistula based on sphincter involvement/location		**3**	**4**	**4**
Complications resulting from abscess/fistula surgery: recurrence, incontinence		**3**	**4**	**4**
Clinical skills				
Differentiate cryptoglandular abscess and fistula from other causes		**4**	**4**	**4**
Assessment of abscess/fistula by techniques designed to elucidate pathological anatomy: Goodsall?s rule and digital examination, fistulogram, injections, MRI, endoanal ultrasound		**3**	**3**	**4**
Management of anorectal abscess including preoperative and postoperative care and the appropriate procedure based on anatomical spaces		**4**	**4**	**4**
Treatment options for fistula-in-ano including fibrin glue / fistula plug		**2**	**3**	**4**
Modify therapy for: necrotising fasciitis/Fournier's gangrene, Leukaemia, other immunocompromised patients, inflammatory bowel disease		**3**	**4**	**4**
Manage rectovaginal fistula with regard to classification, preoperative evaluation, and treatment of rectovaginal fistula, based on location and aetiology		**2**	**3**	**4**
Arrange pre and postop care for rectovaginal fistula due to obstetric injury		N/A	**2**	**4**
Manage rectourethral fistula depending on location and aetiology		N/A	**2**	**4**

Technical Skills				
Fistula-in-ano-low-lay open		**3**	**4**	**4**
Fistula-in-ano-high-drainage Seton		**2**	**3**	**4**
Fistula-in-ano-high-cutting seton		**2**	**3**	**4**
Fistula-in-ano-high-advancement flap		N/A	**2**	**4**
Fistula-in-ano - placement of fistula plug		N/A	**2**	**4**
Fistula-operation for rectovaginal fistula		N/A	**2**	**4**

HIDRADENITIS SUPPURATIVA

OBJECTIVE

Competency in the diagnosis and management of hidradenitis suppuritiva.

		ST4	ST6	ST8
Knowledge				
Pathophysiology of hidradenitis suppurativa		**4**	**4**	**4**
Clinical skills				
Assess the symptoms and signs of hidradrenitis suppurativa		**4**	**4**	**4**
Manage hidradenitis suppuritiva by both medical and surgical means		N/A	**2**	**4**

PILONIDAL DISEASE

OBJECTIVE
Competency in the management of pilonidal disease.

		ST4	ST6	ST8
Knowledge				
Pathophysiology of pilonidal disease		**4**	**4**	**4**
Clinical skills				
Assess the symptoms and signs of pilonidal disease: abscess, sinus		**4**	**4**	**4**
Perform surgical management of pilonidal disease		**4**	**4**	**4**
Technical Skills				
Pilonidal sinus-lay open		**4**	**4**	**4**
Pilonidal sinus-excision + suture		**3**	**4**	**4**
Pilonidal sinus-graft or flap		**N/A**	**2**	**3**

ANAL STENOSIS

OBJECTIVE
Competency in the management of anal stenosis.

		ST4	ST6	ST8
Knowledge				
Aetiology		**3**	**4**	**4**
Clinical skills				
Arrange nonoperative management		**4**	**4**	**4**
Operative management of anal stenosis including division of stricture and flap procedures		**N/A**	**2**	**4**
Technical Skills				
Anal advancement flap for fissure/stenosis		**N/A**	**1**	**3**

PRURITUS ANI

OBJECTIVE
Competency in the management of pruritis ani.

		ST4	ST6	ST8
Knowledge				
Aetiology and clinical presentation of pruritus ani		**4**	**4**	**4**
Clinical skills				
Arrange medical management and surgical management of pruritus ani with attention to: hygiene, diet, anatomical (obesity, deep anal cleft), coexisting anal pathology, systemic disease, gynaecologic-associated, infections, postantibiotic syndrome, contact dermatitis, dermatology, radiation, neoplasm, idiopathic pruritis ani		**4**	**4**	**4**

SEXUALLY TRANSMITTED DISEASE

OBJECTIVE
Appropriate management of sexually transmitted disease
in consultation with other specialists.

		ST4	ST6	ST8
Knowledge				
Aetiology of condylomata acuminata		**4**	**4**	**4**
Aetiology of HIV, syphilis, gonorrhoea, Chlamydia, herpes		**N/A**	**2**	**4**
Influence of human papilloma virus serotypes on the subsequent development of cancer		**2**	**3**	**4**
Clinical skills				
Diagnosis of condylomata acuminata		**4**	**4**	**4**
Diagnosis and treatment of HIV, syphilis, gonorrhoea, Chlamydia, herpes		**N/A**	**2**	**4**
Medical (topical chemicals) and surgical treatment options for condylomata acuminata		**4**	**4**	**4**
Technical Skills				
Anal skin tags/warts-excision		**4**	**4**	**4**

VASCULAR MALFORMATIONS

OBJECTIVES
Management of patients with vascular malformations of the lower GI tract.

		ST4	ST6	ST8
Knowledge				
Aetiology of angiodysplasia		3	**4**	**4**
Classification of haemangiomas, their clinical presentations and predominant GI sites		2	**3**	**4**
Clinical skills				
Assess clinical presentation and endoscopic findings of angiodysplasia		3	**4**	**4**
Manage the patient with regard to indications for intervention and the operative and nonoperative management of angiodysplasia		2	**3**	**4**
Arrange radiologic and endoscopic evaluation of patients with haemangiomas		2	**3**	**4**
Arrange nonoperative and operative management, based on location		2	**3**	**4**
Technical Skills				
Colonoscopy-diagnostic		2	**3**	**4**
Colonoscopy-therapeutic		2	**3**	**4**

DIVERTICULAR DISEASE

OBJECTIVES

Ability to assess and manage diverticular disease

		ST4	ST6	ST8
Knowledge				
Aetiology of colonic diverticular disease		**4**	**4**	**4**
Incidence and epidemiology of colonic diverticular disease		**4**	**4**	**4**
Complications and classification of diverticular disease including : bleeding, perforation, abscess, fistula, stricture		**4**	**4**	**4**
Hinchey classification of complicated diverticular disease		**4**	**4**	**4**
Clinical skills				
Recognise the clinical patterns (including right sided diverticular disease) presenting symptoms, physical findings and natural history of colonic diverticular disease		**3**	**4**	**4**
Arrange appropriate diagnostic studies in suitable sequence in the evaluation of both acute and chronic colonic diverticular disease		**3**	**4**	**4**
Medical and dietary management of colonic diverticular disease		**4**	**4**	**4**
Medical management for acute diverticulitis		**3**	**4**	**4**
Preoperative assessment including the indications for surgery, surgical procedures, and complications for acute diverticulitis		**3**	**4**	**4**
Choose appropriate surgical procedures including CT guided drainage for the management of acute diverticulitis		***2***	**3**	**4**
Perform appropriate resection for diverticular disease including consideration of the extent of resection, use of ureteric stents, and indications for diversion		***2***	**4**	**4**
Appropriate surgical procedures for dealing with complications (fistula, stricture, recurrent episodes) of acute diverticulitis		***2***	**3**	**4**

Patient selection and techniques for reversal of Hartmann's procedure including use of ureteric stents and indications for diversion		***2***	**3**	**4**
Technical Skills				
Colectomy-left		***2***	**4**	**4**
Colectomy-sigmoid		***2***	**4**	**4**
Colostomy-construction		***3***	**4**	**4**
Hartmann's procedure		***2***	**3**	**4**
Hartmann's reversal		***2***	**3**	**4**

VOLVULUS

OBJECTIVE
Competency in the diagnosis and treatment of colonic volvulus

		ST4	ST6	ST8
Knowledge				
Aetiology of volvulus of the colon		4	4	4
Incidence and epidemiotogy of volvulus of the colon		4	4	4
Complications of colonic volvulus including obstruction, ischaemia, perforation		4	4	4
Clinical skills				
Recognise the clinical patterns, presenting symptoms, physical findings, and natural history of colonic volvulus based upon its site		4	4	4
Arrange diagnostic studies in appropriate sequence		4	4	4
Appropriate operative procedures for volvulus depending on site		3	4	4
Technical Skills				
Sigmoidoscopy-rigid		3	4	4
Sigmoidoscopy-flexible		2	4	4
Colonoscopy-diagnostic		2	3	4
Colonoscopy-therapeutic		2	3	4

RECTAL BLEEDING

OBJECTIVE
Ability to appropriately investigate rectal bleeding

		ST4	ST6	ST8
Knowledge				
Aetiology of lower GI bleeding		4	4	4
Clinical skills				
Arrange appropriate evaluation of the patient based on age and other medical conditions		4	4	4

MASSIVE LOWER GI BLEEDING

OBJECTIVE
Management of massive lower GI tract bleeding

		ST4	ST6	ST8
Knowledge				
Aetiology of massive lower GI bleeding		4	4	4
Utility, specificity and sensitivity of colonoscopy, angiography and radio-iscope scintigraphy in evaluation of lower GI bleeding		3	3	4
Angiographic treatment of lower GI bleeding		2	4	4
Evaluation of recurrent lower GI bleeding, including use of enteroscopy, exploratory laparotomy and intra-operative endoscopy		*2*	3	4
Clinical skills				
Assess haemodynamic stability and outline a resuscitation plan		4	4	4
Practice an algorithm for the evaluation of lower GI bleeding including exclusion of coagulopathy, gastroscopy, colonoscopy, selective mesenteric angiography, radio-isotope scintigraphy, on table colonoscopy with antegrade lavage		2	3	4
Perform endoscopic treatment of lower GI bleeding including coagulation, injection therapy and laser ablation		**N/A**	2	4
Manage the patient with regard to the indications for surgery, appropriate surgical procedures and their possible complications based upon cause, location, patient age and medical condition		*2*	3	4
Perform intra-operative evaluation and management of persistent massive lower GI bleeding without an identified site		*N/A*	2	4
Manage postoperative lower GI bleeding		*2*	3	4

Technical Skills				
Colonoscopy-diagnostic		*2*	3	4
Colonoscopy-therapeutic		*1*	2	4
Colectomy-total+ileostomy		*2*	4	4
Colectomy-right		*2*	4	4
Colectomy-left		*2*	4	4
Colectomy-sigmoid		*2*	4	4
Colostomy-construction		*3*	4	4
Hartmann's procedure		*2*	3	4
Ileostomy-construction		*3*	4	4

ENDOMETRIOSIS

OBJECTIVE
Management of endometriosis affecting the GI tract with the gynaecologists.

		ST4	ST6	ST8
Knowledge				
Pathophysiology of endometriosis		*2*	3	3
Indications for intervention and the operative and non-operative management of endometriosis		*2*	3	4
Clinical skills				
Recognition of the clinical presentation and the endoscopic and laparoscopic findings of endometriosis		*2*	3	4

COLON TRAUMA

OBJECTIVE

Competency in the appropriate diagnosis and treatment of colon trauma

		ST4	ST6	ST8
Knowledge				
Uses and limitations of the following imaging and diagnostic tests in the evaluation of blunt abdominal trauma				
Plain abdominal films		3	4	4
Computed tomography scan		3	4	4
Ultrasound		3	4	4
Peritoneal lavage		3	4	4
Clinical skills				
Manage the patient with penetrating abdominal trauma with understanding of the criteria for exploratory laparotomy, wound exploration, peritoneal lavage Perform appropriate surgical management of colon trauma in the context of the severity of associated injuries and stability of medical condition,		3	4	4
Manage a patient, either operatively or non-operatively with colonic trauma due to colonoscopic perforation or laparoscopic perforation		3	4	4

Technical Skills				
Colon-primary repair		*2*	3	4
Colectomy-right		*2*	4	4
Colectomy-left		*2*	3	4
Colectomy-sigmoid		*2*	4	4
Colectomy-transverse		*2*	4	4
Colectomy-total+ileostomy		*2*	3	4
Hartmann's procedure		*2*	4	4
Colostomy-construction		*3*	4	4
Ileostomy-construction		*3*	4	4

RECTAL TRAUMA

OBJECTIVE
Competency in the diagnosis and treatment of rectal trauma

		ST4	ST6	ST8
Knowledge				
Identify clinical situations requiring evaluation for rectal trauma		4	4	4
Clinical skills				
Diagnosis of rectal trauma and associated injuries		4	4	4
Perform surgical management of rectal trauma including drainage, faecal diversion, rectal washout, primary repair		*1*	3	4
Technical Skills				
Colostomy-construction		*2*	4	4
Hartmann's procedure		*3*	4	4
Ileostomy construction		*2*	4	4
Rectum-operation for trauma		*1*	2	4

ANAL TRAUMA

OBJECTIVE
Competency in the management of anal trauma

		ST4	ST6	ST8
Knowledge				
Clinical skills				
Manage traumatic anal injuries by faecal diversion, and/or repair		2	4	4
Technical Skills				
Colostomy construction		*3*	4	4
Anal sphincter repair including postanal repair, anterior sphincter repair + rectocele repair		*1*	3	4

FOREIGN BODIES

OBJECTIVE
Manage patients with rectal foreign bodies

		ST4	ST6	ST8
Knowledge				
Clinical skills				
Evaluate patients with rectal foreign bodies		**4**	**4**	**4**
Perform various methods of extraction of foreign bodies and assess the indications for surgery		***3***	**4**	**4**
Manage postextraction evaluation with regard to indications for inpatient observation and indications for surgery		***3***	**4**	**4**

COLORECTAL NEOPLASIA

OBJECTIVE

Epidemiology of Colorectal Cancer and Polyps: Knowledge of the epidemiology of colorectal cancer and polyps.

Aetiology: Detailed knowledge of the aetiology of colorectal neoplasia.

Colorectal Cancer Screening: Knowledge of the principles of colorectal cancer screening.

Clinical Presentation: Recognise the symptoms and signs of colorectal cancer at different sites.

Staging and Prognostic Factors: Detailed understanding of staging and prognostic factors for colorectal cancer.

