

The Intercollegiate Surgical Curriculum

Educating the surgeons of the future

General Surgery

From October 2013
Including Simulation
(Updated 2015 and 2016)



Contents page

| | |
|---|-----|
| Introduction | 3 |
| The Syllabus | 16 |
| Professional Behaviour & Leadership | 285 |
| The Assessment System | 317 |

*The August 2013 syllabus does not include the full range of skills required by a Vascular specialist. General Surgery trainees (appointed to an NTN before 1 January 2013) will be able to continue full training in Vascular Surgery alongside their General Surgery if they choose Vascular Surgery as their special interest. In order to accommodate this, the complete vascular section of the 2010 curriculum is appended to the 2013 General Surgery syllabus.

Trainees appointed to General Surgery in the 2013 selection process and thereafter will not have the option of following the 2010 vascular section.

This document was updated in 2015 to include changes to the Core modules and amended text to reflect the adoption of the ISCP by the Royal College of Surgeons in Ireland, and again in 2016 to include the Oncoplastic Breast Surgery TIG.

Curriculum overview

Introduction

The intercollegiate surgical curriculum provides the approved UK framework for surgical training from completion of the foundation years through to consultant level. In the Republic of Ireland it applies from the completion of Core Surgical Training through to consultant level. It achieves this through a syllabus that lays down the standards of specialty-based knowledge, clinical judgement, technical and operative skills and professional skills and behaviour, which must be acquired at each stage in order to progress. The curriculum is web based and is accessed through www.iscp.ac.uk.

The website contains the most up to date version of the curriculum for each of the ten surgical specialties, namely: Cardiothoracic Surgery; General Surgery; Neurosurgery; Oral and Maxillofacial Surgery (OMFS); Otolaryngology (ENT); Paediatric Surgery; Plastic Surgery; Trauma and Orthopaedic Surgery (T&O); Urology and Vascular Surgery. They all share many aspects of the early years of surgical training, but naturally diverge further as training in each discipline becomes more advanced. Each syllabus will emphasise the commonalities and elucidate in detail the discrete requirements for training in the different specialties.

Doctors who will become surgical trainees

After graduating from medical school doctors move onto a mandatory two-year foundation programme in clinical practice (in the UK) or a one year Internship (in the Republic of Ireland). During their final year of medical school students are encouraged to identify the area of medicine they wish to pursue into specialty training. During the Foundation programme or Internship, recently qualified doctors are under close supervision whilst gaining a wide range of clinical experience and attaining a range of defined competences. Entry into surgery is by open competition and requires applicants to understand, and provide evidence for their suitability to become members of the surgical profession.

Selection into a surgical discipline

The responsibility for setting the curriculum standards for surgery rests with the Royal Colleges of Surgeons which operate through the Joint Committee on Surgical Training (JCST) and its ten Specialty Advisory Committees (SACs) and Core Surgical Training Committee (CSTC). In the UK, each SAC has developed the person specifications for selection into its specialty and the person specification for entry to ST1/CT1 in any discipline. Postgraduate Medical Deaneries and/or Local Education and Training Boards (LETBs) and their Schools of Surgery are responsible for running training programmes, which are approved by the UK's General Medical Council (GMC), and for aiding the SACs in the recruitment and selection to all levels of pre-Certification training. In the Republic of Ireland, these roles are undertaken by the Royal College of Surgeons in Ireland (RCSI) and by Ireland's [Medical Council of Ireland](http://www.mcoi.ie) (MCoI).

The critical selection points for surgical training are at initial entry either directly into specialty training in the chosen discipline (ST1) or into a generic training period referred to as core training (CT1). Those who enter core training are then selected into the discipline of their choice after two core years and join the specialty programme at a key competency point (ST3) after which transfer from one discipline to another would be relatively unusual. Selection at both core and higher surgical training takes place via a national selection process overseen by the Deaneries/LETBs and JCST and, in the Republic of Ireland, by the RCSI.

Those who are selected into training programmes will then have to achieve agreed milestones in terms of College examinations and the Annual Review of Competence Progression (ARCP) requirements.

Guidance about the UK recruitment process, application dates and deadlines and links to national person specifications by specialty are available from the [Specialty Training](http://www.specialtytraining.com) website [here](http://www.specialtytraining.com). The RCSI provides this information for Ireland.

Educational Principles of the Curriculum

The provision of excellent care for the surgical patient, delivered safely, is at the heart of the curriculum.

The aims of the curriculum are to ensure the highest standards of surgical practice in the UK and the Republic of Ireland by delivering high quality surgical training and to provide a programme of training from the completion of the foundation years through to the completion of specialty surgical training, culminating in the award of a CCT/CESR-CP¹/CCST. The curriculum was founded on the following key principles which support the achievement of these aims:

- A common format and similar framework across all the specialties within surgery.
- Systematic progression from the end of the foundation years through to completion of surgical specialty training.
- Curriculum standards that are underpinned by robust assessment processes, both of which conform to the standards specified by the GMC/RCSI.
- Regulation of progression through training by the achievement of outcomes that are specified within the specialty curricula. These outcomes are competence-based rather than time-based.
- Delivery of the curriculum by surgeons who are appropriately qualified to deliver surgical training.
- Formulation and delivery of surgical care by surgeons working in a multidisciplinary environment.
- Collaboration with those charged with delivering health services and training at all levels.

The curriculum is broad based and blueprinted to the GMC's Good Medical Practice and RCS England's (on behalf of all four Royal Colleges in the UK and the Republic of Ireland) Good Surgical Practice frameworks to ensure that surgeons completing the training programme are more than just technical experts.

Equality and diversity are integral to the rationale of the curriculum and underpin the professional behaviour and leadership skills syllabus. The ISCP encourages a diverse surgical workforce and therefore encourages policies and practices that:

- ensure that every individual is treated with dignity and respect irrespective of their age, disability, race, religion, sex, sexual orientation or marital status, or whether they have undergone gender reassignment or are pregnant.
- promote equal opportunities and diversity in training and the development of a workplace environment in which colleagues, patients and their carers are treated fairly and are free from harassment and discrimination.

It is expected that these values will be realised through each individual hospital trust's equality and diversity management policies and procedures. This principle also underlies the Professional Behaviour and Leadership syllabus.

Who Should Use the Curriculum?

The ISCP comprises the curricula for the ten surgical specialties which are GMC-approved in the UK and MCol-approved in the Republic of Ireland. It reflects the most up to date requirements for trainees who are working towards a UK Certificate of Completion of Training (CCT), a UK Certificate of Eligibility for Specialist Registration via the Combined Programme (CESR-CP) or, in the Republic of Ireland, a Certificate of Completion of Specialist Training (CCST). Where an older version of the curriculum is superseded, trainees will be expected to transfer to the most recent version in the interests of patient safety and educational quality.

The GMC's position statement on moving to the most up to date curriculum is [here](#).

The curriculum is appropriate for trainees preparing to practice as consultant surgeons in the UK and the Republic of Ireland. It guides and supports training for a UK Certificate of Completion of Training (CCT), a UK Certificate of Eligibility for Specialist Registration via the Combined Programme (CESR-CP) or, in the Republic of Ireland, Certificate of Completion of Specialist Training (CCST) in a surgical specialty. The curriculum enables trainees to develop as generalists within their chosen surgical specialty, to be able to deliver an on-call emergency service and to deliver more specialised services to a defined level.

A CCT/CESR-CP/CCST can only be awarded to trainees who have completed a fully- or part-approved specialty training programme. Doctors applying for a full Certificate of Eligibility for Specialist Registration

(CESR) will be required to demonstrate that they meet the standards required for a CCT/CESR-CP/CCST as set out in the most up to date curriculum at the time of application.

Components of the Curriculum

The surgical curriculum has been designed around four broad areas, which are common to all the surgical specialties:

- **Syllabus** - what trainees are expected to know, and be able to do, in the various stages of their training
- **Teaching and learning** - how the content is communicated and developed, including the methods by which trainees are supervised
- **Assessment and feedback** - how the attainment of outcomes are measured/judged with formative feedback to support learning
- **Training systems and resources** - how the educational programme is organised, recorded and quality assured

In order to promote high quality and safe care of surgical patients, the curriculum specifies the parameters of knowledge, clinical skills, technical skills, professional behaviour and leadership skills that are considered necessary to ensure patient safety throughout the training process and specifically at the end of training. The curriculum therefore provides the framework for surgeons to develop their skills and judgement and a commitment to lifelong learning in line with the service they provide.

Length of training

A similar framework of stages and levels is used by all the specialties. Trainees progress through the curriculum by demonstrating competence to the required standard for the stage of training. Within this framework each specialty has defined its structure and indicative length of training. Each individual specialty syllabus provides details of how the curriculum is shaped to the stages of training.

In general terms, by the end of training, surgeons have to demonstrate:

- Theoretical and practical knowledge related to surgery in general and to their specialty practice;
- Technical and operative skills;
- Clinical skills and judgement;
- Generic professional and leadership skills;
- An understanding of the values that underpin the profession of surgery and the responsibilities that come with being a member of the profession;
- The special attributes needed to be a surgeon;
- A commitment to their on-going personal and professional development and practice using reflective practice and other educational processes;
- An understanding and respect for the multi-professional nature of healthcare and their role in it; and
- An understanding of the responsibilities of being an employee in the UK and/or Republic of Ireland health systems and/or a private practitioner.

In the final stage of training, when the trainee has attained the knowledge and skills required for the essential aspects of the curriculum in their chosen specialty, there will be the opportunity to extend his/her skills and competences in one or two specific fields. The final stage of the syllabus covers the major areas of specialised practice. The syllabuses are intended to allow the future CCT/CESR-CP/CCST holder to develop a particular area of clinical interest and expertise prior to appointment to a consultant post. Some will require further post-certification training in order to achieve the competences necessary for some of the rarer complex procedures. In some specialties, interface posts provide this training in complex areas pre-certification.

Acting up as a consultant (AUC)

'Acting up' under supervision provides final year trainees with experience to help them make the transition from trainee to consultant. A period of acting up offers trainees an opportunity to get a feel for the consultant role while still being under a level of supervision.

The post must be defined as acting up for an absent consultant, and cannot be used to fill a new locum consultant post or to fill service needs.

The trainee acting up will be carrying out a consultant's tasks but with the understanding that they will have a named supervisor at the hosting hospital and that the designated supervisor will always be available for support, including out of hours or during on-call work.