Management of Colon Cancer: Management of all patients with colon cancer

KNOWLEDGE

		ST4	ST6	ST8
Epidemiology of colorectal cancer and polyps including incidence and prevalence, influence of socio-economic, racial and geographic factors		**4**	**4**	**4**
Current screening strategies for the following	General population,; moderate risk; high risk	4	4	4
Aetiology	Diet: fat, fibre, calcium, selenium, vitamins (antioxidants), dietary inhibitors, alcohol and smoking, prostaglandin inhibitors	**4**	**4**	**4**

Adenoma-carcinoma sequence: evidence, categorise adenomas into low risk, intermediate and high risk and discuss screening procedures, significance of metaplastic polyps	4	4	4
De novo carcinoma	2	4	4
Susceptibility to colorectal cancer (CRC): family history, Personal Past History (CRC, Polyps, Other Cancers), groups at risk, genetic pathways for colorectal carcinogenesis	4	4	4
Hereditary nonpolyposis colorectal cancer (HNPCC): clinical features, Amsterdam criteria and modifications, extracolonic cancer risk, genetic basis, genetic testing/counselling, surveillance options/limitations, surgical options/limitations	3	3	4
Familial adenomatous polyposis: clinical definition, extracolonic lesions, cancer risk, genetic basis (genotype/phenotype correlation), genetic testing/counselling, variants, evolution of surgical management, management of desmoid disease, post-surgery surveillance	3	4	4
Hamartomas: definition, juvenile polyposis, Peutz-	2	3	4

	Jeghers syndrome			
Clinical presentation	Distribution of CRC within the colon	**4**	**4**	**4**
Staging and prognostic factors	The evolution of staging systems	**2**	**3**	**4**
	Current staging systems (Dukes, TNM)	**4**	**4**	**4**
	Clinical prognostic factors: age, mode of presentation, clinical stage, blood transfusion	**4**	**4**	**4**
	Histologic/biochemical features: histological grade, mucin secretion, signet-cell histology, venous invasion, perineural invasion, nodal involvement/apical node, ?pushing? vs infiltrating margin, tumour infiltrating lymphocytes, microsatellite instability (MSI), carcinoembryonic antigen	**4**	**4**	**4**
	The significance of extent of disease including patterns of spread: direct continuity, intramural, transmural, distal margins, circumferential margins, transperitoneal, lymphatic, haematogenous, implantation	**3**	**4**	**4**
	The assessment of disease extent: detection and management of synchronous lesions, distant metastatic disease, preop detection of local invasion, regional	**3**	**4**	**4**

	metastatic disease			
Management of colorectal cancer	Special considerations in the operative management of Colon cancer: colonic stents, intraluminal cytotoxic irrigation, on-table lavage, perforation, synchronous lesions, ureteric stenting, oophorectomy, ?No-touch? technique, pregnancy	**2**	**3**	**4**
	The rationale and indications for the use of adjuvant chemotherapy	**2**	**4**	**4**

Clinical Skills

Recognise the clinical signs and symptoms of colorectal cancer	4	4	4
Manage malignant change within an adenomatous polyp	2	3	4
Familiarity with the indications and contraindications to surgery, operative technique, pre- and postoperative care, outcomes and the complications of colon cancer	2	4	4
En-bloc resections of adjacent organs	2	3	4
Extended resections to include total abdominal colectomy	2	3	4

Technical Skills

Colonoscopy-diagnostic		2	3	4
Colonoscopy-therapeutic		1	2	4
Colectomy-left		**2**	**3**	**4**
Colectomy-right		**2**	**3**	**4**
Colectomy-transverse		**2**	**3**	**4**
Colectomy-sigmoid		**2**	**3**	**4**
Colectomy-total+ileostomy		**2**	**3**	**4**
Colostomy-construction		**2**	**4**	**4**
Ileostomy-construction		**2**	**4**	**4**

RECTAL CANCER

OBJECTIVES

Management of patients with rectal cancer.

KNOWLEDGE

		ST4	ST6	ST8
Indications and contraindications, operative technique, pre and postop care, complications and outcomes for:	Local therapy: transanal, Kraske transsacral, York-Mason transsphincteric, transanal endoscopic microsurgery(TEM), fulguration, laser, endocavitary radiation. Sphincter-sparing resections: high and low anterior resection, tumour specific mesorectal excision, total mesorectal excision, coloanal anastomosis with or without colonic J pouch	2	3	4

Sphincter-sparing resections: high and low anterior resection, tumour specific mesorectal excision, total mesorectal excision, coloanal anastomosis with or without colonic J pouch		**2**	**3**	**4**
Rationale and indications for the use of adjuvant chemoradiotherapy		**2**	**4**	**4**
Current preop staging techniques and role of pre and postop radiotherapy		**2**	**3**	**4**

Clinical Skills

Recognise the clinical signs and symptoms of rectal cancer		3	4	4
Familiarity with the endoscopic diagnosis and CT and MRI imaging approaches		3	4	4
Indications for transanal treatment		2	3	4

Technical Skills

Transanal microsurgery		**N/A**	**2**	**3**
Peranal excision of rectal lesion		**1**	**3**	**4**
Rectum-posterior approach		N/A	**2**	**3**
Rectum-anterior resection		**1**	**3**	**4**
Rectum-anterior resection + coloanal anastomosis		**1**	**3**	**4**
Rectum-AP excision		**1**	**3**	**4**
Posterior pelvic clearance		**2**	**3**	**4**
Pelvic exenteration		**N/A**	**2**	**3**
Reoperation-pelvic malignancy		**N/A**	**2**	**3**

DETECTION AND TREATMENT OF RECURRENT AND METACHRONOUS COLORECTAL CANCER

OBJECTIVES
The Detection and Treatment of Recurrent and Metachronous Colon Cancer: Ability to detect and manage recurrent colon and rectal cancer.
Pain Management: Ability to manage severe pain

KNOWLEDGE

		ST4	ST6	ST8
Patterns of recurrence		**4**	**4**	**4**
Detection of recurrence using CEA, colonoscopy and imaging		**3**	**4**	**4**
Pain Management	Programmes for intractable pain	3	4	4

CLINICAL SKILLS				
Treatment of recurrent colorectal cancer: natural history, chemotherapy, resection, local ablation		**2**	**3**	**4**
Treatment of pelvic recurrence with radiation, chemotherapy, resection		**2**	**3**	**4**
Manage Carcinomatosis: with bowel obstruction, with ureteral obstruction		**2**	**3**	**4**
Palliative care		**4**	**4**	**4**

TECHNICAL SKILLS			
Pelvic malignancy - reoperation	**N/A**	2	3

MISCELLANEOUS MALIGNANT LESIONS

OBJECTIVES

Ability to manage more unusual tumours of the colon and rectum.

		ST4	ST6	ST8
Clinical skills				
Recognise the clinical presentation, assess prognostic factors, and manage carcinoid ? Ileal, appendiceal, colonic, rectal, carcinoid syndrome		**3**	**3**	**4**
Recognise the clinical presentation, assess prognostic factors, and manage lymphoma including its classification, treatment and risk factors		**2**	**3**	**4**
Recognise the clinical presentation, assess prognostic factors, and manage gastrointestinal stromal tumours		**1**	**2**	**4**
Recognise the clinical presentation, assess prognostic factors, and manage tumours metastasising to the colon - breast, melanoma, ovary		**N/A**	**2**	**4**

ANAL CANAL NEOPLASIA

OBJECTIVES

Ability to diagnose and manage anal canal neoplasia.

		ST4	ST6	ST8
Knowledge				
Epidermoid carcinoma: histologic types, routes of metastasis/recurrence		**2**	**3**	**4**
Role of salvage therapies: abdominoperineal resection, chemotherapy, radiotherapy		**1**	**3**	**4**
Other anal canal malignancies: adenocarcinoma, small cell cancer, melanoma		**1**	**2**	**4**
Clinical skills				
Treatment of epidermoid carcinomas based on stage: local excision, chemoradiotherapy, abdominoperineal resection, inguinal node management		**N/A**	**2**	**4**
Technical Skills				
Anal tumour-excision		**2**	**3**	**4**
Rectum-AP excision		**2**	**3**	**4**

ANAL NEOPLASIA

OBJECTIVES

Understanding of the pathophysiology and the management of anal neoplasia.
Ability to diagnose and manage anal margin neoplasia.

		ST4	ST6	ST8
Knowledge				
The significance of the anatomical distinction between the anal margin and the anal canal tumours		4	4	4
The differential lymphatic drainage of the anal canal and margin		4	4	4
The histological transition of the anal canal		4	4	4
Demographics of anal neoplasia		2	3	4
Changing incidence of anal neoplasia		2	3	4
Association with sexual practices		2	4	4
High-risk groups		2	4	4
Staging classification of anal neoplasia		2	3	4
Clinical skills				
Diagnosis and management of lesions of the anal canal including HPV genotypes associated with cancer, HIV infection, anal intraepithelial neoplasia(AIN), immunosuppression		2	3	4

Squamous cell carcinoma: clinical features, differential diagnosis, surgical management by local excision, chemoradiotherapy and abdominoperineal resection	**2**	**3**	**4**
Basal cell carcinoma: clinical features, differential diagnosis, management	**2**	**3**	**4**
Bowen's disease: histology, differential diagnosis, natural history, related cancers, management including anal mapping, wide local excision, reconstruction and observation in patients with HIV	**2**	**3**	**4**
Paget's disease: theories of histiogenesis, clinical features, management	**2**	**3**	**4**
Buschke-Lowenstein tumour: clinical presentation and course, treatment options	**2**	**3**	**4**
Technical Skills			
Anal tumour-excision	**2**	**3**	**4**
Rectum-AP excision	**2**	**3**	**4**

PRESACRAL LESIONS

OBJECTIVES

Ability to manage presacral lesions

		ST4	ST6	ST8
Clinical skills				
presentation, differential diagnosis, diagnostic evaluation and treatment of congenital lesions: epidermoid cysts, teratoma, anterior sacral meningocele, rectal duplication		**N/A**	**2**	**3**
clinical presentation, differential diagnosis, diagnostic evaluation and treatment of neoplastic lesions: osseous (Ewing's sarcoma, giant-cell tumour), chordoma, neurogenic, miscellaneous		**N/A**	**2**	**3**

FAECAL INCONTINENCE

OBJECTIVES

Faecal Incontinence-Epidemiology: Understanding of the epidemiology of faecal incontinence
Faecal Incontinence-Evaluation: Understanding of the causes, clinical findings and physiological findings in faecal incontinence.
Faecal Incontinence-Non-operative Management: Ability to manage faecal incontinence by non-operative means
Faecal Incontinence-Operative management: Competency in the operative treatment of faecal incontinence.

			ST4	ST6	ST8
KNOWLEDGE					
Epidemiology	Classification of the various types of incontinence, their incidence and their pathophysiology		**2**	**3**	**4**
Evaluation	Anatomical, neurological, dermatological, and endoscopic findings that differentiate various types of incontinence		**1**	**3**	**4**
	Normal and abnormal findings in imaging studies used in incontinence including MRI		**2**	**3**	**4**
	Knowledge of a scoring system for faecal incontinence		**2**	**3**	**4**
Indications, uses and results of biofeedback in incontinence			**2**	**4**	**4**
Indications for and techniques used in surgery for incontinence, including complications and functional results: postanal repair, anal sphincter repair, muscle transpositions, artificial bowel sphincter, sacral nerve stimulation (4)			2	**3**	**4**
Understand the concept of antegrade continent enema conduits			2	**3**	**4**

CLINICAL SKILLS

Take a directed history to differentiate types of incontinence	2	4	4
Perform a physical examination to differentiate types of incontinence	2	4	4
Identify and interpret anorectal physiology tests		2	4
Outline a non-operative bowel management plan incorporating : dietary measures, medications, enemas, perineal skin care, anal plug	**3**	**3**	**4**
Make a treatment plan for a patient with incontinence, including knowledge of side-effects	**2**	**3**	**4**
Select patients for operation according to the physical and laboratory findings	**N/A**	**2**	**4**
Select type of operative repair	**N/A**	**2**	**4**
Select patients for temporary and permanent faecal diversion	**2**	**3**	**4**

TECHNICAL SKILLS

Anal sphincter repair including postanal repair, anterior sphincter repair	**N/A**	**2**	**3**
Anal sphincter - artificial sphincter/sacral nerve stimulation	**N/A**	**1**	**2**

RECTAL PROLAPSE

OBJECTIVES

Competency in the management of all patients with rectal prolapse

		ST4	ST6	ST8
KNOWLEDGE				
The incidence, pathophysiology and epidemiology of rectal prolapse		**2**	**4**	**4**
Understanding of internal intussusception, with its radiological findings and treatment options		**1**	**3**	**4**
Understand the perineal and abdominal surgical options for prolapse with the indications for each approach, complications, recurrence rate and functional results		**2**	**3**	**4**
Clinical skills				
Identify the associated anatomical findings of rectal prolapse and its clinical presentation including functional disturbances and physical findings		**1**	**2**	**4**
Differentiate between mucosal prolapse, prolapsing internal haemorrhoids and rectal prolapse		**2**	**4**	**4**
Appropriate management of incarcerated and strangulated rectal prolapse		**2**	**3**	**4**
Manage constipation and incontinence in the context of rectal prolapse		**1**	**2**	**4**
Perform operation for rectal prolapse - perineal or abdominal; open or laparoscopic		**1**	**3**	**4**
Manage a patient with recurrent rectal prolapse		**N/A**	**2**	**4**
Technical Skills				
Prolapse-abdominal rectopexy		**1**	**3**	**4**
Prolapse-rectopexy + sigmoid resection		**1**	**3**	**4**
Prolapse-perineal repair		**1**	**2**	**4**

SOLITARY RECTAL ULCER

OBJECTIVES

Ability to diagnose and manage solitary ulcer syndrome

		ST4	ST6	ST8
Knowledge				
Understand the associated pelvic floor disorder		**2**	**3**	**4**
Clinical skills				
Recognise the clinical presentation, endoscopic and histological findings in a patient with solitary rectal ulcer		**1**	**3**	**4**
Utilise appropriate medica/surgical treatment options		**N/A**	**2**	**4**

CONSTIPATION

OBJECTIVE

Investigation of patients with constipation and treatment of patients with non-specific constipation.
Competency in the management of outlet obstruction constipation
Motility Disorders: Competency in the management of colonic inertia and colonic pseudo-obstruction.