Specialty Advisory Committee (SAC) support is required and must be sought prospectively through an application to the JCST. Further GMC prospective approval is not required unless the acting up post is outside the home Deanery/LETB. If accepted the AUC will be able to count towards the award of a CCT/CESR-CP/CSD. Trainees will need to follow the JCST guidance which can be found on the [JCST website](#).

Educational Framework

The educational framework is built on three key foundations that are interlinked:

- [Stages](#) in the development of competent practice
- [Standards](#) in the areas of specialty-based knowledge, clinical judgement, technical and operative skills, and professional behaviour and leadership
- [Framework for Appraisal, Feedback and Assessment](#)

Stages of training

The modular surgical curriculum framework has been designed to define stages in the development of competent surgical practice, with each stage underpinned by explicit outcome [standards](#). This provides a means of charting progress through the various stages of surgical training in the domains of specialty-based knowledge, clinical and technical skills and professional behaviour and leadership (including judgement).

Each surgical specialty has adapted this approach to reflect their training pathway. Therefore, although the educational concept is the same for all specialties the composition of the stages will differ.

UK Only

The core (or initial stage for run-through training) reflects the early years of surgical training and the need for surgeons to gain competence in a range of knowledge and skills many of which will not be specialty-specific. A syllabus, which is common to all the surgical specialties (the common component of the syllabus, which is founded in the applied surgical sciences) has been written for this stage. This is supplemented by the topics from the appropriate surgical specialty syllabus as defined in each training programme (the specialty-specific component of the syllabus).

UK and Republic of Ireland

During the intermediate and final stages the scope of specialty practice increases with the expansion in case mix and case load and this is accompanied by the need for greater depth of knowledge and increasing skills and judgement. The content is therefore based on progression, increasing in both depth and complexity through to the completion of training.

Standards of training

Surgeons need to be able to perform in differing conditions and circumstances, respond to the unpredictable, and make decisions under pressure, frequently in the absence of all the desirable data. They use professional judgement, insight and leadership in everyday practice, working within multi-professional teams.

Their conduct is guided by professional values and standards against which they are judged. These values and standards are laid down in the General Medical Council's Good Medical Practice in the UK and the Republic of Ireland Medical Council's Guide to Professional Conduct and Ethics.

The Professional Behaviour and Leadership Skills syllabus is mapped to the [Leadership framework](#) as laid out by the Academy of Medical Royal Colleges and derived from [Good Medical Practice](#). The Professional Behaviour and Leadership skills section of the syllabus is common to all surgical specialties and is based on Good Medical Practice.

The syllabus lays down the standards of specialty-based knowledge, clinical judgement, technical and operative skills and professional skills and behaviour that must be acquired at each stage in order to progress. The syllabus comprises the following components:

- A specialty overview which describes the following:
 - Details of the specialty as it practised in the UK and the Republic of Ireland
 - The scope of practice within the specialty
 - The key topics that a trainee will cover by the end of training
 - An overview of how, in general terms, training is shaped
- Key topics that all trainees will cover by certification and will be able to manage independently, including complications. These are also referred to as essential topics.
- Index procedures that refer to some of the more commonly performed clinical interventions and operations in the specialty. They represent evidence of technical competence across the whole range of specialty procedures in supervised settings, ensuring that the required elements of specialty practice are acquired and adequately assessed. Direct Observations of Procedural Skills (DOPS) and Procedure-based Assessments (PBAs) assess trainees carrying out index procedures (whole procedures or specific sections) to evidence learning.
- The stages of training, which comprise a number of topics to be completed during a notional period of training. Within each stage there is the syllabus content which contains the specialty topics that must be covered. Each of these topics includes one or more learning objectives and the level of performance / competence to be achieved at completion in the domains of:
 - Specialty-based knowledge
 - Clinical skills and judgement
 - Technical and operative skills

Standards for depth of knowledge during early years surgical training (UK only)

In the early years of training, the appropriate depth and level of knowledge required can be found in exemplar texts tabulated below. We expect trainees to gain knowledge from these texts in the context of surgical practice defined in the core surgical component of the curriculum above.

The curriculum requires a professional approach from surgical trainees who will be expected to have a deep understanding of the subjects, to the minimum standard laid out below. It is expected that trainees will read beyond the texts below and will be able to make critical use, where appropriate of original literature and peer scrutinised review articles in the related scientific and clinical literature such that they can aspire to an excellent standard in surgical practice.

The texts are not recommended as the sole source within their subject matter and there are alternative textbooks and web information that may better suit an individual's learning style. Over time it will be important for associated curriculum management systems to provide an expanded and critically reviewed list of supporting educational material.

| Topic | Possible textbooks or other educational sources |
|------------|--|
| Anatomy | Last's Anatomy: Regional and Applied (MRCs Study Guides) by R.J. Last and Chummy Sinnatamby Netter's Atlas of Human Anatomy 4th Edition Saunders-Elsevier ISBN-13-978-1-4160-3385-1 |
| Physiology | Ganong's Review of Medical Physiology, 23rd Edition (Lange Basic Science) |

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|---|--|
| Pathology | Robbins Basic Pathology by Vinay Kumar MBBS MD FRCPATH, Abul K. Abbas MBBS, Nelson Fausto MD, and Richard Mitchell MD PhD |
| Pharmacology | Principles and Practice of Surgery by O. James Garden MB ChB MD FRCS(Glasgow) FRCS(Edinburgh) FRCP (Edinburgh) FRACS(Hon) FRCSC(Hon) Professor, Andrew W. Bradbury BSc MBChB MD MBA FRCSEd Professor, John L. R. Forsythe MD FRCS(Ed) FRCS, and Rowan W Parks Bailey and Love's Short Practice of Surgery 25th Edition by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor) |
| Microbiology | Principles and Practice of Surgery by O. James Garden MB ChB MD FRCS(Glasgow) FRCS(Edinburgh) FRCP (Edinburgh) FRACS(Hon) FRCSC(Hon) Professor Bailey and Love's Short Practice of Surgery 25th Edition by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor) |
| Radiology | Principles and Practice of Surgery by O. James Garden MB ChB MD FRCS(Glasgow) FRCS(Edinburgh) FRCP (Edinburgh) FRACS(Hon) FRCSC(Hon) Professor, Andrew W. Bradbury BSc MBChB MD MBA FRCSEd Professor, John L. R. Forsythe MD FRCS(Ed) FRCS, and Rowan W Parks Grainger & Allison's Diagnostic Radiology, 5th Edition . Andy Adam (Editor), Adrian Dixon (Editor), Ronald Grainger (Editor), David Allison (Editor) Bailey and Love's Short Practice of Surgery 25th Edition by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor) |
| Common surgical conditions | Principles and Practice of Surgery by O. James Garden MB ChB MD FRCS(Glasgow) FRCS(Edinburgh) FRCP (Edinburgh) FRACS(Hon) FRCSC(Hon) Professor, Andrew W. Bradbury BSc MBChB MD MBA FRCSEd Professor, John L. R. Forsythe MD FRCS(Ed) FRCS, and Rowan W Parks Bailey and Love's Short Practice of Surgery 25th Edition by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor) |
| Surgical skills | Basic surgical skills course and curriculum |
| Peri-operative care including critical care | ATLS@ course CCrISP course Principles and Practice of Surgery by O. James Garden MB ChB MD FRCS(Glasgow) FRCS(Edinburgh) FRCP (Edinburgh) FRACS(Hon) FRCSC(Hon) Professor, Andrew W. Bradbury BSc MBChB MD MBA FRCSEd Professor, John L. R. Forsythe MD FRCS(Ed) FRCS, and Rowan W Parks Bailey and Love's Short Practice of Surgery 25th Edition by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor) |
| Surgical care of children | Principles and Practice of Surgery by O. James Garden MB ChB MD FRCS(Glasgow) FRCS(Edinburgh) FRCP (Edinburgh) FRACS(Hon) FRCSC(Hon) Professor, Andrew W. Bradbury BSc MBChB MD MBA FRCSEd Professor, John L. R. Forsythe MD FRCS(Ed) FRCS, and Rowan W Parks |

| | |
|-----------------------|--|
| | <p>Bailey and Love's Short Practice of Surgery 25th Edition by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor)</p> <p>Jones Clinical Paediatric Surgery Diagnosis and Management Editors JM Hutson, M O'Brien, AA Woodward, SW Beasley 6th Edition 2008 Melbourne Blackwell</p> <p>Paediatric Surgery: Essentials of Paediatric urology by D Thomas, A Rickwood, P Duffy</p> |
| Care of the dying | <p>Principles and Practice of Surgery by O. James Garden MB ChB MD FRCS(Glasgow) FRCS(Edinburgh) FRCP (Edinburgh) FRACS(Hon) FRCSC(Hon) Professor, Andrew W. Bradbury BSc MBChB MD MBA FRCSEd Professor, John L. R. Forsythe MD FRCS(Ed) FRCS, and Rowan W Parks</p> <p>Bailey and Love's Short Practice of Surgery 25th Edition by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor)</p> |
| Organ transplantation | <p>Principles and Practice of Surgery by O. James Garden MB ChB MD FRCS(Glasgow) FRCS(Edinburgh) FRCP (Edinburgh) FRACS(Hon) FRCSC(Hon) Professor, Andrew W. Bradbury BSc MBChB MD MBA FRCSEd Professor, John L. R. Forsythe MD FRCS(Ed) FRCS, and Rowan W Parks</p> <p>Bailey and Love's Short Practice of Surgery 25th Edition by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor)</p> |

In addition to these standard texts, sample MRCS MCQ examination questions are also available at www.intercollegiatemrcs.org.uk, which will demonstrate the level of knowledge required to be able to successfully pass the MRCS examination.

Standards for depth of knowledge during intermediate and final years surgical training

In the intermediate and final stages of surgical training the following methodology is used to define the relevant depth of knowledge required of the surgical trainee. Each topic within a stage has a competence level ascribed to it for knowledge ranging from 1 to 4 which indicates the depth of knowledge required:

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

Standards for clinical and technical skills

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

1. Has observed

Exit descriptor; at this level the trainee:

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

2. Can do with assistance

Exit descriptor; at this level the trainee:

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

3. Can do whole but may need assistance

Exit descriptor; at this level the trainee:

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

4. Competent to do without assistance, including complications

Exit descriptor, at this level the trainee:

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

The explicit standards form the basis for:

- Specifying the syllabus content;
- Organising workplace (on-the-job) training in terms of appropriate case mix and case load;
- Providing the basis for identifying relevant teaching and learning opportunities that are needed to support trainees' development at each particular stage of progress; and
- Informing competence-based assessment to provide evidence of what trainees know and can do.

Standards for the professional skills and leadership syllabus

The methodology used to define the standards for this component of the syllabus is through a series of descriptors that indicate the sorts of activities that trainees should be able to successfully undertake at two specific time points, namely the end of "early years" training (i.e. entry into ST3, or ST4 in Neurosurgery) and the end of surgical training (i.e. certification).

The Framework for Appraisal, Feedback and Assessment

The curriculum is consistent with the four domains of Good Medical Practice:

- Knowledge, skills and performance
- Safety and quality
- Communication, partnership and team-working
- Maintaining trust

The knowledge, skills and performance aspects are primarily found within the specialty-specific syllabus. All domains are reflected within the professional behaviour and leadership syllabus, which also reflect the Academy's common competence and leadership competence frameworks.

The purpose and structure of the training programme

The curriculum is competence-based. It focuses on the trainee's ability to demonstrate the knowledge, skills and professional behaviours that they have acquired in their training (specified in the syllabus) through observable behaviours. Since it is competence-based, it is not time-defined and accordingly it allows these competences to be acquired in different time frames according to variables such as the structure of the programme and the ability of the trainee. Any time points used are therefore merely indicative.

There are certain milestones or competence points which allow trainees to benchmark their progress:

- Entry to surgical training - CT1 (or ST1 for those specialties or localities with run-through programmes)
- Entry to entirely specialised training - ST3*
- Exit at certification

*** A critical competence point is ST3 at which point, in practice, trainees will make a clear commitment to one of the ten SAC-defined disciplines of surgery.**

UK Only

Within the early years of training (defined as the period prior to entry into ST3), much of the content is common across all the surgical specialties. During this period, trainees will acquire the competences that are common to all surgical trainees (defined as common competences) together with a limited range of competences that are relevant to their chosen surgical specialty (defined as specialty-specific competences).

- Those who have made a definitive choice of their desired surgical specialty, and who have been able to enter a "run-through" training programme, will be able to focus upon achieving the common competences and the specialty-specific competences for their chosen specialty.
- Those who have not yet made a definitive choice of their desired surgical specialty will obtain a range of extra competences in a variety of surgical specialties, while at the same time sampling those specialties, before focussing on the chosen specialty prior to entry into ST3.

For those not in run-through programmes, within the early years, training is not committed to a specific surgical specialty and trainees can enter any of the relevant specialties at ST3 level provided they a) meet their educational milestones in the common surgical component of the curriculum and b) satisfy all the specialty requirements for entry in the specialty of their choice. The different training schemes offered by the Postgraduate Deaneries and Local Education and Training Boards (LETBs) meet different educational needs and permit trainees to make earlier or later final career choices based on ability and preference.

It is essential that trainees achieve both common and specialty-specific competence to be eligible to compete at the ST3 specialty entry competence level. In the early years (initial stage), the common core component reflects the level of competence that all surgeons must demonstrate, while specialty-specific competence reflects the early competences relevant to an individual specialty.

From August 2013, the MRCS examination became a formal exit requirement from Core Surgical Training. It is also a mandatory requirement to enter higher specialty training in any discipline, irrespective of candidates reaching all other educational requirements. Otolaryngology trainees are required to pass the MRCS(ENT) examination or the MRCS and the DO-HNS examination.

UK and Republic of Ireland

Following entry into higher specialty training (which for those who have undergone training in core programmes will follow on from a second selection process), the trainee will typically undergo a period of training in the broad specialty and at the higher levels begin to develop an area of special interest, to allow some degree of specialisation in his or her subsequent career.

Early Years Surgical Training – UK Only

The purposes of early years (i.e. the initial stage) training are:-

1. To provide a broad based initial training in surgery with attainment of knowledge, skills and professional behaviours relevant to the practice of surgery in any specialist surgical discipline. This is defined within the common component of the syllabus (which is also the syllabus of the MRCS).
2. In addition it will provide early specialty training such that trainees can demonstrate that they have the knowledge, skills and professional behaviours to enter higher specialty training in a surgical specialty. The specialty element in the early years is not tested in the MRCS but through workplace-based assessments (WBAs) in the first instance.

Additionally trainees will be continuously assessed on the contents of the common component and their specialty specific slots through WBAs and structured reports from Assigned Educational Supervisors (AES) which in turn contribute to the Annual Review of Competence Progression (ARCP); this includes the level of competence expected of all doctors including surgeons to meet their obligations under Good Medical Practice (GMP) in order to remain licensed to practise.

Trainees who gain entry to higher specialty training despite some remediable and identified gaps in their specialty specific curriculum competences must ensure that these are dealt with expeditiously during ST3. All these gaps must be addressed by the time of a ST3 ARCP as part of their overall permission to progress to ST4. They must be specifically addressed through local learning agreements with educational supervisors. Trainees with identified gaps must be accountable to the Training Programme Directors (TPDs) whom in turn must address this as part of their report to the ARCP process.

Intermediate and Final Years Specialty Training – UK and Republic of Ireland

The purposes of the intermediate and final years training are:

1. To provide higher specialty training in the specialty with attainment of knowledge, skills and professional behaviours relevant to the practice in the specialty. This is defined within the specialty-specific component of the early years syllabus and the intermediate and final stages of the syllabus (and is also the syllabus of the FRCS).
2. To develop competence to manage patients presenting either acutely or electively with a range of symptoms and conditions as specified in the syllabus (and the syllabus of the FRCS).
3. To develop competence to manage an additional range of elective and emergency conditions by virtue of appropriate training and assessment opportunities obtained during training as specified by special interest or sub-specialty components of the final stage syllabus. This is tested either by the FRCS and/or by WBAs.
4. To acquire professional competences as specified in the syllabus and in the General Medical Council's Guide to Professional Conduct and Ethics.

The Training Pathway

From the trainee's perspective, he or she will be able to undertake surgical training via differing routes depending on which training scheme they choose or are selected for.

1. Run-through training (UK only)

For those trainees who are certain of their specialty choice, and who choose to enter "run-through" training, competitive entry into ST1 will be possible in their chosen specialty to certification, where this is offered by the specialty. As well as specialty-specific competences, those on this route will still need to attain the level of competence common to all surgeons before entering ST3 (ST4 in Neurosurgery) and this will be assessed through the MRCS, WBAs and the ARCP. This route is currently available in Neurosurgery (and in some Deaneries/LETBs Cardiothoracic Surgery, Oral and Maxillofacial Surgery and Trauma and Orthopaedic Surgery).

2. Uncoupled training

This route is currently available in General Surgery, Cardiothoracic Surgery, Oral and Maxillofacial Surgery, Otolaryngology, Paediatric Surgery, Plastic Surgery, Trauma and Orthopaedic Surgery, Urology and Vascular Surgery.

For those trainees who are either uncertain of their chosen specialty, who are unable to gain entry to run-through training, or who choose a specialty that does not offer the run-through route, a period of “Core” surgical training will be necessary. This period of training is designated CT1 and CT2 in the UK. During this period trainees will attain the common surgical knowledge and skills and generic professional behaviours, while sampling a number of surgical specialties. In addition to attaining common competences, trainees will need to complete their speciality specific competences to be eligible to enter ST3 in their chosen specialty. They will then seek to enter specialty training at the ST3 level by competitive entry. Open competition will test trainees against SAC defined competences for ST3 entry.

This model has a number of possible variants. Core training might sample several specialties, without any particular specialty focus. In such cases some specialty top up training may be needed later on in order to reach specialty entry at ST3 level. Another variant would organise core training along a theme that supports progression to a specific specialty. In these situations many trainees may pass straight from CT2 to ST3 in their chosen discipline if selected. In practice, core surgical training will run over an indicative timescale of 2 years (CT1-2).

3. Academic training

In the UK some early years’ trainees may wish to pursue an academic surgical career and will devote a significant proportion of their time to additional academic pursuits including research and teaching. For the majority this will lead (later in specialised training) to a period of time in dedicated research, resulting in the award of a higher degree in a scientific area related to their chosen specialty. For others who wish to revert to full time clinical training, this will also be possible, providing that the relevant clinical competences are achieved.

General information on UK academic pathways can be found using the following link:
<http://specialtytraining.hee.nhs.uk/news/the-gold-guide/>

The JCST is keen to support academic careers within surgery and has ensured that the surgical curriculum is flexible enough to accommodate an academic pathway. The curriculum specifies that each individual trainee’s training is planned and recorded through the learning agreement.

In England, Academic Clinical Fellows (ACFs) are generally expected to achieve the same level of clinical competence as other surgical trainees within the same timeframe. In order to progress through training pathways the ACF, in addition to demonstrating competence in clinical aspects, will generally be required to have obtained a funded Research Training Fellowship in order to undertake a PhD or MD, which they will complete during an out of programme period. Some trainees during their period of full-time research may want to carry out some clinics or on call, if they and their academic supervisor feel that it is in their best interests. On successful completion of a PhD or MD the ACF will either return to their clinical programme, apply for an Academic Clinical Lecturer (ACL) or Clinician Scientist post.

Arrangements for academic training differ in detail in the devolved nations of the UK and in the Republic of Ireland. For Wales, further information can be obtained from <http://www.walesdeanery.org/index.php/en/wcat.html>. For Scotland, information can be obtained at <http://www.nes.scot.nhs.uk/>, and for Northern Ireland at <http://www.nimtda.gov.uk/>.

In the Republic of Ireland trainees with an interest in academic surgery may choose to spend time out of training in a dedicated research post.

Academic trainees will need to complete all the essential elements of their specialty syllabus satisfactorily in order to be awarded a CCT, CESR-CP or CCST. It is acknowledged that Clinical Academics may take somewhat longer in training to achieve competence at CCT/CESR-CP level than trainees taking a clinical pathway; however they will be supported fully and treated as individuals with their personal progress being matched to their learning agreement.

Moving from one discipline of surgery to another

In the early years it is possible that a trainee who has started to develop a portfolio consistent with a particular specialist discipline might wish to move to another. One of the strengths of the flexible early years programme is that it will be possible, depending on the local circumstances, to make such changes with an identification of suitable educational competences that may be transferred. This is strictly conditional on a trainee achieving the educational milestones so far agreed for them. Moving from one discipline to another because of the need to remediate in the original discipline would not normally be permitted. All common requirements, for example, possession of the MRCS, would be transferable. Those leaving ENT however could not use the DO-HNS examination as equivalent to the MRCS examination and those wishing to enter ENT (and already having the MRCS) would be required to sit the Part 2 DO-HNS examination.