KNOWLEDGE

	ST4	ST6	ST8
Normal colonic physiology (including gut hormones and peptides) and the process of defaecation	4	4	4
Definition of constipation and its epidemiology	4	4	4
Classification of types and causes of constipation differential diagnosis in a patient with constipation	3	3	4
Different types of laxatives and describe the indications, contraindications, modes of action, and complications of each: stimulant, osmotic, bulk-forming, lubricant	4	4	4
Diagnostic criteria for anismus	2	3	4
Indications, techniques, complications and results of rectocele repair	2	3	4
Role of colectomy in colonic inertia including indications, complications and expected results	2	4	4
Common causative factors for colonic pseudo-obstruction	3	4	4

CLINICAL SKILLS

Take a directed history for a patient with constipation and perform a directed physical examination	4	4	4
Arrange a treatment plan based on endoscopic, radiological and physiology tests: defaecating proctogram, transit studies, anorectal manometry, EMG, balloon expulsion, contrast enema, endoscopy	N/A	2	4
Identify melanosis coli on endoscopy and discuss its significance	2	4	4
Plan a treatment programme for a patient with constipation that may include the following: dietary measures, fibre, laxatives, prokinetic medications, enemas, suppositories, psychological support	2	3	4
Management of anismus: medical management, biofeedback, botulinum toxin, surgery	N/A	2	4
Manage short segment/adult Hirschsprung's disease	N/A	2	4

Recognise the clinical presentation of symptomatic rectocele	**1**	**3**	**4**
Diagnosis and both non-operative and operative management of enterocele and sigmoidocele	**N/A**	**2**	**4**
Evaluation and management of recurrent constipation after colectomy		**3**	**4**
Evaluate a patient with suspected colonic pseudo-obstruction	**3**	**4**	**4**
Manage a patient with colonic pseudo-obstruction by medical or surgical means	**3**	**4**	**4**

TECHNICAL SKILLS

Rectocele repair	2	3	4

IRRITABLE BOWEL SYNDROME

OBJECTIVE
Competency in the management of irritable bowel syndrome

		ST4	ST6	ST8
Clinical skills				
Diagnose irritable bowel syndrome and outline a medical treatment programme that may include the following: diet, fibre, laxatives, prokinetic medications, enemas, suppositories, psychological support		**4**	**4**	**4**

CHRONIC RECTAL PAIN SYNDROME

OBJECTIVE

Competency in the management of chronic rectal pain syndromes.

		ST4	ST6	ST8
Knowledge				
Differential diagnosis for rectal pain including levator ani syndrome, proctalgia fugax, chronic idiopathic pelvic pain, coccygodynia		**1**	**3**	**4**
Clinical skills				
Manage pelvic pain by means of: bowel management programmes, analgesics, antidepressants, levator massage, electrogalvanic stimulation, nerve blocks, steroid injections, botulinum toxin injections, biofeedback, psychiatric or psychological treatment, surgery		**N/A**	**2**	**4**

INFLAMMATORY BOWEL DISEASE - GENERAL

OBJECTIVES

History: Knowledge of the history of IBD

Aetiology: Knowledge of the aetiology of inflammatory bowel disease

Epidemiology: Knowledge of the epidemiology of inflammatory bowel disease

Clinical manifestations: Recognition of the clinical manifestations of inflammatory bowel disease and its severity.

Differential diagnosis: Competency in the diagnosis of inflammatory bowel disease including indeterminate colitis.

Reproduction and inflammatory bowel disease: Ability to advise on reproduction and IBD and to manage IBD during pregnancy.

		ST4	ST6	ST8
KNOWLEDGE				
Aetiology	The contribution of genetics and immune function to the development of inflammatory bowel disease (IBD)	3	4	4
	The possible influence of infectious agents, psychological issues and environmental factors	3	4	4
Epidemiology	The epidemiologic features of Crohn's disease and ulcerative colitis	3	4	4
Clinical manifestations	The criteria for severity of disease as defined by Crohn's disease activity index and Truelove classification	1	3	4
Differential Diagnosis	The endoscopic, radiographic, and laboratory findings of ulcerative colitis and Crohn's disease	3	4	4
	The distinguishing histologic characteristics of ulcerative colitis and disease	3	3	3
	The differential diagnosis of Inflammatory Bowel Disease	3	4	4
	Indeterminate colitis	2	3	4
Reproduction and Inflammatory Bowel Disease	The interaction of IBD and pregnancy	2	3	4
	The impact of IBD on fertility	1	3	4
	Drug therapy, investigations and surgery during pregnancy	1	3	4

CLINICAL SKILLS

		3	4	4
Recognise and compare the clinical pattern, presenting symptoms, physical findings and natural history of ulcerative colitis and Crohn's disease		3	3	4
The extraintestinal manifestations of IBD				
Diagnostic assessment for inflammatory bowel disease to exclude other colitides		**2**	**4**	**4**

ULCERATIVE COLITIS

OBJECTIVES
Medical management of ulcerative colitis: Competency in the medical management of ulcerative colitis in consultation with gastroenterology.
Cancer in ulcerative colitis: Understanding of the risk of cancer in ulcerative colitis and its management.
Surgical management of ulcerative colitis: Competency in the surgical treatment of ulcerative colitis.
Postoperative management of ulcerative colitis: Competency in the postoperative care of patients with ulcerative colitis, including ileoanal pouch and its complications.

KNOWLEDGE		ST4	ST6	ST8
Medical management	The mechanism of action, indication, appropriate dosage, side effects, and toxicity of the drugs used for the treatment of ulcerative colitis: aminosalicylates, corticosteroids, antibiotics, immunosuppressive drugs, other drugs	**3**	**3**	**3**
	Understand the role of nutritional support in the management of ulcerative colitis	**2**	**3**	**4**
Cancer in Ulcerative Colitis	The risk of cancer, with the factors increasing risk	**2**	**4**	**4**
Surgical Management	Be able to identify the indications for surgery for ulcerative colitis including: intractability, severe acute colitis, toxic megacolon, haemorrhage, prophylaxis for carcinoma/dysplasia, carcinoma, complications of extraintestinal manifestations, complications of medications	**3**	**3**	**4**
	Understand the operative management of indeterminate colititis	**2**	**3**	**4**

CLINICAL SKILLS

Recognise the presentation and manage proctitis, left-sided colitis, extensive colitis, severe acute colitis, toxic megacolon		3	4	4
Joint management of a patient unresponsive to initial treatment		3	4	4
Organise surveillance and interpret biopsy results of dysplasia		**1**	**3**	**4**
Indications and contraindications, operative technique, postoperative care, functional results, and complications of the operations for ulcerative colitis		**2**	**3**	**4**
Postoperative management	Recognise and manage the following conditions associated with the ileoanal pouch anal anastomosis: intestinal obstruction, pelvic sepsis, pouchitis, anastomotic/pouch vaginal and perineal fistula, stenosis, sexual dysfunction, retained mucosa	**1**	**3**	**4**
	Follow-up for retained rectum after colectomy	**1**	**3**	**4**

TECHNICAL SKILLS

Colectomy-total+ileostomy		**2**	**4**	**4**
Colectomy-total+ileorectal anastomosis		**2**	**4**	**4**
Rectum-panproctocolectomy+ileostomy		**2**	**3**	**4**
Ileoanal anastomosis+creation of pouch		**1**	**3**	**4**

CROHN'S DISEASE

OBJECTIVES
Medical management of Crohn's disease: Competency in the medical management of Crohn's disease in consultation with gastroenterology.
Cancer in Crohn's disease: Understanding of the risk of cancer in Crohn's disease and its management.
Complications of Crohn's disease: Competency in the management of the complications of Crohn's disease.
Surgical management of Crohn's disease: Competency in the surgical management of Crohn's disease.
Anorectal Crohn's Disease: Competency in the management of anorectal Crohn's disease.

KNOWLEDGE		ST4	ST6	ST8
Medical Management	The mechanism of action, indication, appropriate dosage, side effects, and toxicity of the drugs used for the treatment of Crohn's disease: aminosalicylates, corticosteroids, antibiotics, immunosuppressive drugs, cytokine modulators	**3**	**3**	**4**
	Understand the role of nutritional support in Crohn's disease	**2**	**3**	**4**
Cancer in Crohn's Disease	Risk of large and small bowel carcinoma and risk factors	**3**	**4**	**4**
Surgical Management	Awareness of the indications for surgery for Crohn's disease including: intractability, intestinal obstruction, fistula/abscess, complications	**2**	**4**	**4**

CLINICAL SKILLS

Treatment specific to the site of involvement in a patient with Crohn's disease		**3**	**4**	**4**
Medical management of a patient unresponsive to initial treatment		**3**	**3**	**4**
Organise surveillance and interpret biopsy results of dysplasia		**2**	**3**	**4**

Recognise and outline the management of the following complications of Crohn's disease: obstruction/stenosis, fistula, abscess, perforation, haemorrhage, toxic megacolon, severe acute colitis, genito-urinary disease, growth retardation, malnutrition, extraintestinal manifestations		**2**	**3**	**4**
Indications and contraindications, operative technique, postoperative care, functional results, risk of recurrence, and complications of operations for Crohn's disease		**2**	**3**	**4**
Recognise and discuss the management of the following manifestations of anorectal Crohn's disease: abscess, anal fistula, fissure, rectovaginal fistula, stricture, ulceration, incontinence, skin tags, haemorrhoids		**2**	**3**	**4**

TECHNICAL SKILLS

Rectum-panproctocolectomy+ileostomy	**1**	**3**	**4**
Colectomy-right	**2**	**4**	**4**
Colectomy-transverse	**2**	**4**	**4**
Colectomy-left	**1**	**4**	**4**
Colectomy-sigmoid	**1**	**4**	**4**
Colectomy-total+ileostomy	**1**	**4**	**4**
Colectomy-total+ileorectal anastomosis	**1**	**3**	**4**
Crohn's-ileocaecectomy	**2**	**4**	**4**
Strictureplasty-Crohn's	**1**	**3**	**4**
Gastroenterostomy	**1**	**4**	**4**
Intestinal fistula operation	**1**	**2**	**4**
Fistula-in-ano-high-advancement flap	**N/A**	**2**	**4**
Fistula-in-ano-high-cutting seton	**N/A**	**2**	**4**
Fistula in ano-high-drainage seton	**N/A**	**3**	**4**
Fistula-in-ano-high-other	**N/A**	**2**	**4**
Fistula-in-ano-low-lay open	**N/A**	**3**	**4**
Fistula-operation for rectovaginal fistula	**N/A**	**2**	**4**

ISCHAEMIC COLITIS

OBJECTIVES

Competency in the management of ischaemic colitis.

KNOWLEDGE

		ST4	ST6	ST8
Vascular anatomy of the colon		**4**	**4**	**4**
The aetiology of acute colonic ischemia		**4**	**4**	**4**

CLINICAL SKILLS				
Recognise the clinical presentation of ischaemic colitis		**4**	**4**	**4**
Recognise the natural history, diagnosis, and be able to manage ischaemic colitis		**3**	**4**	**4**
Recognise and manage ischaemic colitis after abdominal aortic aneurysm repair		**3**	**4**	**4**

RADIATION COLITIS

OBJECTIVE

Competency in the management of radiation bowel disease.

KNOWLEDGE		ST4	ST6	ST8
Risk factors for and susceptibility to injury from radiotherapy		**2**	**3**	**3**
Mechanisms of acute and chronic radiation injury		**1**	**3**	**3**
Microscopic findings of radiation injury Microscopic findings of radiation injury		**1**	**3**	**3**
Understand surgical options for radiotherapy injuries		**2**	**3**	**4**
CLINICAL SKILLS				
Manage the complications of radiotherapy: fistula, obstruction, malabsorption, necrosis, haemorrhage		**2**	**3**	**4**
Arrange local therapy for radiation proctitis		**2**	**3**	**4**

INFECTIOUS COLITIS

OBJECTIVES

Diagnosis and management of infectious colitis in consultation with infectious disease physicians

KNOWLEDGE		ST4	ST6	ST8
Epidemiology, aetiology, pathogenesis, laboratory and endoscopic evaluation, medical management and indications for surgery for clostridium difficile colitis		**3**	**4**	**4**
In suspected infectious colitis understand relevance of travel history, role of stool culture, testing for ova, cysts and parasites and hot stool sample for amoebiasis, role of lower GI endoscopy with biopsy for histological evaluation and culture, role of rectal and perineal swabs, role of serology in the detection of amoebiasis and strongyloidiasis, infectious colitis as a precipitating factor for inflammatory bowel disease		**3**	**3**	**3**
Management of diarrhoea in the immunocompromised patient including HIV		**3**	**3**	**3**

MISCELLANEOUS COLITIDES

OBJECTIVES

Competency in the management of the less common colitides.

		ST4	ST6	ST8
Clinical skills				
Manage the following: diversion colitis, neutropenic enterocolitis, collagen-vascular colitis, microscopic colitis		**N/A**	2	3

STOMAS

OBJECTIVES

Indications for stomas: Understanding of the indications for stomas and different types of stoma.
Preoperative Evaluation for stomas: Competency in the preoperative care of a patient requiring a stoma.
Stoma creation and closure: Competency in the construction and closure of an ileostomy and a colostomy.
Postoperative Care: Competency in the postoperative care of patients after stoma formation.
Complications: Competency in the management of early and late complications of stoma formation.
Stoma Management: Competency in the management of stomas in consultation with stoma care nurses.
Stoma Physiology: Knowledge of the physiology of different stomas.
Patient Education and Counselling: Knowledge of the information needed by a patient with a stoma.