In order to be eligible to move from one discipline to another the following conditions therefore apply:

1. Achieve a satisfactory outcome in ARCPs up to that point including all relevant WBAs.
2. Fulfil the minimum period in the new specialty of choice in order to progress to ST3 in that discipline (ST4 in Neurosurgery).
3. Obtain the new position through open competition in the annual selection round.
4. Pass the MRCS, MRCS(ENT) (or DO-HNS in addition to the MRCS) examination

The process in practice would be subject to local negotiations between the Postgraduate Dean or appointed nominee in the Republic of Ireland, designated training supervisors and the trainee making the request. If the decision to change theme in core programmes occurs early the effective increase in training time may be minimal. If the decision occurs later or during run-through, more time spent in the early years is almost inevitable. The progression to ST3 is in essence competence rather than time dependent. Those spending longer having made a change may be subject to limitations on any subsequent period required for remediation, although this ultimately would be a Deanery/LETB decision.

Completion of training

Successful completion of the programme in the UK will result in a Certificate of Completion of Training (CCT) or a Certificate of Eligibility for Specialist Registration via the Combined Programme (CESR-CP) and, in Ireland, a Certificate of Completion of Specialist Training (CCST), and placement on the Specialist Register of the GMC or the Medical Council of Ireland (MCoI). This will indicate that the surgeon has reached the curriculum standards of competence to practice as a consultant surgeon in the UK or the Republic of Ireland. These requirements are set by the SACs and the Royal Colleges of Surgeons, are approved by the GMC in the UK or MCoI in Ireland, and translate into the ability to manage a significant proportion of the elective work within the specialty and to undertake the primary management of emergencies. It is anticipated that where additional, well-recognised specialist skills are required by the service, these will be gained by the completion of additional modules before the completion of training and the award of the specialty certificate.

Doctors who wish to join the GMC's Specialist Register and have not followed a full or part of a training programme approved by the GMC in the UK leading to a CCT/CESR-CP but who may have gained the same level of skills and knowledge as CCT/CESR-CP holders can apply for a Certificate of Eligibility for Specialist Registration (CESR).

Once on the Specialist Register, all surgeons will be expected to maintain their professional development in line with Good Medical Practice for the purpose of revalidation in the UK, and in accordance with the Professional Competence Scheme (PCS) in the Republic of Ireland.

The Syllabus

Each syllabus details the learning content and outcomes to be achieved at each stage of training.

Which syllabus should I choose?

If you are a trainee in a generic or themed core programme (**CT1-2**): Click on the **Core Surgical Training syllabus**

If you are a trainee in the early years of a run-through programme (**ST1-2**): Click on the relevant **specialty syllabus** and then on the **Initial Stage** of training. Run-through programmes include:

- Cardiothoracic Surgery (in some deaneries)
- Neurosurgery

If you are a trainee in Higher Surgical Training (**ST3 or above**): Click on the relevant **specialty syllabus** and then on the stage of training

Which version?

The syllabuses are from time to time updated in line with changes in the practice or structure of training. They indicate the date of GMC approval and all trainees should use the most up to date version. When an older version of the curriculum is superseded, trainees will be expected to transfer to the most recent version in the interests of patient safety and educational quality. All but the latest version of the curriculum will be decommissioned by 1st January 2016. Trainees will be able to view documents that map new versions to previous ones.

Related downloads

- [Quick Guide to the early years syllabus](#) [PDF:190Kb]
- [GMC position statement - Moving to the Current Curriculum November 2012](#)

The syllabus



1 Overview and Objectives of the General Surgery Curriculum

- Trainees in general surgery will undergo Core Surgical Training (CT1 and CT2) followed by a period of 6 indicative years of specialty training (ST3 to ST8).
- The aim is to train general surgeons who will be able to work independently to the standard of a consultant in elective and emergency general surgery and who have started developing an interest in one or more of the components of general surgery as defined in the curriculum.
- In order to gain the CCT in general surgery all trainees will gain knowledge, clinical and technical skills to the competency levels defined for ST8 in elective and emergency general surgery. They will all gain knowledge, clinical and technical skills to the competency levels defined for ST6 in gastrointestinal surgery (upper and lower). They will all gain knowledge, clinical and technical skills to the competency levels defined for ST4 in breast, transplant, vascular and endocrine surgery. In addition, knowledge, clinical and technical skills are defined for ST8 in the special interest components of general surgery.
- During ST3 and ST4 all trainees will complete one year in gastrointestinal surgery (mixture of upper and lower), six months in vascular surgery and a further six months in either breast, transplant or gastrointestinal surgery.
- During ST5 and ST6 all trainees will complete one year in gastrointestinal surgery (either upper, lower or a mixture) and one year in their special interest.
- During ST7 and ST8 trainees will consolidate their training opting, where possible to further develop their special interest.
- Emergency general surgery training will continue for all trainees throughout the six years. Working within EWTR, rotas in emergency and elective general surgery should aim to give trainees the opportunity to learn continuity of care, judgement, decision making, prioritisation and to see how symptoms, signs and associated pathology develop over time.
- Trainees may have the opportunity to gain competencies to ST8 level in the general surgery of childhood or in endocrine, advanced trauma or remote and rural surgery.
- Assessment will be monitored by the Annual Review of Competence Progression (ARCP) system and carried out by Workplace Based Assessment and by the FRCS examination.
- The award of a CCT by the GMC indicates successful completion of a training programme but it is recognised and expected that all doctors continue to develop and gain new skills throughout their careers.

2 Definitions

- All training durations referred to throughout the syllabus are indicative. The ARCP process allows for adjustments to be made should this be necessary.
- Throughout the curriculum the term “manage” indicates competence in clinical assessment, diagnosis, investigation and treatment (both operative and non-operative), recognising when referral to more specialised or experienced surgeons is required for definitive treatment.
- All competencies defined in the syllabus are the minimum required.
- Index procedures have previously been defined as operations which are either common or represent important areas of technical expertise. They are used in logbook analysis to assess experience and in Procedure Based Assessments to assess competence.

3 The Specialty of General Surgery

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

- The full remit of general surgery includes surgical conditions of the GI tract from oesophagus to anus, the breast, transplantation (kidney, pancreas, liver), trauma (abdomen, thorax and general management), endocrine surgery, hernia, some skin conditions, initial assessment of patients with peripheral vascular disease and the general surgery of childhood.
- Training in these areas is set within the context of learning general professional skills, NHS management and governance structures and gaining a grounding in academic surgery.
- The central definition of a general surgeon is a surgeon who is competent to independently manage an unselected emergency general surgical take and who has developed an interest in one of the areas within general surgery
- Emergency General Surgery typically comprises 50% of total general surgery workload and as such is the largest single component of the specialty. Those providing Emergency General Surgery need to be trained, to be supported and to have regular and sufficiently frequent experience in the broad range of cases presenting as emergencies to maintain competence in their management.
- During recent years there has been a trend towards the development of special interests within general surgery, driven by improvements in clinical management, patient and professional expectations and NHS service provision.
- The main areas of special interest to have developed are:
 - Upper Gastrointestinal Surgery (including specialised oesophago-gastric and hepato-pancreato-biliary surgery)
 - Colorectal Surgery
 - Oncoplastic Breast Surgery
 - Transplant Surgery (Renal, Hepatic and Pancreatic)
- Other areas of special interest, generally practiced alongside one of the above are:
 - Endocrine Surgery
 - General Surgery of Childhood
- Two other areas within general surgery with specific training and service requirements are:
 - Advanced Trauma Surgery (for Military Surgery and trauma centres)
 - Remote and Rural Surgery
- The curriculum emphasises the need for all trainees to train in Emergency General Surgery to the same level.
- The curriculum also enables trainees to develop an interest in one or more of the components of general surgery in discussion and agreement with their Training Programme Director

4 The configuration and delivery of General Surgery services

- The majority of General Hospitals serve populations of 350,000 although some hospitals serve smaller populations (200 – 250,000) which are more thinly spread geographically.
- Centres which provide highly specialised services for low volume, technically complex procedures usually cover populations of 500,000 or more with treatment being provided by Multi-Disciplinary Teams which have developed special expertise in these conditions.
- All hospitals providing Accident and Emergency services have a full general surgical emergency and elective service. In smaller hospitals the service may be supported by neighbouring larger units with networking arrangements.
- Some general surgeons (e.g. breast, transplant) hold posts in which they are not responsible for general surgical emergencies but, on appointment, these surgeons will have had full competencies in Emergency General Surgery.
- Vascular emergencies are dealt with by trained vascular surgeons, usually within a regional clinical network, but may need initial assessment by a general surgeon.

5 The medical staff delivering general surgical services

- These comprise Consultants, Trainees (Specialty Trainees, Core Surgical Trainees, Foundation Trainees) and Non-Consultant Career Grades (SAS 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 (Clinical Supervisor, Educational Supervisor etc).
- 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-consultant career grade post. 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.

6 Components of General Surgery

6.1 Elective General Surgery

- A variety of conditions are managed within elective general surgery:
 - All the various types of hernia
 - Certain skin and subcutaneous conditions
 - Surgical support for the management of haematopoietic and reticulo-endothelial conditions
- Elective General Surgery also includes the clinical assessment, diagnosis, investigation and treatment of a wide variety of conditions, as detailed in the curriculum, which are referred to general surgical out patient clinics. It is recognised that referral of some of these patients to more specialised or experienced surgeons is sometimes appropriate.

6.2 Emergency General Surgery

- Patients presenting with acute and elective problems are fundamentally different and often require different approaches particularly with regard to investigation, decision making, optimisation of clinical condition and choice of operation. Emergency General Surgery is not simply elective surgery performed out of hours.
- All general surgeons need to be competent to manage an unselected emergency take at the end of training. In the context of the curriculum, “manage” indicates being responsible for the patient’s care from start to finish, including operative intervention, recognising when referral to more specialised or experienced surgeons is appropriate.
- Gastrointestinal conditions comprise the largest component of Emergency General Surgery.
- Emergency General Surgery also involves a significant caseload of conditions not directly related to adult gastrointestinal practice. For example paediatrics, hernia surgery, some urological emergencies, superficial sepsis and trauma.
- Surgeons may be involved in the management of relatively rare occurrences such as major incidents, stabbings, gunshot wounds and multiple trauma. This necessitates an understanding of the principles of care for the emergency patient.
- Training in Emergency General Surgery should take place throughout the programme for all trainees and take place in blocks of a week or longer to ensure attainment of non-operative and operative skills as well as decision making skills which come with continuity of care.
- For further information on Emergency General Surgery please see the Association of Surgeons of Great Britain and Ireland Consensus Statement at <http://www.asgbi.org.uk/download.cfm?docid=3CBDAE30-8B61-492B-AABAE209BB5780AD>

6.3 Upper Gastrointestinal Surgery

- Upper Gastrointestinal Surgery includes Oesophago-Gastric (O-G) and Hepato-Pancreato-Biliary disease (HPB). This special interest involves treatment of patients with benign and malignant conditions. This includes surgery for gastro-oesophageal reflux, obesity, gallstones, complex benign biliary and pancreatic conditions, disorders of the spleen as well as for malignancies of the oesophagus, stomach, liver, biliary tree and pancreas.
- 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 is based on multidisciplinary teams working in Cancer Networks with specialist surgeons working in Cancer Centres
- Within each Network there are one or two Centres providing a specialist service for complex benign and malignant oesophago-gastric and hepato-pancreato-biliary conditions.
- For further information about both oesophagogastric and hepatopancreaticobiliary surgery please see the Association of Upper Gastrointestinal Surgery website at www.augis.org

6.4 Colorectal Surgery

- Colorectal surgery includes diseases of the small bowel, colon, rectum and anal canal. The work involves close collaboration with medical gastroenterologists, radiologists, oncologists and physiological measurement staff.
- A significant part of the workload is accounted for by the large numbers of patients suffering from large bowel cancer.
- For this reason most medium sized district general hospitals have several surgeons with a colorectal special interest.

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

6.5 Oncoplastic Breast Surgery

- Breast surgeons deal with both benign and malignant breast conditions in women and to a lesser extent men and the majority of the workload is accounted for by the management of breast cancer (screen detected and symptomatic).
- Breast surgeons have a heavy outpatient workload due to the high volume of breast clinic referrals and breast cancer follow up.
- Surgery remains the mainstay of breast cancer treatment and most medium sized district general hospitals require several breast surgeons most of whom now exclusively manage breast conditions.
- The breast surgeon is a key member of the diagnostic, oncoplastic and oncology multidisciplinary teams, working with plastic surgeons, radiologists, pathologists, oncologists and specialist nurses.
- Modern specialist breast surgeons/units now offer an oncoplastic philosophy of care, combining the best cancer surgery with the best aesthetic techniques. The majority of oncoplastic breast surgery is performed by general surgeons trained in oncoplastic breast surgery or in collaboration with local plastic surgeons (the oncoplastic MDT).
- The small number of breast emergencies are increasingly managed by the breast and radiology teams rather than the general surgery on-call team.
- For further information please see Association of Breast Surgery of GB and Ireland: <http://www.associationofbreastsurgery.org.uk/>
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6.6 Transplant Surgery

- Kidney transplant surgeons are primarily responsible for deceased donor and living donor kidney transplantation, and vascular and peritoneal access for dialysis.
- They will also care for transplant related 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.
- 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, while others will be hepato-pancreato-biliary surgeons who also undertake liver transplant. A small number will have a major commitment to paediatric transplantation. Development in these areas will be after the award of a CCT.
- By CCT, trainees with an interest in transplant surgery will be competent to manage patients in kidney retrieval and transplant surgery. They will also gain some skills in liver and pancreas transplantation but these will not equate to full independent competence.
- For further information about transplant surgery the reader is referred to the British Transplantation Society at www.bts.org.uk

6.7 Endocrine surgery

- Endocrine Surgery involves the investigation and treatment, with endocrinologists, of adult and paediatric patients with benign and malignant disease of the thyroid, parathyroid and adrenal glands, and neuro-endocrine tumours of the pancreas and gastrointestinal tract.
- Malignant disease of the thyroid and parathyroid glands is managed in conjunction with endocrinologists, pathologists, radiologists and oncologists as members of a Site Specific Thyroid Cancer MDT.
- The provision of thyroid and parathyroid surgery is by those who have developed an appropriate interest within the curriculum. Such surgeons will also have another special interest within general surgery in addition to completing the curriculum requirements for general elective and emergency surgery.
- Some centres require surgeons with expertise in the recognition, assessment and management of adrenal and neuro-endocrine tumours but this surgery is not within the remit of all endocrine surgeons. Surgery for the rare endocrine conditions including medullary thyroid cancer is increasingly being performed in fewer centres. Local expertise and service configuration in individual centres and cancer networks should determine individual practice.

- A very small number of trainees may want to develop such skills across the full breadth of endocrine surgery, alongside emergency and elective general surgery. Careful advice should be sought from the TPD before this route is taken.
- 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.baets.org.uk

6.8 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 for groin conditions such as inguinal hernia and for the most part, emergency work comprises common emergency abdominal conditions such as appendicitis and urological conditions e.g. torsion of the testicle.
- Conditions of greater complexity are the preserve of Specialist Paediatric Surgeons and it is inappropriate to train general surgeons in this area.
- Trainees wanting to develop an interest in the General Surgery of Childhood will do so alongside one of the other special interest areas of general surgery.

6.9 Advanced Trauma / Military Surgery

- Trauma centres have a number of surgeons whose role is to manage patients with poly-trauma from initial presentation to rehabilitation and followup.
- These surgeons need a wide range of skills which would not normally be gained outside trauma centres.
- The military general surgeon provides the non-orthopaedic 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 non-orthopaedic 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.

6.10 Remote and Rural Surgery

- A small number of surgeons practise in remote areas such as the Scottish Highlands and 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 special interest 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.

6.11 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, acquire a high level of competency in research and teaching. Some will choose to do this through the Academic Clinical Fellow and Academic Clinical Lecturer routes.
- 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.surgicalresearch.org.uk/PDFs/MMC%20UKCRC%20Draft%20Document.pdf

7 Principles of the Curriculum

- The general surgery curriculum is designed to meet the needs of the NHS and to match how the NHS works in large and small hospitals. It sets defined competence levels so that patient care and safety are ensured.
- The training pathway is designed to provide logical break points for those leaving or rejoining training below CCT level.
- It is recognised throughout the curriculum that competence in highly specialised, low volume procedures may not be completed by the end of training although the trainee will have the basic competencies to develop these post-CCT.
- All surgeons with a CCT in General Surgery will be:
 - able to manage patients admitted through a general surgical emergency take
 - able to manage patients with elective general surgical conditions
 - developing an interest in one of the components of general surgery – upper gastrointestinal, colorectal, oncological breast or transplant
 - given the option during their training of gaining competencies in endocrine surgery (thyroid, parathyroid, adrenal or neuro-endocrine tumours), general surgery of childhood, advanced trauma surgery (for trauma centres or the Military) or remote and rural surgery
- The curriculum defines the level of knowledge, clinical skill and technical skill to be attained during and by the end of training for each of these areas.
- The curriculum includes the competencies described in the Core Surgical Training curriculum.
- The curriculum also includes professional competencies as specified in the syllabus and derived from the Good Medical Practice documents of the General Medical Council of the UK.
- The curriculum is intended to produce a competent general surgeon with the skills, knowledge and professional judgment to fulfil the requirements of a consultant working in the current NHS. With this background, the surgeon will have the range and levels of expertise to change in response to demands of the service, personal aspirations, career developments, the needs of patients and the developments in the speciality
- Following appointment as a consultant, some will wish to maintain a broad portfolio of practice and emergency care; others may seek to practice exclusively in a special interest. 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.

8 Stages of the Curriculum

- Training in General Surgery is divided into Core and Specialty Training, entry into each of which is by national competitive selection.

8.1 Core Surgical Training

- CT1 and CT2 (Initial Stage)
Two indicative years within which trainees complete one year in General Surgery and gain experience in at least two other surgical specialties.
- By the end of CT2 the trainee will have gained the knowledge, clinical and technical skills to complete Basic Surgical Training, to pass the MRCS examination and to meet the essential criteria for national selection into General Surgery specialty training

8.2 Specialty Training (ST3-8)

- This will comprise six indicative years sub-divided into three stages of two years each:
 - ST3 and ST4
 - ST5 and ST6
 - ST7 and ST8
- The curriculum defines competences to be reached for each stage so that by the end of ST8 trainees will have achieved the skills necessary to pass the FRCS examination and to meet the requirements for CCT.

9 Structure of Training

- Training in Emergency General Surgery takes place throughout each stage of Specialty Training for all trainees.
- Trainees should be allocated to regular blocks of time during which their duties will be exclusively or primarily related to the care of emergency admissions. These periods should be no shorter than one week and should occur throughout training for all trainees. The aim is for trainees to learn the high level skills needed for emergency general surgery including continuity of care, prioritisation, judgement and decision making.

9.1 ST3 and ST4

- During the Intermediate stage trainees will learn the basic concepts and start to develop decision making, clinical and technical skills in Elective General Surgery, Emergency General Surgery, Upper Gastrointestinal Surgery, Colorectal Surgery, Vascular Surgery, Breast Surgery, Transplant Surgery and Endocrine Surgery.
- Training in Emergency General Surgery will be undertaken throughout this stage
- Special interest placements, each of six months duration, will include Upper Gastrointestinal Surgery, Colorectal Surgery and Vascular Surgery for all trainees.
- Depending on career aspirations, trainees will be placed in a further six month post in either Upper Gastrointestinal Surgery, Colorectal Surgery, Breast Surgery or Transplant Surgery during this stage. Trainees who do not complete a post in Breast or Transplant Surgery must gain the knowledge and skills in these areas through formal teaching and attendance at clinics and operating lists by arrangement.
- Towards the end of ST4, trainees, in discussion with their Training Programme Director, may choose which of the components (Upper Gastrointestinal, Colorectal, Breast or Transplant) of general surgery to develop into a special interest, alongside their elective and emergency general surgery training. They may also consider whether to gain competencies in one of the other areas of general surgery (endocrine, general surgery of childhood, advanced trauma, remote and rural).
- By the end of ST4 the trainee will have the knowledge, clinical and technical skills in Elective General Surgery, Emergency General Surgery, Upper Gastrointestinal Surgery, Colorectal Surgery, Vascular Surgery, Breast Surgery, Transplant Surgery and Endocrine Surgery to the standard defined in the syllabus.

9.1.1 ST5 / 6 and ST7 / 8

- Training in **Elective and Emergency General Surgery** will be continued throughout ST5/6 and ST7/8 for all trainees.