KNOWLEDGE

		ST4	ST6	ST8
Indication for stoma	Indications for colostomy	4	4	4
	Indications for ileostomy	4	4	4
	Types of stomas (loop, end, end loop, double barrel) in relation to indications	3	4	4
Complications	High-output ileostomy	3	4	4
Stoma management	Stoma appliances, and appropriate selection	3	3	3
	Indications, contraindications and complications for stoma irrigation	2	3	4
Stoma Physiology	The physiologic changes associated with ileostomy, colostomy, urostomy	4	4	4
	Normal ileostomy function including anticipated daily outputs and changes that occur in output with postoperative adaptation	4	4	4
	Causes of high output stomas	3	4	4
	Differential diagnosis of high output	3	4	4
Patient Education and Counselling	The possible effects that a stoma may have on medication dosage and absorption	3	4	4

CLINICAL SKILLS

Preoperative evaluation	Discuss ostomy expectations with patients regarding function and anticipated output along with precautions for fluid and electrolyte balance, depending upon the type of stoma involved	3	4	4

	Demonstrate proper siting and marking techniques for all stoma placement, including such considerations as scars, the umbilicus, skin creases, belt and clothing and positioning (standing, sitting and supine positions)	**2**	**4**	**4**
Stoma creation and closure	Perform stoma construction and closure	**2**	**4**	**4**
	Organise preparation for stoma closure in the case of temporary faecal diversion including: timing of closure, necessary preoperative evaluation, care of the postoperative stoma site wound	**2**	**4**	**4**
Postoperative Care	Appreciate the normal postoperative course for colostomy and ileostomy function	**4**	**4**	**4**
	Recognise the signs, symptoms and management for the following complications that occur in the immediate postoperative period: ischaemia, mucocutaneous separation	**2**	**4**	**4**
Complications	Recognise and manage high-output ileostomy	**3**	**4**	**4**
	Recognise parastomal skin irritation of significance, list a differential diagnosis, and make recommendations for appropriate management	**1**	**4**	**4**
	Manage ileostomy and colostomy prolapse	**2**	**4**	**4**
	Management of parastomal hernia	**1**	**3**	**4**
	Recognise and manage skin conditions associated with stomas	**2**	**3**	**4**
	Recognise and manage ileostomy food obstruction	**4**	**4**	**4**
Stoma Management	Early postoperative management of conventional stoma	**4**	**4**	**4**
	Advise on various skin barriers and accessory products available for the management of stomas	**3**	**3**	**3**
	Management of a retracted stoma	**2**	**3**	**4**
	Advise on dietary considerations for patients with an ileostomy or a colostomy, including impact of diet on stoma output, flatus, odour, bolus obstruction	**3**	**3**	**3**
Appropriately manage fluid and electrolyte abnormalities		**4**	**4**	**4**
Patient education and counselling	Demonstrate stoma bag emptying, stoma bag changing, management of leakage	**2**	**3**	**4**

TECHNICAL SKILLS

Ileostomy-construction	**2**	**4**	**4**
Colostomy-construction	**2**	**4**	**4**
Ileostomy-closure	**1**	**4**	**4**
Colostomy-closure	**1**	**3**	**4**
Hartmann's reversal	**1**	**2**	**4**
Colostomy-revision	**2**	**3**	**4**
Ileostomy-revision	**2**	**3**	**4**
Hernia repair-parastomal	**2**	**3**	**4**

BREAST ASSESSMENT

			ST4	ST6	ST8
OBJECTIVES					
Understand principle features of breast anatomy, physiology Assess and manage patients presenting with breast symptoms					
KNOWLEDGE					
Normal anatomy	Breast and nipple		3	4	4
	Axilla and related drainage		3	4	4
	Chest wall		3	4	4
	Abdominal wall		3	4	4
	Breast aesthetics	Measurements	2	4	4
	Embryology / developmental abnormalities	Accessory nipples, hypo/hypertrophy, asymmetry	3	4	4
Breast and endocrine physiology	Endogenous hormones	Puberty / menarche	3	4	4
		Pregnancy	3	4	4
		Lactation	3	4	4
		Menopause	3	4	4
	Exogenous hormones	OCP, HRT, SERMS etc	3	4	4
Breast assessment	Triple assessment	Understand indications, use, interpretation	3	4	4
		Diagnostic grid/concordance	3	4	4
	Imaging:	Ultrasound, mammography: standard views	3	4	4
	Pathology		3	4	4
	Cytology	FNAC	3	4	4
	Histology	core biopsy	3	4	4
		Punch biopsy	4	4	4
	Extended assessment	Additional mammography views	3	4	4
		MRI	3	4	4
		vacuum biopsy	2	3	4
		surgical biopsy	3	4	4
	Management	Record findings - diagnostic grid	3	4	4
		Interpret findings	2	3	4

		develop plan	2	3	4
		communicate findings and plan	2	3	4
CLINICAL SKILLS					
History			4	4	4
Examination	Breast, nodal basin, relevant systems	Inspection and palpation	4	4	4
Investigation	Triple assessment	Ultrasound interpretation	3	4	4
	Imaging techniques	Mammography interpretation	3	3	4
TECHNICAL SKILLS					
Fine needle aspiration	Cytology; cyst/abscess drainage		3	4	4
	Image guided		2	3	4
Core biopsy	Clinical		3	4	4
	Image guided		2	3	4
Punch biopsy			4	4	4

BENIGN BREAST CONDITIONS

			ST4	ST6	ST8
OBJECTIVES Assess and manage benign breast lumps, breast pain, nodularity and conditions affecting the nipple Assess and manage congenital, developmental and aesthetic problems of the breast					
KNOWLEDGE					
Applied Anatomy			3	4	4
Embryology			3	4	4
Pathophysiology	Benign disorders	BBC	3	4	4
		Cysts	3	4	4
		Fibroadenoma	3	4	4
		Duct disease / ectasia / papilloma	3	4	4
	Breast pain		3	4	4
	Skin conditions e.g. eczema		4	4	4
	Gynaecomastia		3	4	4
	Breast sepsis - Lactational microbiology		3	4	4
	Breast sepsis - non lactational	Periductal - microbiology	3	4	4
		Other - microbiology	2	3	4
CLINICAL SKILLS					
History and Examination	Breast, nodal basin, relevant systems		3	4	4
Investigation	Triple assessment		4	4	4
	Imaging techniques	Ultrasound interpretation	2	3	4
		Mammography interpretation	2	3	4
		MRI - indications and interpretation	2	3	4
Management plan			2	3	4
TECHNICAL SKILLS					
Drainage of breast abscess	Open		4	4	4

Image guided	2	3	4
Breast lump excision	3	4	4
Excision image guided lesion	2	4	4
Microdochectomy	3	4	4
Major duct excision	3	4	4
Fistulectomy	3	4	4
Nipple eversion	2	3	4
Reduction Mammoplasty	2	3	4
Mastopexy	2	3	4
Augmentation	2	3	4

BREAST CANCER

			ST4	ST6	ST8
OBJECTIVES Diagnose, assess, manage breast cancer - symptomatic and screen detected Assess and manage atypical and precancerous lesions Diagnose, assess and manage less common and advanced presentations of breast cancer Assess and select patients for oncoplastic and reconstructive procedures Perform oncoplastic and plastic surgical breast procedures and manage postoperative care and follow-up					
KNOWLEDGE					
Genetics of breast cancer	Family History		3	4	4
	NICE Guidelines		2	3	4
Risk lesions	LCIS, ADH		2	3	4
Pathology of in-situ breast cancer	Clinicopathology		2	3	4
	Epidemiology		2	3	4
Invasive breast cancer	Taxonomy		3	4	4
	Staging		3	4	4
	Epidemiology		3	4	4
	Cancer biology		3	4	4
Prognostic factors	Chief prognostic factors		2	3	4
	Relevance to treatment		2	3	4
Risk assessment / genetic testing / counselling	Advice, diet, lifestyle, screening, risk reduction surgery		3	4	4
Screening	NHS BSP / Family history	Evidence, organisation	2	3	4
	Screening assessment	Delivery, imaging modality, results	2	4	4
Cancer staging	Bone scan, MRI, CT, PET, tumour markers etc	Understand indications and use of imaging	3	4	4
Management/treatment	Risks and benefits of treatment/no treatment	Understand indications	3	4	4
Treatment	Indications for breast conservation / mastectomy		2	4	4
	Neoadjuvant therapies including primary medical therapy		2	3	4

	Indications for radiotherapy		2	3	4
	Adjuvant chemotherapy - principles and indications		2	3	4
	Endocrine therapies		2	3	4
	Herceptin		2	3	4
Breast Service Delivery and QA					
	Multidisciplinary Teams		3	4	4
	Guidelines and protocols - network, national, etc	NICE	2	4	4
		ABS	2	4	4
		NHSBSP	2	4	4
		Others: ASCO, ST Gallen,	1	3	4
CLINICAL SKILLS					
History and Examination	Breast, nodal basin, relevant systems		3	4	4
Investigation	Triple assessment		3	4	4
	Imaging techniques	Ultrasound interpretation	3	4	4
		Mammography interpretation	3	4	4
		MRI - indications and interpretation	2	4	4
Management plan	Develop and record plan		3	4	4
	Communication / informed consent		2	3	4
TECHNICAL SKILLS					
Wide local excision					
	Palpable lesion		3	4	4
	Image wire localised		2	3	4
Mastectomy					
	Simple		2	4	4
	Skin sparing		2	3	4
	Modified radical		2	3	4
Axillary surgery					
	Axillary clearance		2	3	4
	Sentinel node biopsy		2	3	4
Reconstructive surgery					
	Indications		2	3	4
	Immediate and delayed	Implant only	2	3	4
		Latissimus dorsi flap	2	3	4
Breast Aesthetics		TRAM flap	1	2	2
	Breast dimensions	DIEP flap	1	2	2

	Reduction mammoplasty		2	3	4
Oncoplastic techniques	Mastopexy		2	3	4
	Therapeutic mammoplasty		2	3	4
	Round block		2	3	4
	Grisotti		2	3	4
	Symmetrisation surgery		2	3	4
Nipple areolar complex	Nipple free graft		2	3	4
	Nipple reconstruction	local flap	2	3	4
		Skin graft	2	3	4
		Nipple tattoo	2	3	4
		Nipple sharing	2	3	4
Wide local excision					
	Palpable lesion		3	4	4
	impalpable - localised - wire/skin mark etc		3	4	4
	Re-coning		2	3	4
	therapeutic mammoplasty - various pedicles/incisions		2	3	4
	Grisotti flap		2	3	4
	Round block (Benelli)		2	3	4
Mastectomy					
	Simple		3	4	4
	Modified radical		3	4	4
	skin sparing - nipple preserving		2	3	4
	skin sparing - nipple sacrificed		2	4	4
	Skin reducing		2	4	4
Axillary surgery					
	removal axillary breast tissue/nipple		3	4	4
	Lymph node biopsy		4	4	4
	Axillary clearance -Primary . Level 1-3		3	4	4
	Axillary clearance - completion (delayed)		3	4	4
	Axillary surgery - repeat (recurrence)		3	4	4
	SLNB (dual technique)		3	4	4
	SLNB (blue dye only)		3	4	4
Reconstructive surgery					
Immediate and delayed	Implant only - variations		3	3	4
	Latissimus dorsi flap + implant		3	3	4

	Latissimus dorsi flap - autologous	2	3	4
	TRAM flap pedicled	2	2	3
	TRAM flap free	2	2	2
	DIEP flap	2	2	2
	Other flaps	2	2	2
Symmetrisation surgery				
	Reduction mammoplasty	2	3	4
	Mastopexy	2	3	4
	Augmentation	2	3	4
Gyneacomastia		2	3	4
Developmental corrections	Tubular breast	2	2	3
	Hypoplasia	2	2	3
Lipomodelling		1	2	4
Liposuction		1	2	4
Vacuum excision	Mammotome/encore system	1	2	4
Skin grafting		1	3	3
Salvage surgery	Chest wall resurfacing	2	3	4
Complex wound management	VAC dressings	2	3	4
New techniques		1	2	2

NECK SWELLINGS

OBJECTIVE
Assessment and Management of Neck Swellings

		ST4	ST6	ST8
KNOWLEDGE				
Anatomy of triangles of neck	Submental, submandibular, anterior, posterior	3	4	4
Causes of enlargement of salivary glands / thyroid gland	Thyroglossal cyst, lymph nodes,	3	4	4
	Skin and soft tissue including branchial cyst	3	4	4
Investigation of neck swellings	Diagnostic imaging, ENT assessment, pathology and biochemistry	3	4	4
CLINICAL SKILLS				
History and examination of neck swellings		4	4	4
Investigation	Diagnostic imaging	3	4	4
	ENT assessment	3	4	4
	Pathology	3	4	4
	Biochemistry	3	4	4
TECHNICAL SKILLS				
Biopsy - FNA		3	4	4
Cervical lymph node biopsy		2	4	4

THYROID

OBJECTIVE

Investigation and perioperative management of thyroid swellings and thyrotoxicosis.
Preop assessment: diagnosis and assessment of thyroid swellings and thyrotoxicosis.
Operative management: operative management of thyroid swellings (benign and malignant) and thyrotoxicosis.
Post operative management: postoperative care after thyroid surgery.

		ST4	ST6	ST8
KNOWLEDGE				
Anatomy of the neck, in particular thyroid and parathyroid glands		2	3	4
Pathophysiology of thyroid swellings	Generalised/solitary; functioning/non-functioning	2	3	4
Benign disorders of thyroid growth	Diffuse enlargement, nodular disease	2	3	4
Disorders of thyroid function	Causes, Treatment options	2	3	4
Medical treatment of thyrotoxicosis		1	2	3
Thyroid malignancy	Differentiated, medullary, anaplastic, lymphoma	2	3	4
Genetic implications of thyroid malignancy		2	3	4
Principles of operation for thyroid swellings and thyrotoxicosis		2	3	4
Complications of thyroid surgery		3	3	4
Thyroid replacement therapy in benign disease		2	3	4
Follow up and non surgical management / treatment of thyroid malignancy		2	3	4
CLINICAL SKILLS				
History and examination		3	4	4
Investigations	Thyroid function, autoantibodies	2	3	4
	FNA, Ultrasound, Isotope scan	2	3	4
Indications for surgery	Thyroxicosis, benign nodular disease, malignancy	2	3	4
Decisions for operative or non-operative management	Choice of operation	2	3	4
Postoperative management	Postop bleeding, airway problems,	2	3	4

	hypercalcaemia			
Diagnosis and management of recurrent thyroid disease	benign / malignant, MDT discussions	2	3	4
TECHNICAL SKILLS				
Thyroid lobectomy		1	3	4
Subtotal thyroidectomy		1	3	4
Total Thyroidectomy		N/A	2	4
Thyroidectomy - toxic goitre		N/A	2	4
Thyroidectomy - total + cervical node dissection	Central compartment and lateral compartments	N/A	2	4
Thyroid surgery - reoperation		N/A	2	4
Cervical approach to retrosternal goitre		N/A	2	4
Sternotomy for retrosternal goitre		N/A	2	4
Thymectomy - transcervical approach		N/A	2	4

PARATHYROID

OBJECTIVE

Assessment and treatment of disorders of parathyroid function.
Diagnosis /Assessment: Diagnosis and assessment of disorders of parathyroid function.
Operative Management: Understanding of the principles of surgery for disorders of parathyroid function
including re-exploration of the neck
Post operative management: post operative management after parathyroid surgery.

		ST4	ST6	ST8
KNOWLEDGE				
Anatomy / embryology / pathophysiology		2	4	4
Genetic implication of parathyroid disease		2	3	4
Hypercalcaemia	Causes	3	4	4
	Investigation	2	3	4
	Medical management	2	3	4
Hypocalcaemia	Causes	3	4	4
	Investigation	2	3	4
	Medical management	2	3	4
Causes of hyperparathyroidism	Primary, renal, MEN, persistent or recurrent carcinoma	2	3	4
Diagnosis and assessment		2	3	4
Indications for and types of imaging		2	3	4
Indications for surgery in renal parathyroid disease		2	3	3
Surgical strategies for hyperparathyroidism		2	3	4
Intra-operative management	Frozen section, PTH assay	2	3	4
Complications of parathyroid surgery		3	4	4
Options for and organisation of follow-up		2	3	4

CLINICAL SKILLS				
History and examination		3	4	4
Investigations	Biochemical, radiological	3	3	4
Selection for surgery		2	3	4
Options	4 gland exploration, single gland exploration	2	3	4
	Subtotal resection, Transcervical thymectomy	2	3	4
Focussed approach to parathyroid surgery		2	3	4
Indications for mediastinal exploration		N/A	2	4
Postop complications	Bleeding, airway problems, hypocalcaemia	3	4	4
TECHNICAL SKILLS				
Parathyroidectomy		1	4	4
Parathyroid surgery - reoperation		N/A	2	4
Thymectomy - transcervical		N/A	N/A	4

ADRENAL

OBJECTIVE
Assessment and management of enlarged adrenal gland including operation.

Adrenal gland: diagnosis and assessment of adrenal swellings.

Adrenal Gland - Operative management: principles of operative management of adrenal swellings.

Adrenal Gland - postoperative management: basic postoperative management of patients who have had adrenalectomy.

		ST4	ST6	ST8
KNOWLEDGE				
Anatomy and physiology of adrenal			3	4
Genetic implications of adrenal disease			2	4
Causes of adrenal mass			3	3
Disorders of adrenal function	Hyperadrenalism		2	3
	Hypoadrenalism		2	3
Indications for surgery			2	4
Effect of hormone producing tumours in perioperative period				3
Open or laparoscopic surgery			2	3
Different approaches to adrenal	Anterior, posterior, laparoscopic		2	4
Complications of adrenalectomy			2	4
CLINICAL SKILLS				
History and examination			3	4
Investigations	Biochemical, radiological		2	3
Selection for surgery			2	4
Preoperative preparation for hormone secreting tumours	Endocrinologist, Anaesthetist consultation		2	3
Postop management of acute adrenal insufficiency			3	4
Postoperative management of patients with hormone secreting tumours				3
Management of postop bleeding and infection			3	4
Appropriate follow-up				4
TECHNICAL SKILLS				
Adrenalectomy			1	3

TECHNICAL SKILLS		
Appropriate endocrine operation	Liaison with appropriate specialist e.g. pancreatic surgeon	4
Thyroid lobectomy		4
Total thyroidectomy		4
Thyroidectomy - retrosternal goitre		4
Total thyroidectomy + cervical node dissection		4
Thyroid surgery - reoperation		4
Transcervical thymectomy		4
Parathyroidectomy		4
Parathyroid surgery - reoperation		4
Adrenalectomy		4

PANCREATIC ENDOCRINE

OBJECTIVE
Diagnosis, assessment and management of pancreatic endocrine tumours (level of involvement in diagnosis and operation may vary between HPB and endocrine units).
Diagnosis: Diagnosis and assessment of possible pancreatic endocrine tumours, often in consultation with other specialists.
Management: Management of pancreatic endocrine tumours, level of operative skill expected dependent on local arrangements.
Post-operative care: Management of both immediate and long-term care after surgery for pancreatic endocrine tumour.

			ST4	ST6	ST8
KNOWLEDGE					
Presentation of neuroendocrine tumours	Insulinoma, gastrinoma, MEN1, glucagonoma, VIPoma, nonfunctioning tumour		2	3	4
Investigation			2	3	4
Treatment options			2	3	4
Complications	Bleeding, fistulae, diabetes		2	3	4
CLINICAL SKILLS					
History and examination			2	3	4
Investigations	Biochemical, radiological, preop and intraop	ERCP, EUS	2	3	4
Treatment options and preop preparation	Laparoscopic or open	Pancreatic resection, enucleation, biliary bypass, hepatic resection, ablation of tumour	N/A	2	3
Metastatic disease management			N/A	2	3
Postop complications	Indication for re-operation, Pancreatic leak / fistula, nutrition		2	3	4

TECHNICAL SKILLS			
Reoperation	N/A	2	3
Pancreas enucleation	N/A	2	3
Distal pancreatectomy	N/A	2	3
Pancreatico-duodenectomy	N/A	2	3
Biliary bypass	2	3	4
Left hepatectomy	N/A	2	3
Right hepatectomy	N/A	2	3
Ablation of hepatic tumour	N/A	2	3

MEN SYNDROMES

OBJECTIVE

Management of patients and families with proven or suspected MEN.
Multiple endocrine neoplasia syndromes including MEN1, MEN2 and familial medullary thyroid cancer: A knowledge of the genetics and various presentations of patients with MEN.
Diagnosis and management of MEN Disorders: Ability to diagnose and assess patients with MEN syndromes.
Operative Management: Operative management of MEN disorders.
Post operative management: Post op care, Follow Up

		ST4	ST6	ST8
KNOWLEDGE				
MEN syndromes	MEN1, MEN2, Familial medullary thyroid cancer	2	3	4
Genetics and screening		2	3	4
Pathophysiology		2	3	4
Clinical presentation		2	3	4
Subclinical disease		2	3	4
Natural history		2	3	4
Diagnosis and management	Medullary thyroid cancer, hyperparathyroidism	2	3	4
	Phaeochromocytoma, pancreatic neuroendocrine disease	N/A	2	3
Indications and timing for surgery	Recurrent MTC, parathyroid disease	2	3	4
Complications of organ related operation		2	3	4
Recurrent disease		2	3	4
CLINICAL SKILLS				
History and examination		2	3	4
Investigations	Biochemistry, radiology, cytology/histology, genetic	2	3	4
Management of at risk patients / families	Counselling, endocrinologist and genetics consultation	2	3	4
Choice of appropriate operation		2	3	4
Postoperative management	Relevant to specific operation	N/A	2	3
	MDT Liaison	2	3	4

SUPERFICIAL VENOUS DISEASE

			ST4	ST6	ST8
OBJECTIVES Assessment and management of varicose veins, including recurrent veins and complications					
KNOWLEDGE					
Anatomy			4	4	4
Physiology	Venous dynamics		4	4	4
Pathology	Superficial venous incompetence		4	4	4
Complications	Venous hypertension		3	4	4
	Oedema, lipodermatosclerosis, ulceration		3	4	4
Recurrent varicose veins	Failure of primary intervention		2	4	4
	Neovascularisation		2	3	4
	Recanalisation		2	3	4
	Pelvic venous reflux		2	3	4
CLINICAL SKILLS					
History	Presenting symptoms and complications		4	4	4
Examination	Varicosities and venous incompetence		4	4	4
	Identify complications		3	4	4
Investigation	Use of venous duplex	Interpret results of duplex / venography	3	4	4
	Venography		3	4	4
	Plethysmography		2	3	4
Management options	Indications	Conservative - graduated support	3	4	4
		Injection sclerotherapy+foam	3	4	4
		Endovascular ablation	2	4	4
		Surgery	3	4	4
	Complications		2	3	4

TECHNICAL SKILLS

Prescribe support stockings		2	3	4
Injection scleotherapy		2	3	4
Endovascular ablation		1	3	4
Surgery	Multiple phlebectomies	2	3	4
	Sapheno-femoral junction ligation	3	4	4
	Sapheno-popliteal vein ligation	2	3	4
	Long saphenous vein strip	3	4	4
	Enodovenous ablation of long saphenous vein	3	4	4
	Endovenous ablation of short saphenous vein	3	4	4

DEEP VENOUS DISEASE

OBJECTIVE

Assessment and management of patient with deep venous insufficiency (incl DVT)

		ST4	ST6	ST8
Deep Vein Thrombosis				
KNOWLEDGE				
Anatomy of deep veins lower limb / pelvis		3	4	4
Pathophysiology of DVT		2	3	4
Management of uncomplicated DVT		3	4	4
Early / late complications of DVT		2	3	4
Prophylaxis		4	4	4
Indications for intervention	Caval filter	2	3	4
	Protected thrombolysis	2	3	4
	Surgical Thrombectomy	2	3	4
CLINICAL SKILLS				
History and examination		4	4	4
Investigations	Duplex	2	3	4
	Venography (MR or standard)	2	4	4
TECHNICAL SKILLS				
Endovenous therapy(thrombolysis)		2	3	4
Venous thrombectomy		1	2	3

Chronic deep venous insufficiency

OBJECTIVE

Assessment and management of patient with chronic deep venous insufficiency

KNOWLEDGE

Pathology of deep venous incompetence	DVT	2	3	4
	Valvular dysfunction	1	3	4
	Valvular agenesis	1	3	4
Management options	Compression	2	3	4
	Valvuloplasty	2	3	4
	Valve transplant	1	2	3
	Bypass	1	3	4
	Amputation	1	3	4

CLINICAL SKILLS				
History		2	4	4
Examination	Diagnose complications	2	3	4
Investigation	Duplex	2	3	4
	Venography	2	3	4

ACUTE ISCHAEMIA

		ST4	ST6	ST8
OBJECTIVE Ability to recognise acute limb ischaemia and institute emergency management				
KNOWLEDGE				
Anatomy of arterial system		3	4	4
Pathophysiology of acute limb ischaemia	Embolism	3	4	4
	Thrombosis	3	4	4
	Trauma	3	4	4
	Iatrogenic interventions	3	4	4
Investigations	Doppler	2	3	4
	Angiography	2	3	4
	CT	2	3	4
	Intra-operative angiography	2	3	4
Management	Conservative	2	3	4
	Embolectomy	2	3	4
	Thrombolysis	2	3	4
	Primary amputation	2	3	4
Pathophysiology of compartment syndrome		1	3	4
CLINICAL SKILLS				
History		4	4	4
Examination		4	4	4
Investigations	ABPI, Duplex, angiogram, ECHO	2	3	4
TECHNICAL SKILLS				
Surgical approaches to the arterial tree		2	3	4
Surgical control of upper and lower limb blood vessels		2	3	4
Embolectomy		2	3	4
On table angiography and thrombolysis		1	3	4
Emergency arterial reconstruction		1	2	4
Fasciotomy		3	3	4
Emergency venous control and reconstruction		1	2	4

CHRONIC ISCHAEMIA

		ST4	ST6	ST8
OBJECTIVE				
Management of the chronically ischaemic lower limb, including operation for most cases				
KNOWLEDGE				
Anatomy	Anatomy and embryological development of arteries supplying the lower limb.	4	4	4
Pathology	Detailed pathology of atherosclerosis/thrombosis and complications.	3	4	4
	cystic adventitial disease, popliteal entrapement, fibromuscular dysplasia			
Co-existing disorders	Diabetes, Buerger's disease, autoimmune vasculitis	3	4	4
Congenital disorders	Persistent sciatic artery,			
	Recognition of cardiovascular risk and management	3	4	4
	Understanding of diabetes and impact on arterial disease			
	Epidemiology of tobacco smoking	4	4	4
Management	Detailed knowledge of evidence for role of medical treatment.	2	3	4
	Detailed understanding of risk factors for PAD and how to modify them	3	4	4
	Role of exercise	2	3	4
CLINICAL SKILLS				
History and examination	Ability to take a relevant history and examine vascular system.	4	4	4
Investigation	Role of doppler, duplex ultrasound, CT, MRA and conventional angiography.	2	3	4
	Use of ankle/pressure measurements.	2	4	4
	Percutaneous angiography/MRA/ CTA	1	3	4
Management	Selection for intervention - surgery / angioplasty / amputation	2	3	4
Complications	Management of postoperative wounds, seromas	2	3	4
	Graft complications	1	3	4
	Graft surveillance	2	3	4
Rehabilitation	Post amputation	3	4	4

TECHNICAL SKILLS	Exposure of aorta, iliac, femoral, popliteal and tibial vessels	1	3	4
	Exposure of axiliary artery.	1	2	4
	Vascular anastomosis (end-to-end, end-to-side)	1	4	4
	Aorto-iliac & aorto-femoral bypass	1	3	4
	Ilio-femoral bypass	1	3	4
	Axillo-femoral bypass	1	2	4
	Fem endarterectomy / patch	1	4	4
	Ilio-femoro and femoro-femoral cross-over	1	4	4
	Above-knee femoro-popliteal bypass	1	3	4
	Below-knee femoro-popliteal bypass	1	2	4
	Distal bypass (AT, PT & peroneal)	1	2	4
	Pedal bypass	1	2	4
	Vein preparation in-situ/reversed/arm vein/SSV	1	4	4
	Vein cuff / patch	1	4	4
	Intra-operative assessment doppler & angiography	1	3	4
Amputation	Level Selection	1	4	4
	Digital amputation	2	4	4
	Transmetatarsal amputation	1	4	4
	Transtibial amputation (Posterior flap, skew flap)	1	3	4
	Knee disarticulation	1	2	4
	Transfemoral amputation	1	4	4