- Those with an interest in **Upper Gastrointestinal Surgery** will complete one year each of Upper Gastrointestinal Surgery and of Colorectal Surgery during ST5 and ST6 followed by two years of Upper Gastrointestinal Surgery during ST7 and ST8.
- Those with an interest in **Colorectal Surgery** will complete one year each of Upper Gastrointestinal Surgery and of Colorectal Surgery during ST5 and ST6 followed by two years of Colorectal Surgery during ST7 and ST8.
- Those with an interest in **Breast Surgery** will complete one year of gastrointestinal surgery and three years of oncological breast surgery.
- Those with an interest in **Transplant Surgery** will complete one year of gastrointestinal surgery and three years of Transplant Surgery (elective and emergency). Emergency transplant training will need to be arranged alongside the on going training in Emergency General Surgery within the Working Time Regulations.
- Trainees may also choose to gain competencies in one of the other areas of general surgery (thyroid, parathyroid, advanced endocrine, general surgery of childhood, advanced trauma surgery or remote and rural surgery).
- By the end of the ST6:
 - All trainees will have the knowledge, clinical and technical skills of Elective General Surgery and of Emergency General Surgery as defined in the syllabus for ST6.
 - Trainees will have the knowledge, clinical and technical skills of Upper Gastrointestinal Surgery, Colorectal Surgery and of their chosen special interest(s) as defined in the syllabus for ST6.
- By the end of the ST8:
 - All trainees will have the knowledge, clinical and technical skills of Elective General Surgery and of Emergency General Surgery as defined in the syllabus for ST8.
 - Trainees will have the knowledge, clinical and technical skills of their chosen special interest(s) as defined in the syllabus for ST8 and of the other components of general surgery as shown in Table 1.
- CCT holders will be capable of working as a consultant within a multi-disciplinary team in Elective and Emergency General Surgery and in one of: Upper Gastrointestinal, Colorectal, Breast or Transplant Surgery. They may also have chosen to gain competencies to allow them to work as a consultant within a multi-disciplinary team in thyroid, parathyroid, advanced endocrine, general surgery of childhood, advanced trauma or remote and rural surgery.

10 Assessment

- Knowledge, clinical and technical skills will be assessed by the FRCS examination and by Workplace Based Assessments (Case Based Discussions and Procedure Based Assessments), the types and numbers required being indicated by the JCST.
- Expected levels of competence are defined for each topic for each key stage throughout the syllabus. Competence levels for thyroid, parathyroid, advanced endocrine, general surgery of childhood, advanced trauma surgery or remote and rural surgery are given for the end of ST8 as these may be completed at varying stages throughout ST5 - 8 (with the exception of ST4 competencies for Endocrine Surgery which have to be achieved by all trainees).
- Trainees will undergo annual review (ARCP) so that competence and experience can be assessed against the curriculum. Appropriate adjustments to training and learning can be made to ensure that all necessary competencies are acquired by the end of training (ST8). Some trainees will require extra training time if they are not gaining competencies or experience at the required rate. This may be a reflection of opportunities or of slower than expected gain in competence.
- The documentary evidence required in the areas of clinical and technical skills (competence and quantity of experience) is laid out in Appendix 1.

11 Award of CCT

- The CCT in general surgery will be recommended upon:
- Completion of a recognised training programme
This requires successful completion of each of the stages of training and gaining all the competencies as defined in the curriculum
- Satisfactory performance in the FRCS examination

- Satisfactory reports from the training programme director based on the ARCP process
- Demonstrable achievement of competencies and experience (including an assessment of the operative logbook) as laid out in the Appendix 1

1.1 Table 1. The general surgery curriculum showing the levels to be reached by CCT for each component by trainees with different interests

| Area | All Trainees | Interests | | | |
|---------------------------|--------------|------------------------|------------|------------|--------|
| | | Upper Gastrointestinal | Colorectal | Transplant | Breast |
| Elective General Surgery | ST8 | | | | |
| Emergency General Surgery | ST8 | | | | |
| Upper Gastrointestinal | ST6 | ST8 | | | |
| Colorectal | ST6 | | ST8 | | |
| Transplant | ST4 | | | ST8 | |
| Breast | ST4 | | | | ST8 |
| *Endocrine | ST4 | | | | |
| Vascular | ST4 | | | | |

- *Trainees who want to develop an interest in aspects of endocrine surgery need to gain ST8 competencies in those aspects by CCT
- Trainees who want to develop an interest in the general surgery of childhood, advanced trauma surgery or remote and rural surgery need to gain ST8 competencies in the relevant area by CCT
- Trainees whose main interest is not Upper Gastrointestinal or Colorectal Surgery are not expected to gain technical skills competencies in endoscopy. Those shown in the syllabus are for trainees with an interest in Upper Gastrointestinal or Colorectal surgery only.

12 Key Topics

- The topics listed in this section are illustrative and not exhaustive. Details are shown in the syllabus in the appropriate sections. 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.
- Trainees will complement their clinical training with professional development in activities such as clinical audit, service improvement and clinical governance, research, teaching and health service management to ensure an all round experience to gain the necessary attributes to become a Consultant.
- It is incumbent on the trainee that operative experience, including the levels of competence achieved, are recorded in the appropriate log books. A record should also be kept of relevant research, audit, teaching feedback and training courses. An audit of personal cases performed should show reflective practice. This portfolio will continue into consultant practice.
- Decision making is a key skill in all components of General Surgery and covers diagnosis, investigation and selection for operative treatment. Trainees are expected to learn this through observation, teaching and their own practice. In order to achieve this trainees must have continuity of care over sufficiently long periods of time to be able to learn by observation of the consequences of decisions that have been made.

12.1 Elective General Surgery

- All trainees in general surgery will obtain this set of knowledge and skills to the competency levels set for ST8.

12.1.1 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

12.1.2 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
- Competent to perform primary hernia repair selecting appropriate approach (open or laparoscopic)
- Competent to repair uncomplicated recurrent hernia involving other specialists as appropriate

12.1.3 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

12.1.4 Capable of managing patients referred to a general surgical out patient clinic

- A wide variety of patients are referred to general surgical out patient clinics with conditions from across the curriculum. Trainees should be able to manage these patients, recognising when referral to a more specialised or experienced colleague is appropriate.

12.1.5 Index Procedures

12.2 Hernia repair – all typesEmergency General Surgery

- All trainees in general surgery will obtain this set of knowledge and skills to the competency levels set for ST8.
- Emergency surgery continues throughout the six years for all trainees and should take place in blocks of at least one week in duration. This is to enable trainees to gain competence in:
 - assessing the wide variety of patients who present
 - learn the management of patients with abdominal pain and other conditions where symptoms and signs develop with time
 - learn continuity of care, judgement and decision making
 - learn how to prioritise work
- The detailed syllabus includes a general section covering general principles and sections covering specific emergency conditions of the GI tract and vascular system. All trainees must gain the competencies indicated in all these sections.
- The principle is for CCT holders to be fully competent in all common emergency conditions, including their operative treatment.
- For some uncommon conditions requiring emergency surgery, life saving damage limitation procedures are specified allowing stabilisation of the patient prior to onward referral for definitive treatment (eg perforated gastric cancer)
- For other uncommon conditions requiring urgent but not emergency surgery trainees must achieve the knowledge and clinical skills as detailed, learn to recognise when operative treatment is required and refer these patients on to surgeons with more specialist expertise when necessary (eg Boerhaave's syndrome)

12.2.1 Manage infections of the skin and superficial tissues:

- Diagnose and manage the common infections of the skin and superficial infections including abscess and cellulitis.

- Diagnose and manage acute perianal sepsis and other painful perianal conditions
- Competent to modify management in the presence of co-morbidity such as diabetes and vascular insufficiency
- Recognise and manage complicated skin infections including gas forming organisms and necrotising infections

12.2.2 Manage patients presenting with an acute abdomen:

- Competent to manage patients (including children) presenting with abdominal pain or an acute abdomen
- Competent to manage patients presenting with peritonitis including acute appendicitis, acute cholecystitis, empyema of the gall bladder, obstructive jaundice, perforated viscus (oesophagus, stomach, duodenum, small and large bowel), complications of diverticular disease, colitis, acute pancreatitis, mesenteric infarction and acute presentations of gynaecological disease
- Competent to manage patients presenting with acute intestinal obstruction and related conditions including small bowel obstruction, large bowel obstruction, strangulated hernia, pseudo-obstruction, sigmoid volvulus, acute dysphagia, acute gastric dilation and gastric volvulus
- Recognise the indications for and be able to perform exploratory laparotomy when necessary to treat the cause of acute abdominal conditions

12.2.3 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 appropriately
- Be familiar with the indications and be competent to perform surgical intervention if necessary

12.2.4 Manage the patient with multiple injuries:

- Assess and resuscitate the patient (including children) with multiple injuries in accordance with the ATLS standards current at the time
- Trainees should have a valid ATLS certificate when they apply for CCT
- 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.

12.2.5 Manage trauma of specific areas

- Diagnose and manage patients (including children) with abdominal trauma including bowel, splenic, hepatic and pancreatic injuries.
- Competent to recognise the indications for and to perform exploratory and damage limitation laparotomy
- Diagnose and initially manage vascular trauma, controlling haemorrhage with pressure and referring on for definitive management
- Initial management of soft tissue extremity injury, referring on when necessary for definitive management
- Initial management of head and neck injury, referring on when necessary for definitive management
- Diagnose and initiate management of the patient with possible injury to the uro-genital tract, involving other specialists appropriately.
- Initial management of thoracic injury; ability to carry out damage control thoracotomy when this is required as an emergency; onward referral to more specialised surgeons when appropriate

12.2.6 Manage general surgical emergencies in childhood and adolescence

- Diagnose and manage children and young adults presenting with common general surgical emergency conditions, in collaboration with paediatricians when appropriate.
- Competent to manage patients presenting with abdominal pain
- Competent to initially manage patients with intussusception, referring on when necessary

- Competent to manage acute testicular torsion in childhood and initially manage incarcerated hernia, referring on when necessary

12.2.7 Specific oesophago-gastric emergency conditions

- Diagnose and manage patients presenting with emergency oesophago-gastric conditions, referring on when necessary:
 - Acute dysphagia
 - Bleeding oesophageal varices
 - Boerhaave's syndrome
 - Iatrogenic oesophageal perforation
 - Acute gastric dilatation
 - Acute gastric GI haemorrhage
 - Acute perforation
 - Acute gastric volvulus

12.2.8 Specific pancreatobiliary emergency conditions

- Diagnose and manage patients presenting with emergency pancreato-biliary conditions, referring on when necessary:
 - Gallstone disease – acute and chronic cholecystitis, empyema, mucocoele, acute biliary colic, cholangitis, obstructive jaundice, gall stone ileus
 - Acute pancreatitis
 - Chronic pancreatitis

12.2.9 Specific colorectal emergency conditions

- Peri-anal sepsis
- Pilonidal disease
- Acute painful peri-anal conditions
- Acute diverticular disease
- Colonic volvulus
- Massive lower GI bleeding
- Acute colitis

12.2.10 Specific vascular emergency conditions

- Trainees are required to learn assessment and diagnosis but not operative treatment for these conditions
- Ruptured aneurysm
 - Acute limb ischaemia
 - Acute mesenteric ischaemia

12.2.11 Index Procedures

- Laparotomy for peritonitis
- Laparotomy for intestinal obstruction
- Laparotomy for abdominal trauma – blunt and penetrating

12.3 Upper Gastrointestinal Surgery

- All trainees with an interest in Upper Gastrointestinal Surgery must achieve competencies in the breadth of Upper Gastrointestinal Surgery including oesophago-gastric surgery and hepato-pancreato-biliary surgery as defined in the syllabus.
- Competencies required in the other components of General Surgery, including Emergency General Surgery, are shown in Table 1.

12.3.1 Manage the patient presenting with gastro-oesophageal symptoms, including dysphagia and dyspepsia:

- Competent to manage disorders including gastro-oesophageal reflux, oesophageal motility disorders, hiatus hernia, oesophageal perforation and the complications of peptic ulceration.
- Competent to manage the common malignant conditions of the upper gastrointestinal tract including oesophageal and gastric cancer within a multi-disciplinary team with other surgical, medical and clinical oncology colleagues and recognising that full competence may not be achieved in all operative procedures

12.3.2 Manage the patient presenting with morbid obesity

- Competent to assess a patient presenting with morbid obesity, to perform bariatric surgery and manage the associated complications.

12.3.3 Manage the patient presenting with symptoms referable to the biliary tract, pancreas and liver, including jaundice:

- Competent to diagnose and manage patients presenting with symptoms and complications of gall-stone disease
- Competent to manage, including referral for radiological and endoscopic investigation and intervention, patients presenting with jaundice
- Competent to manage patients with acute and chronic inflammation of the pancreas
- Competent to manage patients with malignant disorders including pancreatic cancer, primary and secondary liver cancer and biliary cancer within a multi-disciplinary team with other surgical, medical and clinical oncology colleagues, recognising that full competence may not be achieved in all operative procedures

12.3.4 Index Procedures in Upper Gastrointestinal Surgery

- Cholecystectomy (both laparoscopic and open)
- Pancreatic resection
- Liver resection
- Oesophago-gastro-duodenoscopy
- Anti-reflux surgery (both laparoscopic and open)
- Gastrectomy
- Oesophagogastrectomy

12.3.5 Endoscopy

- Training in diagnostic and therapeutic endoscopy is according to the Joint Advisory Group on Gastrointestinal Endoscopy (JAG) guidelines at <http://www.thejag.org.uk/>. The knowledge and skills for endoscopy have been defined by the JAG. Trainees are expected to gain these competencies and progress will be assessed as any other technical skill in surgical training within the ARCP process. Trainees will be expected to record their experience in the JAG endoscopy training system (JETS) e-portfolio (linked to ISCP).

12.4 Colorectal Surgery

- All trainees with an interest in Colorectal Surgery must achieve competencies in colorectal surgery as defined in the syllabus for ST8.
- Competencies required in the other components of General Surgery, including Emergency General Surgery, are shown in Table 1.

12.4.1 Manage patients presenting with symptoms referable to the lower gastrointestinal tract

- Competent to manage patients presenting with such symptoms as change of bowel habit, rectal bleeding, and rectal pain
- Competent to arrange appropriate radiological and endoscopic investigations involving other specialists as appropriate

12.4.2 Manage patients presenting with benign ano-rectal pathology

- Competent to manage the common benign ano-rectal conditions including haemorrhoids, fissure, abscess/fistula in ano and pilonidal sinus

12.4.3 Manage patients presenting with benign colorectal pathology

- Competent to manage diverticular disease and volvulus
- Competent to manage patients with inflammatory bowel disease

12.4.4 Manage patients with functional bowel disorders

- Competent to manage patients with conditions such as faecal incontinence, rectal prolapse, solitary rectal ulcer, constipation, irritable bowel syndrome and chronic rectal pain

12.4.5 Manage patients with colorectal and anal malignancy

- Competent to manage patients with colorectal and anal malignancy within a multi-disciplinary team with other surgical, medical and clinical oncology colleagues, recognising that full competence may not be achieved in all operative procedures.

12.4.6 Index Procedures

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

12.4.7 Endoscopy

- Training in diagnostic and therapeutic endoscopy is according to the Joint Advisory Group on Gastrointestinal Endoscopy (JAG) guidelines at <http://www.thejag.org.uk/>. The knowledge and skills for endoscopy have been defined by the JAG. Trainees are expected to gain these competencies and progress will be assessed as any other technical skill in surgical training within the ARCP process. Trainees will be expected to record their experience in the JAG endoscopy training system (JETS) e-portfolio linked to the ISCP.

12.5 Oncoplastic Breast Surgery

- All trainees with an interest in oncoplastic breast surgery must achieve competencies in oncoplastic breast surgery as defined in the syllabus for ST8.
- Competencies required in the other components of General Surgery, including Emergency General Surgery, are shown in Table 1.

12.5.1 Organisational Aspects

- Understand and apply the principles of team dynamics and working and clinical leadership
- Understand the core role of the breast surgeon within the various breast multi-disciplinary teams (MDT): diagnostic, oncoplastic and oncology
- Understand the processes of breast service delivery to enable high quality service delivery, outcomes and patient experience

12.5.2 Manage patients presenting with any breast condition

- Competent to assess male and female patients with breast symptoms or signs within the breast diagnostic MDT
- Understand the importance and be competent to assess and offer advice for male and female breast aesthetics at any age
- Understand the principles, utility and limitations of triple breast assessment
- Provide breast cancer risk assessment, advice on risk management and appropriate genetic referral
- Understand the benefits and risks of breast screening

12.5.3 Manage patients with benign breast conditions

- Competent to manage benign breast/nipple conditions (cysts, pain, discharge etc)
- Understand the principles and be able to assess/give advice in pregnancy and lactation
- Competent to assess congenital/developmental breast/nipple problems recognising that full competence may not be achieved in all aspects of complex problems
- Understand the local/national referral network to specialist centres/expertise as appropriate

12.5.4 Manage patients with malignant breast disease

- Competent to manage patients with symptomatic and screen detected cancers within the diagnostic, oncoplastic and oncology MDT
- Competent to assess the need for the most appropriate primary breast cancer surgery (conservation or mastectomy) within the breast oncoplastic and oncology MDT and understand strategies to minimise the need for mastectomy and extend the role of breast conservation

- Competent to assess, recommend and perform oncoplastic breast surgery within an oncoplastic multi-disciplinary team recognising that full competence may not be achieved in more complex reconstructive techniques such as free flaps and micro-vascular anastomosis
- Understand and be able to assess need for revisional oncoplastic surgery and salvage cancer surgery
- Understand the local/national referral network to specialist centres/expertise as appropriate

12.5.5 Index Procedures in Oncoplastic Breast Surgery

- Image guided surgery
- Mastectomy – all techniques
- Duct and nipple surgery
- Sentinel lymph node biopsy
- Axillary clearance
- Implant reconstruction
- Pedicle flaps
- Mammoplasty: augmentation and reduction

12.6 Transplant Surgery

- All trainees with an interest in transplant surgery must achieve competencies in transplant surgery as defined in the syllabus for ST8.
- Competencies required in the other components of General Surgery, including Emergency General Surgery, are shown in Table 1.

12.6.1 General Aspects

- Understand the principles of transplantation, organ donation and the criteria for the diagnosis of brain stem death and circulatory death
- Competent to diagnose, assess and initially manage patients presenting with renal failure / acute kidney injury, involving other specialist colleagues
- Understand the indications for and principles of haemodialysis and peritoneal dialysis

12.6.2 Management of organ donation

- Competence in donor management, organ preservation and surgical anatomy of multi-organ donors
- Competent to manage multi-organ retrieval from a donation after brain death (DBD) donor and from a donation after circulatory death (DCD) donor
- Familiar with assessment and treatment of living donors

12.6.3 Managing patients requiring access for dialysis

- Competent to manage patients requiring vascular and peritoneal access
- Competent to recognise and manage early and late complications of vascular and peritoneal access, involving other specialist colleagues as the situation requires

12.6.4 Management of the patient undergoing organ transplantation

- Understand HLA matching and cross-match techniques
- Understand the use of immunosuppressants, their side effects and complications, involving other specialist colleagues as the situation requires
- Competent to diagnose and manage infectious and malignant complications following transplantation, involving other specialist colleagues as the situation requires
- Competent to recognise and treat acute rejection

12.6.5 Management of patients undergoing a kidney transplant (adult and paediatric)

- Competent to manage patients requiring a kidney transplant from a deceased or living donor
- Competent to manage the causes of post-kidney transplant dysfunction, involving other specialist colleagues as the situation requires,
- Competent to manage and treat ureteric, arterial and venous complications following kidney transplantation

12.6.6 Management of patients undergoing a liver transplant

- Understand the common causes and management of acute and chronic liver failure
- Understand the principles of assessment, selection and treatment of a patient requiring a liver transplant
- Familiar with the diagnosis and management of the causes of post-liver transplant dysfunction, involving other specialist colleagues as the situation requires
- Familiar with the diagnosis, management and principles of treatment of biliary, arterial and venous complications following liver transplantation.