UPPER LIMB ISCHAEMIA

		ST4	ST6	ST8
OBJECTIVE				
Ability to recognise and manage; (i) acute upper limb ischaemia, (ii) chronic upper limb ischaemia and (iii) thoracic outlet syndrome.				
KNOWLEDGE				
Anatomy	Upper limb vasculature	3	4	4
	Thoracic outlet	1	3	4
Aetiology	Acute	3	4	4
	Chronic	1	3	4
Pathology		3	4	4
Presentation	Acute	3	4	4
	Chronic	1	3	4
	Thoracic outlet syndrome	1	3	4
Management	Conservative	1	3	4
	Surgical	1	3	4
CLINICAL SKILLS				
History and examination	Acute	3	4	4
	Chronic	1	3	4
	Thoracic outlet syndrome	1	3	4
Investigations	Duplex	1	3	4
	CT angiogram	1	3	4
	MR angiogram	1	3	4
	DSA (Rarely used)	1	3	4
Complications	Venous thrombosis	1	3	4
TECHNICAL SKILLS				
Surgery	Brachial embolectomy	2	3	4
	Surgical bypass	1	3	4
	Thoracic outlet decompression	1	2	3

ANEURYSMAL DISEASE

OBJECTIVE

Assessment and management of straightforward aortic aneurysms
Assessment and management of ruptured aortic aneurysm

		ST4	ST6	ST8
ELECTIVE				
KNOWLEDGE				
Anatomy of aorta and main branches		4	4	4
Pathology of aneurysm formation		3	4	4
Risk factors for aneurysm formation		3	4	4
Risk factors for intervention		3	4	4
Investigation - CT		3	4	4
Screening programmes		2	3	4
Treatment	Open surgery	2	3	4
	Endovascular	2	3	4
Treatment complications		2	3	4
Other aneurysms	Popliteal	2	3	4
	False aneurysms	2	3	4
	carotid	2	3	4
	visceral	2	3	4
	Thoracoabdominal aneurysms	2	3	4
	Aortic dissection	2	3	4
CLINICAL SKILLS				
History and examination		3	4	4
Assessment of comorbidity	Cardiorespiratory / renal	3	4	4
Treatment selection	Conservative	2	3	4
	Open surgery	2	3	4
	Endovascular stent	2	3	4
Complications	Ability to recognise and manage complications: bleeding, thrombosis, embolism, organ failure	2	3	4
	Aneurysm - Aortic endoleak	2	3	4
	Aortocaval fistula repair	1	2	3
	Aorto-intestinal fistula repair colonic ischaemia	1	2	3
	Reoperation infected graft	1	2	4
TECHNICAL SKILLS				
Open surgery	AAA - tube graft - non-ruptured - part operation – Control /	1	2	4

	dissection			
	AAA - tube graft - non-ruptured - part operation - Proximal anastomosis	1	3	4
	AAA - tube graft - non-ruptured - part operation - Distal anastomosis	1	4	4
	AAA - tube graft - non-ruptured - complete operation	1	2	4
	AAA - bifurcated graft - non-ruptured - part operation - Control / dissection	1	3	4
	AAA - bifurcated graft - non-ruptured - part operation - Proximal anastomosis	1	3	4
	AAA - bifurcated graft - non-ruptured - part operation - Distal anastomosis	1	3	4
	AAA - bifurcated graft - non-ruptured - complete operation	1	2	4
	Aneurysm - Endovascular stent graft	1	2	4
	Aneurysm - Supra-renal aortic aneurysm – repair	N/A	2	4
EMERGENCY				
KNOWLEDGE				
Risk factors for aneurysm rupture		4	4	4
Appropriate/timely investigation of an emergency aneurysm		3	4	4
Open and endovascular treatment options	Endovascular planning	2	3	4
Surgical methods of immediate aortic control; Supra celiac and infrarenal approaches		3	4	4
Intra-abdominal compartment syndromes and intra-operative management		2	3	4
Complications of open emergency aortic surgery		3	4	4
Complications of emergency endovascular stent graft		2	3	4
CLINICAL SKILLS				
History and examination		4	4	4
Assessment of comorbidity		3	4	4
Complications	Recognise and manage complications: bleeding, thrombosis, embolism, organ failure	2	3	4

TECHNICAL SKILLS

Selection of patients for conservative management, open operation or endovascular stent		2	3	4
Open Surgery	AAA - tube graft - ruptured - part operation – Control / dissection	1	2	4
	AAA - tube graft - ruptured - part operation - Proximal anastomosis	1	2	4
	AAA - tube graft - ruptured - part operation - Distal anastomosis	1	2	4
	AAA - tube graft - ruptured - complete operation	1	2	4
	AAA - bifurcated graft - ruptured - part operation - Control / dissection(	1	2	4
	AAA - bifurcated graft - ruptured - part operation - Proximal anastomosis	1	2	4
	AAA - bifurcated graft - ruptured - part operation - Distal anastomosis	1	2	4
	AAA - bifurcated graft - ruptured - complete operation	1	2	4
	Aneurysm - Supra-renal aortic aneurysm – repair	1	2	4
	Femoral thrombectomy and or additional lower limb revascularisation.	1	2	4
Endovascular	Aneurysm - Endovascular stent graft	1	2	4

PERIPHERAL ARTERY ANEURYSM		ST4	ST6	ST8
Objective				
To know of and treat aneurysms of peripheral and visceral arteries		2	3	4
Knowledge				
	Common types of aneurysms	2	3	4
	popliteal, renal, mesenteric, carotid	2	3	4
Clinical Skills	Investigation	N/A	2	4
	Radiological treatment	N/A	2	4
	Surgical treatment	N/A	2	4

VASCULAR ACCESS (VA)

		ST4	ST6	ST8
OBJECTIVE				
To describe need for VA common methods of VA establish VA manage complications of VA				
Knowledge	anatomy of upper and lower limb arteries and veins	3	4	4
	List indications for VA	3	4	4
	Knowledge of methods of renal support; advantages and disadvantages	3	4	4
	Physiology of arterio-venous fistulae	3	4	4
	Knowledge of conduit material	3	4	4
	List complications of VA	3	4	4
	Knowledge of preoperative investigations including ultrasound	2	3	4
Clinical Skills	Pre-operative assessment and choice of VA	N/A	2	4
	Arrange appropriate investigations	N/A	2	4
	Create brachiocephalic fistula	N/A	2	4
	Create basilic vein transposition AV fistula	N/A	2	4
	Create forearm loop graft	N/A	2	4
	create thigh loop graft	N/A	2	4
	Undertake revision procedures	N/A	2	4
	Arrange surveillance	N/A	2	4

RENAL VASCULAR DISEASE

		ST4	ST6	ST8
OBJECTIVE				
To be competent to manage a patient with renal artery disease and its complications				
KNOWLEDGE				
Anatomy of renal arteries		3	4	4
Physiology of renal control of blood pressure		3	4	4
Pathophysiology of renovascular disease		2	3	4
Clinical features of renovascular disease		2	4	4
Investigations	Duplex	2	3	4
	CT / CT angiography	2	3	4
	MRI / MR Angiography	2	3	4
	Selective venous sampling	2	3	4
Selection for treatment		2	3	4
Treatment options	Radiological interventions	2	3	4
	Stenting	2	3	4
	Surgery	2	3	4
CLINICAL SKILLS				
History and examination	Features of renal failure	3	4	4
	Suspected renal artery disease	2	3	4
Investigations		2	3	4
TECHNICAL SKILLS				
Radiological interventions		1	3	4
Surgery for renal artery disease		1	2	4

CAROTID ARTERY DISEASE

		ST4	ST6	ST8
OBJECTIVE				
Assessment and management of patients with cerebrovascular disease Surgical management of a patient with a TIA/Stroke				
KNOWLEDGE				
Anatomy and pathophysiology of stroke		3	4	4
Classification of stroke		2	4	4
Stroke severity score		2	4	4
Definition of TIA and differential diagnosis		2	4	4
Aetiology and epidemiology of stroke	Genetic causes	2	4	4
	Risk factors for cerebral infarction	2	4	4
Guidelines for hypertension and hyperlipidaemia management	BHS, NICE, RCP, SIGN	1	3	4
Indications and use of investigations	CT, MRI/A, Carotid doppler, transcranial doppler, IA DSA, Echocardiography	2	4	4
Indications for conservative or surgical management		2	3	4
Acute intervention including thrombolysis and surgery		2	3	4
Complications and multidisciplinary management		2	3	4
Stroke prevention	Cost effectiveness	1	3	4
	Antiplatelet agents	1	3	4
	Treatment of atrial fibrillation	1	3	4
Selection for carotid endarterectomy and stenting			1	3
Techniques of carotid surgery	Local versus general anaesthesia	1	3	4
	Standard versus retrojugular approach	N/A	2	4
	Standard versus eversion endarterectomy	N/A	2	4
	Carotid shunts	N/A	2	4
	Distal intimal tacking sutures	N/A	2	4
	Primary versus patch closure	N/A	2	4
Use and interpretation of intra-operative measurements	Stump pressure measurement	N/A	2	4
	TCD	N/A	2	4
Carotid body tumours	pathology	N/A	2	4
	investigation	N/A	2	4
	surgical treatment	N/A	2	4

Carotid Dissection	pathology	N/A	2	4
	management	N/A	2	4
Carotid Trauma	types	N/A	2	4
	investigation	N/A	2	4
	radiological treatment	N/A	2	4
	Surgical treatment	N/A	2	4
CLINICAL SKILLS				
History and examination		3	4	4
Appropriate investigations	Carotid duplex, MRA, CT scan and angiogram, carotid arteriography	2	3	4
Selection of patients	Surgery or interventional radiology	1	3	4
Cardiac assessment	Synchronous cardiac and carotid surgery	N/A	2	4
Postop complications	Stroke, bleeding, airway obstruction, acute occlusion, cranial nerve injury	1	3	4
Medical management	Antiplatelet agents, hypertension, hyperlipidaemia	2	3	4
Communication of risks and benefits of intervention		1	3	4
Communication of risk and impact on lifestyle	Driving and occupation	1	3	4
Follow-up		1	3	4
TECHNICAL SKILLS				
Carotid endarterectomy - complete - GA		1	2	4
Carotid endarterectomy - complete - LA		N/A	2	4
Carotid **Endarterectomy** - part - dissection		N/A	2	4
Carotid endarterectomy - part - endarterectomy		N/A	2	4
Carotid endarterectomy - part - patch closure		N/A	2	4
Re-do carotid endarterectomy		N/A	1	3
Endovascular stent		N/A	1	3

MESENTERIC VASCULAR DISEASE

		ST4	ST6	ST8
OBJECTIVE				
Assessment and management of patients with acute and chronic mesenteric ischaemia				
KNOWLEDGE				
Anatomy of mesenteric arterial and venous system		3	4	4
Physiology of mesenteric vasculature		3	4	4
Pathophysiology of mesenteric ischaemia		3	4	4
Presentation of mesenteric vascular disease	Acute and chronic	3	4	4
Investigation	Mesenteric angiography	2	3	4
	CT / CT angiography	2	3	4
Treatment	Radiological	1	2	3
	Surgical	1	2	3
Complications		2	3	4
CLINICAL SKILLS				
History and examination	Acute presentation	2	3	4
	Chronic presentation	1	3	4
Resuscitation		3	4	4
Investigations		2	3	4
Management		2	3	4
TECHNICAL SKILLS				
Radiological intervention		1	2	3
Surgery		1	2	3
Angioplasty		1	2	3

VASCULAR TRAUMA

		ST4	ST6	ST8
OBJECTIVE				
Identification, assessment and management of injuries to blood vessels				
KNOWLEDGE				
Surgical anatomy	Relationship to fractures, nerves, associated structures	3	4	4
Mechanisms of vascular injury	Traumatic	3	4	4
	Iatrogenic	3	4	4
Pathophysiology of trauma and muscle ischaemia		2	4	4
Pathophysiology of A-V fistula		2	3	4
Investigations	Invasive	2	3	4
	Non-invasive	2	3	4
Operative approach to specific injuries	Vascular	2	3	4
	Combined arterial and venous	2	3	4
	Orthopaedic / neurological	2	3	4
Technical options for repair		2	3	4
Fasciotomy		2	4	4
CLINICAL SKILLS				
Symptoms and signs of acute arterial / venous injury		3	4	4
Investigation	Ankle / brachial pressure index	2	4	4
	Duplex	2	3	4
	DSA	2	3	4
Manage multiply injured patient		3	4	4
Manage systemic effects of arterial trauma - rhabdomyolysis		2	3	4
TECHNICAL SKILLS				
Surgical options	Ligation	2	3	4
	Lateral suture repair	2	3	4
	End to end anastomosis	2	3	4
	Interposition vein / prosthetic graft	2	3	4
	Panel / spiral grafts	2	3	3
	Fasciotomy	2	4	4
Radiological	use of shunts	2	4	4

Imaging techniques	2	4	4
options for control of bleeding	1	2	4

HYPERHYDROSIS

		ST4	ST6	ST8
OBJECTIVE				
Assessment and management of patients with hyperhidrosis				
KNOWLEDGE				
Anatomy of sympathetic nervous system		3	4	4
Physiology of sympathetic nervous system		3	4	4
Pathophysiology		2	3	4
Presentation		2	4	4
Treatment options	Conservative + Medical	2	4	4
	Surgical - cervical and lumbar sympathectomy	2	4	4
CLINICAL SKILLS				
History and examination		3	4	4
Management strategy		1	3	4
TECHNICAL SKILLS				
Axillary Botox therapy		2	3	4
Surgery	Thoracoscopic sympathectomy	1	3	4

LYMPHOEDEMA

		ST4	ST6	ST8
OBJECTIVE				
Assessment and management of patients with lymphoedema				
KNOWLEDGE				
Anatomy of lymphatic system		2	3	4
Physiology		2	3	4
Pathophysiology		2	3	4
Classification of lymphoedema	Primary	1	3	4
	Secondary	1	3	4
Clinical features		2	3	4
Complications	Chronic effects	1	3	4
Investigation	Lymphoscintigraphy	1	3	4
	Lymphangiogram	1	2	2
	CT/ MRI	1	3	4
Management	Conservative	1	3	4
	Surgical options	1	3	3
CLINICAL SKILLS				
History and examination		2	3	4
Investigation		1	3	4
Management plan		N/A	2	4

INTERVENTIONAL RADIOLOGY

OBJECTIVE

Radiation safety, principles and indication for imaging and interventional procedures.
Understand basics of peripheral angiography and intervention

		ST4	ST6	ST8
KNOWLEDGE				
Principles	Physics and safety of ionising radiation - staff and patients	2	3	4
	Different organ sensitivity and cumulative safe dose	N/A	2	4
	Statutory requirements for use of ionising radiation	2	3	4
	Risk of skin injuries	2	3	4
	Radiation protection and monitoring	2	3	4
	Complications of interventional radiation use	1	3	4
Arterial and venous access sites		N/A	2	4
Measures to improve angiographic image		N/A	2	4
Risks of radiation contrast		N/A	2	4
Risks of angiography and intervention		N/A	2	4
Indications for angioplasty / stenting			3	4
Expected results of angioplasty / stenting		2	3	4
Complimentary role of endovascular therapy	Medical / surgical therapy	2	3	4
Role of different catheter types		N/A	2	4
Use of different guidewire types		N/A	2	4
CLINICAL SKILLS				
Safe use of radiation equipment		2	3	4
Use of protective equipment		2	3	4
Use of minimal dose of radiation		2	3	4
Minimise risk of blood borne pathogens in radiology suite		2	3	4
Complications	Angioplasty	1	3	4
	Stenting	1	3	4
TECHNICAL SKILLS				
Retrograde femoral artery puncture		N/A	2	4

Antegrade femoral artery puncture		N/A	2	4
Other arterial puncture		N/A	2	4
Ultrasound guided vascular puncture		N/A	2	4
Venous access		2	3	4
Secure vascular access with sheath	Flushes catheter and sheath	N/A	2	4
Position guidewire using fluoroscopy		N/A	2	4
Place non-selective catheter in aorta		N/A	2	3
Satisfactory diagnostic angiograms	Peripheral, renal, mesenteric, fistula	N/A	2	3
Recognises inadequate study		N/A	2	4
Use drugs appropriately	Vasodilators, anticoagulants, analgesics, sedatives, antiperistaltics	N/A	2	4
Angioplasty	Safely negotiates stenosis, appropriate balloon, check angiogram	N/A	2	4
Stenting	Primary and secondary stenting	N/A	2	4

ACCESS FOR DIALYSIS

OBJECTIVE

ST4: Gain early exposure to access for renal dialysis; understand and apply principles of pre- and post-operative care, perform peritoneal access and observe vascular access
ST6: Provide access for renal dialysis for most patients with renal failure.
ST8: Provide access for renal dialysis for most patients with renal failure.

		ST4	ST6	ST8
KNOWLEDGE				
Renal failure	Classification, causes pathophysiology, treatment options	3	4	4
Renal dialysis	Indications	2	3	4
	Types of dialysis	2	3	4
	Access sites	2	3	4
	Timing of access	2	3	4
	Complications	2	3	4
Vascular anatomy of upper and lower limbs		3	4	4
Preoperative and postoperative management	Cardiac function and venous conduits	3	4	4
CLINICAL SKILLS				
Preop preparation including investigations		2	4	4
Identify access site		3	4	4
Needling techniques	Buttonhole	1	4	4
	Rope-ladder	1	4	4
PTFE grafts - indications		1	3	4
Postop investigations		2	3	4
Fluid management		2	3	4
Drug therapy		2	3	4
Vascular complications diagnosis	Steal, Venous hypertension, cardiac failure, aneurysm	2	3	4
Postop complications	Thrombosis	2	3	4
	Haemorrhage	2	3	4
	Infection	2	3	4
	CAPD peritonitis incl. sclerosing peritonitis	2	3	4
TECHNICAL SKILLS				
Insert central venous dialysis catheter	Tunnelled catheter	3	4	4
Insert and remove peritoneal catheters		3	4	4

Access a-v fistula		1	4	4
A-V fistula ligation		1	4	4
Construct a-v fistula	radio-cephalic, brachio-cephalic, brachio-basilic	1	3	4
Access secondary vascular		1	3	4

ORGAN RETRIEVAL

OBJECTIVE
The ability to retrieve abdominal organs for transplantation

		ST4	ST6	ST8
KNOWLEDGE				
Contraindications to organ donation	General	3	4	4
	Organ specific	3	4	4
Criteria for brain stem death		3	4	4
Pathophysiology of brain stem death		3	4	4
Principles of donor management		2	3	4
Principles of organ preservation		2	3	4
Surgical anatomy of multi-organ retrieval		3	4	4
CLINICAL SKILLS				
Assess and manage donors - live and non-heart beating		2	3	4
Multiple abdominal organ retrieval from cadaveric donors		2	3	4
TECHNICAL SKILLS				
Kidney transplant - donor: cadaver		2	3	4
Kidney transplant - donor: live		2	3	4
Liver transplant - donor: cadaver hepatectomy		2	3	4
Pancreatic transplant - donor pancreatectomy		2	3	4

RENAL TRANSPLANT

OBJECTIVE
ST4: Gain early exposure to renal transplantation; understand and apply principles of pre- and post-operative care and observe cadaveric and live donor transplantation.
ST6: Ability to assess patients for renal transplantation and manage their care with assistance.
ST8: Ability to assess patients for renal transplantation and manage their care.

		ST4	ST6	ST8
KNOWLEDGE				
Causes of acute (ARF) and chronic renal failure (CRF)		3	4	4
Pathophysiology of ARF & CRF		3	4	4
Treatment options		3	4	4
Complications		3	4	4
Indications for kidney transplantation		2	4	4
Cadaveric and live kidney donation		2	4	4
Kidney anatomy and anomalies		3	4	4
Implantation site		3	4	4
Immunology	HLA matching, cytotoxic cross match, rejection, immunosuppression	2	3	3
	Cytotoxic cross match	2	3	3
	Rejection	2	3	3
	Immunosuppression	2	3	4
Principles of pre and postop management		2	3	4
CLINICAL SKILLS				
Select appropriate patient from waiting list		2	3	4
Postop care	Fluid balance, drug therapy, renal biopsy	2	3	4
Postop complications	Vascular, ureteric complications	2	3	4
	Rejection	2	3	4
	Infection	2	3	4
	Drug side effects	2	3	4

TECHNICAL SKILLS

Transplant - donor operation - cadaver	1	3	4
Transplant - donor operation - live donor	1	2	3
Kidney transplant - complete operation - cadaver donor	1	2	4
Kidney transplant - complete operation - live donor	1	1	3
Kidney transplant - complete operation - regraft	N/A	1	4
Kidney transplant - part - dissection of iliac vessels	2	3	4
Kidney transplant - part - renal vein anastomosis	2	3	4
Kidney transplant - part - renal artery anastomosis	2	3	4
Kidney transplant - part - ureteric anastomosis to bladder	2	3	4
Kidney transplant - part - uretero-ureterostomy	N/A	1	4

PAEDIATRIC RENAL TRANSPLANTATION

OBJECTIVE
Ability to assess patients for renal transplantation and manage their care

		ST4	ST6	ST8
KNOWLEDGE				
Acute and chronic renal failure	Causes, pathophysiology, treatment options, Complications	4	4	4
Indications and contraindications	Kidney transplantation	4	4	4
	Cadaveric and live kidney donation	4	4	4
Kidney anatomy and anomalies		4	4	4
Implantation site		4	4	4
Immunology	HLA matching, cytotoxic cross match, rejection, immunosuppression	4	4	4
Preop and postop management		3	4	4
CLINICAL SKILLS				
Select appropriate patient				
Postop care with paediatric nephrologist	Fluid management, drug therapy, renal biopsy	4	4	4
Postop complications	Vascular, ureteric	4	4	4
	Rejection, infection drug side effects	4	4	4
TECHNICAL SKILLS				
Paediatric - cadaver kidney transplant		2	3	4
Paediatric live donor nephrectomy		2	3	4
Paediatric live donor transplant		2	3	4

PANCREATIC TRANSPLANTATION

OBJECTIVE
Assessment of patients for pancreatic transplantation in consultation with physicians; operative management and post operative care. Full competency is not expected by CCT.

		ST4	ST6	ST8
KNOWLEDGE				
Diabetes	Causes	3	4	4
	Pathophysiology	3	4	4
	Treatment options	3	4	4
	Complications	3	4	4
Indications and contraindications for transplant in diabetes	Kidney transplant alone	1	3	4
	Simultaneous kidney + pancreas transplant	1	3	4
	Pancreas transplant alone	1	3	4
	Pancreas transplant after kidney transplant	1	3	4
Indications and contraindications for pancreatic donation		1	3	4
Anatomy of pancreas		3	3	4
Implantation site		1	3	4
Immunology	HLA match, cytotoxic cross match, rejection, immunosuppression	1	3	4
Preop preparation and postop management		1	3	4
CLINICAL SKILLS				
Select appropriate patient		1	3	4
Postop care	Fluid management, drug therapy, pancreatic biopsy	1	3	4
Postop complications	Vascular, duct leaks, pancreatitis	1	3	4
	Rejection, infection, drug side effects	1	3	4
TECHNICAL SKILLS				
Pancreatic transplant - donor pancreatectomy		1	3	4
Pancreatic transplant implant graft		N/A	2	4
Convert bladder drainage to enteric drainage		N/A	2	4

LIVER TRANSPLANTATION

OBJECTIVE
ST4: Assess and manage patients undergoing liver transplantation with assistance.
ST6: Assess and manage patients undergoing liver transplantation with assistance.
ST8: Assess and manage patients undergoing liver transplantation

		ST4	ST6	ST8
KNOWLEDGE				
Acute and chronic liver failure	Causes	3	4	4
	Pathophysiology	3	4	4
	Complications	3	4	4
	Treatment options	3	4	4
Indications and contraindications	Liver transplant	1	3	4
	Cadaveric and live liver donation	1	3	4
Liver anatomy	Anatomical variants	1	3	4
	Surgical anatomy for splitting, reduction, live donation	1	3	4
Immunology	Rejection	1	4	4
	Immunosuppression	2	4	4
Preop preparation and postop management		1	3	4
Perioperative management		1	3	4
Complications of liver transplantation	Management of complications	1	3	4
CLINICAL KNOWLEDGE				
Select appropriate patients		1	3	4
Postop care	Fluid management, drug therapy, liver biopsy	1	4	4
Diagnose and treat complications	Vascular, biliary	1	3	4
	Rejection	1	4	4
	Infection	1	4	4
	Recurrent disease	1	3	4
	Drug side effects	1	4	4
	Liver biopsy	1	3	4

TECHNICAL SKILLS

Liver transplant - donor - cadaveric hepatectomy	1	3	4
Liver transplant - part - recipient hepatectomy	1	3	4
Liver transplant-part-porta hepatis dissection	1	3	4
Liver transplant-part-caval dissection+hepatic venous dissection	1	3	4
Liver transplant-part-implantation of donor liver	1	3	4
Liver transplant-part-caval anastomosis	1	3	4
Liver transplant-part-portal vein anastomosis+liver reperfusion	1	3	4
Liver transplant-part-portal venous conduit	N/A	2	3
Liver transplant-part-hepatic artery anastomosis	N/A	2	3
Liver transplant-part-hepatic arterial conduit	N/A	2	3
Liver transplant-part-duct-to-duct biliary anastomosis	1	3	4
Liver transplant-part-Roux loop biliary anastomosis	1	3	4
Liver transplant-part-workbench preparation	1	3	4
Liver transplant-part-donor liver reduction	N/A	1	3
Liver transplant-part-donor liver split	N/A	1	3

ABDOMINAL PAIN

OBJECTIVES
The ability to assess and manage a child with abdominal pain including appendicectomy.

	ST4	ST6	ST8
KNOWLEDGE			
Pattern of symptoms and relation to likely pathology and age of child	2	3	4
Differential diagnosis	2	3	4
Place and value of investigations	2	3	4
Place of operative intervention, and associated outcomes	2	3	4
Clinical Skills			
Ability to assess ill child	2	3	4
Ability to form a viable investigation and treatment plan	2	3	4
Technical Skills			
Appendicectomy	2	3	4
Laparotomy/laparoscopy	2	3	4

INTUSSUSCEPTION

Objective

The ability to assess and manage a child with intussusception including management with an expert radiologist and operation.

	ST4	ST6	ST8
Knowledge			
Pattern of symptoms and relation to likely pathology and age of child	2	3	4
Role of radiology both for diagnosis and interventional management	2	3	4
Differential diagnosis	2	3	4
Clinical Skills			
Ability to assess child and recognise severity of illness	2	3	4
Ability to take appropriate resuscitative measures and form a viable investigation and	2	3	4
Treatment Plan			
Ability to communicate with all relevant groups	2	3	4
Reduction of intussusception	1	2	3

CHILD WITH VOMITING

Objective

The ability to assess a child with vomiting.

	ST4	ST6	ST8
Knowledge			
Patterns of symptoms and relation to likely pathology	2	3	4
Significance of bile stained vomiting	2	3	4
Place and value of investigations	2	3	4
Differential diagnosis	2	3	4
Methods of medical management	2	3	4
Place of operative intervention, and associated outcomes	2	3	4
Clinical Skills			
Ability to assess ill child including an assessment of severity of dehydration	2	3	4
Ability to form a viable investigation and treatment plan	2	3	4
Technical Skills			
Pyloromyotomy	1	2	3

CONSTIPATION

Objective

The ability to assess and manage a child with constipation

	ST4	ST6	ST8
Knowledge			
Pattern of symptoms and relation to likely pathology and age of child	2	3	4
Place and value of investigations	2	3	4
Differential diagnosis to include medical anomalies and socio-psychological aspects of symptom	2	3	4
Clinical Skills			
Ability to assess child	2	3	4
Ability to form a viable investigation and treatment plan	2	3	4
To include community aspects of further management	2	3	4
Technical Skills			
Manual evacuation	2	3	4

ABDOMINAL WALL CONDITIONS

OBJECTIVE
The ability to assess and manage a child with abdominal wall hernia
The ability to assess and manage a child with epigastric hernia
The ability to assess and manage a child with supra-umbilical hernia
The ability to assess and manage a child with umbilical hernia

		ST4	ST6	ST8
Knowledge				
Epigastric hernia:	Developmental anatomy	1	2	3
	Natural history	2	3	4
	Indications for and outcomes of surgery	2	3	4
Supra-umbilical hernia:	Developmental anatomy	1	2	3
	Natural history to include contrast with umbilical hernia	2	3	4
	Indications for and outcomes of surgery	2	3	4
Umbilical hernia:	Developmental anatomy	1	2	3
	Natural history	2	3	4
	Indications for and outcomes of surgery	2	3	4
	Place of conservative management	2	3	4
Clinical Skills				
Epigastric hernia:	Ability to assess child and reach appropriate diagnosis	2	3	4
	Ability to form a treatment plan	2	3	4
Supra-umbilical hernia:	Ability to assess child and reach appropriate diagnosis	2	3	4
	Ability to form a treatment plan	2	3	4
Umbilical hernia:	Ability to assess child and reach appropriate diagnosis	2	3	4
	Ability to form a treatment plan	2	3	4
Technical Skills				
Epigastric hernia:	Abdominal wall hernia operation	2	3	4
Supra-umbilical hernia:	Abdominal wall hernia operation	2	3	4
Umbilical hernia:	Abdominal wall hernia operation	2	3	4

CHILD WITH GROIN CONDITION

Objective

The ability to assess and manage a child with a common groin condition
The ability to assess and manage a child with undescended testis including orchidopexy in straightforward cases
The ability to assess and manage a child with penile inflammation
The ability to assess and manage a child with inguinal hernia
The ability to assess and manage a child with hydrocele
The ability to assess and manage a child with an acute scrotal condition

		ST4	ST6	ST8
Knowledge				
Undescended testis				
	Developmental anatomy	2	3	4
	Natural history of undescended testis and retractile testis	2	3	4
	Place of conservative management	2	3	4
	Indications for and outcomes of surgery	2	3	4
Penile inflammatory conditions	Developmental anatomy	2	3	4
	Natural history	2	3	4
	Place of conservative management	2	3	4
	Indications for and outcomes of surgery	2	3	4
Inguinal Hernia	Developmental anatomy	2	3	4
	Natural history	2	3	4
	Indications for and outcomes of surgery	2	3	4
Hydrocele	Developmental anatomy	2	3	4
	Natural History	2	3	4
	Place of conservative management	2	3	4
	Indications for and outcomes of surgery	2	3	4
Acute scrotum	Natural history	2	3	4
	Place of conservative management	2	3	4
	Indications for and outcomes of surgery	2	3	4
Clinical Skills				
Undescended testis	Ability to assess child and reach appropriate diagnosis	2	3	4
	Ability to form a treatment plan	2	3	4
	Ability to differentiate true undescended testis from retractile variant	2	3	4

Penile inflammatory conditions	Ability to assess child and reach appropriate diagnosis	2	3	4
	Ability to form a treatment plan	2	3	4
Inguinal Hernia	Ability to assess child and reach appropriate diagnosis	2	3	4
	Ability to form a treatment plan	2	3	4
Hydrocele	Ability to assess child and reach appropriate diagnosis	2	3	4
	Ability to form a treatment plan	2	3	4
Acute scrotum	Ability to access child and reach appropriate diagnosis	2	3	4
	Ability to form a treatment plan	2	3	4
Technical Skills				
Undescended testis	Orchidopexy	1	2	3
Penile inflammatory conditions	Circumcision	2	3	4
Inguinal hernia	Inguinal hernia (not neonatal) operation	1	3	4
Hydrocele	Hydrocele operation	1	3	4
Acute scrotum	Inguinal hernia (not neonatal) operation	1	3	4
	Hydrocele operation	1	3	4
	Operation for testicular torsion	1	3	4

UROLOGICAL CONDITIONS

OBJECTIVE

The ability to assess and manage a child with a common urological condition
The ability to assess a child with haematuria
The ability to assess a child with urinary tract infection
The ability to assess whether circumcision is indicated and carry it out.

		ST4	ST6	ST8
Knowledge				
Haematuria	Pattern of symptoms and relation to likely pathology and age of child	2	3	4
	Place and value of investigations	2	3	4
	Differential diagnosis	2	3	4
Urinary Tract Infection	Pattern of symptoms and relation to likely pathology and age of child	2	3	4
	Place and value of investigations	2	3	4
	Differential diagnosis	2	3	4
Circumcision	Developmental anatomy of the foreskin	1	2	3
	Natural history of the foreskin	2	3	4
Clinical Skills				
Haematuria:	Ability to assess child	2	3	4
	Ability to form a viable investigation and treatment plan	2	3	4
	Ability to communicate with all relevant groups	2	3	4
Urinary Tract Infection:	Ability to assess child	2	3	4
	Ability to form a viable investigation and treatment plan	2	3	4
	Ability to communicate with all relevant groups	2	3	4
Circumcision	Ability to assess indications for circumcision	2	3	4
Technical Skills				
Haematuria	Suprapubic catheter insertion	2	3	4
Circumcision	Circumcision	2	3	4

HEAD AND NECK SWELLINGS

OBJECTIVE
The ability to assess and manage a child with a head and neck swelling

	ST4	ST6	ST8
Knowledge			
Pattern of symptoms and relation to likely pathology and age of child	2	3	4
Place and value of investigations	2	3	4
Differential diagnosis	2	3	4
Relevance of embryonic development of head and neck structures	2	3	4
Clinical Skills			
Ability to assess child	2	3	4
Ability to form a viable investigation and treatment plan	2	3	4
Technical Skills			
Lymph node biopsy	1	2	3

TRAUMA

OBJECTIVE
The ability to assess and manage a child with trauma.

	ST4	ST6	ST8
Knowledge			
Algorithms for assessment of trauma victims - primary survey	2	3	4
Algorithms for assessment of trauma victims - secondary survey	2	3	4
Likely effects of different types of trauma and relation to age of child	2	3	4
Investigation protocols and local variations thereof	2	3	4
4 Awareness of NAI and local procedures for dealing with this category of trauma	2	3	4
Clinical Skills			
Ability to appropriately assess trauma cases and carry out resuscitative measures	2	3	4
Ability to prioritise interventions	2	3	4
Ability to act as part of a team or lead team as appropriate	2	3	4
PALS course	2	3	4
Technical Skills			
Chest drain insertion	1	3	4
Central venous line insertion	1	3	4
Suprapubic catheter insertion	1	3	4

MISCELLANEOUS

Objective
The ability to assess and manage a child with superficial abscess or with ingrowing toenail.

Knowledge		**ST4**	**ST6**	**ST8**
Superficial Abscess	Causes of superficial abscess in children	2	3	4
	Anatomy of underlying structures	2	3	4
	Predisposing conditions	2	3	4
Ingrowing Toenail	Causes of ingrowing toenail	2	3	4
	Anatomy of nail and nail bed	2	3	4
	Treatment options available	2	3	4
Clinical Skills				
Superficial Abscess	History and examination	2	3	4
	Recognition of the need for other investigation	2	3	4
	Recognition of need for drainage or antibiotics	2	3	4
Ingrowing Toenail	History and examination	2	3	4
	Recognition of need for operative treatment	2	3	4
Technical Skills				
Superficial Abscess	Abscess drainage	2	3	4
Ingrowing Toenail	Ingrowing toenail operation	2	3	4

MILITARY SURGERY

OBJECTIVE
To provide the isolated consultant surgeon on deployment with the ability to perform life and limb saving procedures in arduous conditions. The purpose is to stabilise the patient for evacuation no longer than 48 hours from wounding. This section of the curriculum is still being developed.

Pathophysiology of trauma: Knowledge of the pathophysiology of different types of trauma.

Safe patient transfer: Ability to make the correct decision re patient transfer.

Trauma Laparotomy: Ability to perform trauma laparotomy.

Paediatric trauma laparotomy: Ability to perform paediatric trauma laparotomy.

Trauma thoracotomy: Ability to perform trauma thoracotomy.

Damage control surgery: Judgement in performing damage control surgery if definitive laparotomy inappropriate.

Difficult peripheral haemorrhage: Ability to manage difficult peripheral haemorrhage.

Severely traumatised ischaemic limbs: Appropriate urgent management of severely traumatised ischaemic limbs.

Head Injury: Urgent management of head injury.

Pregnant woman with severe abdominal trauma: Urgent management of pregnant woman with abdominal trauma.

Burns: Management of burns in the first 48 hours.

Surgical airway management in severe head and neck injury: Safe management of the airway in severe head and neck injury.

Stabilisation of the jaw after severe facial injury: Stabilise the jaw after severe facial injury.

		ST4	ST6	ST8
Knowledge				
Pathophysiology of trauma:				
Pathophysiology of	Blunt trauma	2	3	4
	Penetrating injury (low and high energy trauma	2	3	4
	Blast injury	2	3	4
	Burns	2	3	4
Safe patient transfer:	Understanding of strategic/tactical situation	1	3	4
Trauma Laparotomy:	Indications for laparotomy	2	3	4

	Indications for laparostomy	2	3	4
Paediatric trauma laparotomy:	Paediatric physiology	1	2	3
Trauma thoracotomy:	Indications for thoracotomy	2	3	4
	Incisions used in particular circumstances	2	3	4
Damage control surgery:	Damage control vs. definitive laparotomy	2	3	4
Difficult peripheral haemorrhage:	Anatomical approach to major vessels	2	3	4
Severely traumatised ischaemic limbs:	Anatomical approach to major vessels	2	3	4
Pregnant woman with severe abdominal trauma:	Indications for Caesarean section	1	3	4
Burns:	Knowledge of fluid replacement regimes for burns patients	2	3	4
Clinical Skills				
Safe patient transfer:	Awareness of evacuation assets	1	3	4
	Interventional surgery only if the patient cannot be transferred safely within the relevant timeframe	1	3	4
Trauma Laparotomy:	Use of Focussed Abdominal Sonography for Trauma	1	3	4
	Exposure of retroperitoneal structures	1	3	4
	Techniques for arresting haemorrhage including liver packing	1	3	4
	Safe anastomotic techniques for gut and blood vessels	2	3	4
	Appropriate formation of stomas	2	3	4
Trauma thoracotomy:	Lung resection	N/A	2	3
	Cardiac repair without bypass	N/A	2	3
Damage control surgery:	Management of the postoperative patient in difficult circumstances e.g. acidosis,coagulopathy, rewarming	1	2	3
Difficult peripheral haemorrhage:	Safe control of major vessels	1	3	4
Severely traumatised ischaemic limbs	Safe control of major vessels	1	3	4
	Repair of vessels	1	2	3
	Use of temporary shunts	1	2	3

	Fasciotomy	1	3	4
	Decision to amputate	N/A	3	4
	Amputation AK	1	3	4
	Amputation BK	1	3	4
	Amputation upper limb	1	3	4
Pregnant woman with severe abdominal trauma:	Caesarean section	N/A	2	3
Burns:	Escharotomy	1	3	4
	Fluid replacement	2	3	4
Surgical airway management in severe head and neck injury:	Cricothyroidotomy	2	3	4
	Tracheostomy	1	2	3
Stabilisation of the jaw after severe facial injury:	Interdental wiring	1	2	3
Technical Skills				
Trauma Laparotomy:	Laparotomy-trauma	2	3	4
Trauma thoracotomy:	Thoracotomy-trans-sternal	1	3	4
	Thoracotomy-lateral	1	3	4
Severely traumatised ischaemic limbs	Amputation-AK	2	3	4
	Amputation-BK	2	3	4
	Amputation-upper limb	2	3	4
Surgical airway management in severe head and neck injury:	Cricothyroidotomy (percutaneous tracheostomy)	1	3	4

OPTHALMOLOGY

Objective

Ability to deal with common minor eye emergencies and refer serious problems appropriately

	ST4	ST6	ST8
Knowledge			
Anatomy of the eye	N/A	N/A	2
Causes and presentation of foreign bodies in the eye	N/A	N/A	2
Cause and presentation of dendritic ulcer	N/A	N/A	2
Causes of flash burns to the eye	N/A	N/A	2
Common eye infection, their presentation and complications	N/A	N/A	2
Other causes of red eye, including glaucoma	N/A	N/A	2
Clinical Skills			
Examination of the eye	1	2	3
Removal of foreign bodies from cornea	1	2	3
Diagnosis and management of dendritic ulcer	1	2	3
Diagnosis and management of flash burns	1	2	3
Diagnosis and management of common eye infections	1	2	3
Slit lamp examination	1	2	3
Tonometry	1	2	3

OTOLARYNGOLOGY

Objective

Ability to deal with common minor ENT emergencies and refer serious problems appropriately

	ST4	ST6	ST8
Knowledge			
Anatomy of the nose, external auditory canal and pharynx	N/A	N/A	2
Presentation and complications of foreign bodies in nose, auditory canal and pharynx	N/A	N/A	2
Clinical Skills			
Examination of the ear, nose and throat	1	2	3
Removal of foreign bodies from external auditory canal and nose	1	2	3
Removal of fish bones etc. from the pharynx	1	2	3
Packing of noses - anterior and posterior	1	2	3
Treatment of epistaxis	1	2	3

DENTAL

Objective

Ability to deal with common minor dental emergencies and refer serious problems appropriately

	ST4	ST6	ST8
Clinical Skills			
Sewing bleeding sockets after extractions	1	2	3
Broken teeth - using temporary 'putty' and management of the tooth knocked out intact using milk	1	2	3
Management of dental abscesses	1	2	3

PLASTIC SURGERY

Objective

Ability to deal with common minor plastic surgical emergencies and refer serious problems appropriately. See general surgery initial stage for skin lesions; orthopaedic surgery for tendon repairs and plastic surgery for more detail on burns.

	ST4	ST6	ST8
Knowledge			
Pathophysiology of burn injury	2	3	3
Complications of burn injury	2	3	3
Clinical Skills			
Assessment and resuscitation of burn victims	2	3	3
Identification of burn victims with potential airway problems and emergency management in conjunction with anaesthetists	1	2	3
Appropriate referral and transfer to regional burns centre	1	2	3
Management of minor burns conservatively or by split skin graft.	1	2	3
Technical Skills			
Skin graft	1	2	3

NEUROSURGERY

Objective

Ability to deal with minor head injuries and to refer serious head injuries appropriately. In extreme circumstances, emergency surgical treatment of serious head injuries may be necessary. See orthopaedic surgery for spinal injuries.

	ST4	ST6	ST8
Knowledge			
Anatomy of skull, brain and meninges	3	4	4
Pathophysiology of head injury	3	4	4
Appropriate emergency investigation of head injuries	1	3	4
Indications for surgical intervention in extreme circumstances after discussion with regional neurosurgical centre	1	2	3
Clinical Skills			
Assessment and resuscitation of head injuries	2	3	4
Technical Skills			
Burr hole(s)/craniotomy	1	2	3