12.6.7 Management of patients undergoing a pancreas transplant

- Understand the indications and contraindications for pancreas transplantation in diabetes
- Understand the principles of assessment, selection and treatment of a patient requiring a pancreas transplant
- Familiar with the diagnosis and management of the causes of post-pancreas transplant dysfunction
- Familiar with the diagnosis, management and principles of treatment of bladder or enteric drainage, arterial and venous complications following pancreas transplantation, involving other specialist colleagues as the situation requires

12.6.8 Index Procedures in Transplant Surgery

- Insertion of Peritoneal Dialysis catheter
- Creation of AV fistula
- Multiorgan deceased donor organ retrieval (kidney, liver and pancreas)
- Kidney transplant

12.7 Endocrine Surgery

- All trainees must achieve ST4 competencies in Endocrine Surgery during the Intermediate stage. Some trainees may choose to gain further competencies in one or more aspects of endocrine surgery alongside one of the other special interests
- Consequently only ST4 and ST8 competencies are given as trainees may choose to gain the ST8 competencies at any time during ST5 - 8

12.7.1 Thyroid

- Competent to assess and make a diagnosis in a patient presenting with a swelling in the neck, including thyroglossal cyst and cervical adenopathy
- Competent to diagnose and investigate a patient with a thyroid swelling / nodule
- Competent to diagnose and investigate a patient with thyroid cancer
- Competent to diagnose and investigate a patient with retrosternal goitre
- Competent to diagnose and investigate a patient with thyrotoxicosis
- Competent to perform the appropriate operative procedure for the above conditions including lymph node dissection
- Competent to undertake the postoperative management after thyroid surgery

12.7.2 Parathyroid

- Understand the diagnosis, investigations and medical treatment of disorders of parathyroid function
- Competent to undertake surgery for parathyroid disorders including re-exploration of the neck
- Competent to undertake the postoperative management of patients after parathyroid surgery

12.7.3 Advanced Endocrine

12.7.3.1 Management of Adrenal disorders

- Competent to diagnose and investigate disorders of the adrenal gland that present as an adrenal mass
- Competent to undertake adrenalectomy
- Competent to undertake postoperative management after adrenalectomy

12.7.3.2 Management of Pancreatic Endocrine Disorders and Gastrointestinal Neuro Endocrine Tumours (GI NET)

- Competent to diagnose and investigate possible pancreatic endocrine tumours / GI NET
- Competent to manage pancreatic endocrine tumours / GI NET including surgery
- Competent to manage both the immediate and long-term care after surgery for pancreatic endocrine tumours / GI NET

12.7.3.3 Management of Multiple Endocrine Neoplasia (MEN syndromes)

- Able to apply knowledge of the genetics and various presentations of patients with MEN
- Competent to assess and manage patients with MEN disorders
- Competent to manage patients and families with proven or suspected MEN, including MEN 1, MEN 2 and familial medullary thyroid cancer
- Competent to undertake the operative management of MEN disorders including postoperative management and follow-up

12.7.4 Index Procedures

- Adrenal Surgery
- Parathyroidectomy
- Re-operative thyroid surgery
- Thyroid lobectomy

12.8 Acute Vascular Surgery

Recognise acute and chronic limb ischaemia and competence in assessing the degree of severity of ischaemia in relation to the degree of urgency of treatment required.

Competence in the resuscitation and initial management of patients with severe acute ischaemia

Competence in the resuscitation, diagnosis and initial management of patients with ruptured aortic aneurysm

12.9 General Surgery of Childhood

- In order to gain the necessary competencies trainees will need to spend an attachment on a specialised paediatric surgical unit and maintain their paediatric competencies through their training to CCT.
- Trainees choosing to gain competencies in the general surgery of childhood will do so alongside one of the other special interests.

12.9.1 Manage children presenting with general surgical conditions

- Manage patients with acute abdominal pain, recognising when referral to specialist centres is required
- Manage patients with penile inflammation and acute scrotal conditions
- Manage patients with inguinal, epigastric, umbilical or supra-umbilical hernia and hydrocoele
- Manage patients with undescended testis, recognising when referral to specialist centres is required
- Assess and diagnose intussusception, referring on for radiological or surgical treatment as appropriate
- Assess, diagnose and refer on when appropriate patients with vomiting (including cases of suspected pyloric stenosis)
- Manage patients with abdominal wall hernia, including epigastric, umbilical and supra-umbilical hernia
- Manage patients with superficial abscess and ingrowing toe nail
- Assess and manage a patient with trauma

12.9.2 Index Procedures

- Paediatric hernia / hydrocoele
- Paediatric circumcision
- Orchidopexy

12.10 Advanced Trauma

- Military surgeons and those intending to work as trauma surgeons in a major trauma centre need extra skills in trauma surgery. Trainees will require a placement in a major trauma centre to be exposed the necessary clinical workload.
- The aim is to provide the surgeon with the ability to perform life and limb saving procedures across the wide range of presentations of patients with major trauma.
- In addition, Military surgeons will be trained to do this work as an isolated consultant surgeon on deployment in arduous conditions with the purpose of stabilising the patient for evacuation no longer than 48 hours from wounding.
- Trainees choosing to gain competencies in Advanced Trauma will do so alongside one of the other special interests.

12.10.1 Manage patients with significant and/or multiple trauma

- Competent to assess, resuscitate and investigate patients (including children) with multiple injuries in accordance with the ATLS standards current at the time
- Competent to recognise the indications for radiological intervention
- Competent to recognise the indications for and to perform operative intervention as detailed below
- Pathophysiology of trauma: Knowledge of the pathophysiology of different types of trauma.

12.10.2 Operative Procedures

- 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.
- Safe patient transfer: Ability to make the correct decision re patient transfer (Military surgeons)

12.11 Remote and Rural Surgery

- Those intending to apply for consultant posts in Remote and Rural surgery will need to gain extra competencies in ophthalmology, otolaryngology, dental surgery, plastic surgery and neurosurgery. Some skills in orthopaedics, urology and gynaecology may also be required depending on local circumstances and trainees, along with their TPD, will need to ensure that the skills required for individual posts are attained.
- These extra competencies should be gained alongside one of the other special interests.
- All trainees who would like to develop an interest in Remote and Rural Surgery should spend a full placement in a Remote and Rural hospital and should be helped by their Training Programme Directors to identify possible future consultant posts as these will be small in number.
- Trainees choosing to gain competencies in Remote and Rural Surgery will do so alongside one of the other special interests.

12.11.1 Key topics, in addition to another special interest

- Ophthalmology
Ability to deal with common minor eye emergencies and refer serious problems appropriately
Conditions include foreign body, dendritic ulcer, flash burns, common infections
- Otolaryngology
Ability to deal with common ENT emergencies and refer serious problems appropriately
Conditions include foreign bodies and epistaxis

- **Dental Surgery**
Ability to deal with common minor dental emergencies and refer serious problems appropriately
Conditions include bleeding post extraction, broken teeth and dental abscess
- **Plastic Surgery**
Ability to deal with common minor plastic surgical emergencies and refer serious problems appropriately.
Conditions include tendon injuries, burns and skin grafts
- **Neurosurgery**
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.
- Ability to initially manage and refer as appropriate patients with spinal injuries.

13 List of Topics by Component

| COMPONENT | 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 | |
| | | Laparoscopic Surgery | |
| | Emergency - General | Superficial sepsis | |
| | | Acute Abdomen | |
| | | Acute intestinal obstruction | |
| | | Acute appendicitis | |
| | | Peritonitis | |
| | | Strangulated hernia | |
| | | Acute gynaecological disease | |
| | | Gastrointestinal bleeding | |
| | | Abdominal injuries | |
| | | Blunt and penetrating injuries | |
| | | Childhood abdominal emergencies | |
| | | Abdominal pain in childhood | |
| | | Intussusception | |
| | | Acute groin condition | |
| | | Emergency - Specific | Acute dysphagia |
| | | | Oesophageal varices |
| | | | Boerhaave's |
| | | | Iatrogenic oesophageal perforation |
| | Acute gastric dilatation | | |
| | Acute gastric haemorrhage | | |
| | Acute perforation | | |
| | Acute gastric volvulus | | |
| | Gallstone disease | | |
| Acute pancreatitis | | | |
| Chronic pancreatitis | | | |
| Peri-anal sepsis | | | |
| Pilonidal disease | | | |
| Acute painful peri-anal conditions | | | |
| Diverticular Disease | | | |
| Volvulus | | | |
| Massive lower GI bleeding | | | |
| Acute colitis | | | |
| Emergency aneurysm disease | | | |

| | | |
|----------|------------------|--|
| | | Mesenteric vascular disease |
| | | Limb ischaemia |
| | Trauma | Trauma principles |
| | | Vascular trauma |
| | | Extremity and soft tissue |
| | | Head and Neck |
| | | Abdomen and thorax |
| | | Advanced Trauma/Military Surgery |
| VASCULAR | | Acute limb ischaemia |
| | | Mesenteric ischaemia |
| | | Aneurysmal disease |
| 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 and periampullary cancer |
| | | Cystic tumours |
| | | Neuroendocrine tumours |
| | | Intraductal Papillary Mucinous Neoplasms |
| | | Pancreatic trauma |
| | Liver | Liver metastases |
| | | Primary liver cancer |
| | | Cholangiocarcinoma tumours and gall bladder cancer |
| | | Benign and cystic tumours |
| | | Liver trauma |
| 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 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 | |
| | | |
| TRANSPLANTATION | | Access for dialysis |
| | | Organ retrieval |
| | | Kidney transplantation |
| | | Paediatric kidney transplantation |
| | | Pancreatic transplantation |
| | | Liver transplantation |
| | | |
| ONCOPLASTIC BREAST | | Breast assessment |
| | | Benign conditions |
| | | Breast cancer |
| | | |
| ENDOCRINE | | Neck swellings |
| | | Thyroid |
| | | Parathyroid |

| | | |
|------------------------------------|--|----------------------------|
| | | Adrenal |
| | | Pancreatic endocrine |
| | | MEN |
| | | |
| GENERAL SURGERY O F CHILDHOOD | | Abdominal pain |
| | | Intussusception |
| | | Child with vomiting |
| | | Constipation |
| | | Abdominal wall conditions |
| | | Child with groin condition |
| | | Urological conditions |
| | | Head and neck swellings |
| | | Trauma |
| | | Miscellaneous |
| | | |
| ADVANCED TRAUMA / MILITARY SURGERY | | General principles |
| | | |
| REMOTE AND RURAL | | Ophthalmology |
| | | Otolaryngology |
| | | Dental |
| | | Plastic Surgery |
| | | Neurosurgery |
| | | |

14 PROFESSIONAL SKILLS

- This part of the syllabus concentrates on the behaviour and professional skills required of all surgeons and is common to all specialties. Professional behaviour and values are guided by the GMC's framework for Good Medical Practice. In order to function to the level expected of a consultant in the NHS skills in a variety of areas are required.

14.1 GMC Good Medical Practice

- Good Medical Practice identifies seven key principles and values on which good practice is founded:
 - Good clinical care
 - Maintaining good medical practice
 - Teaching and training, appraising and assessing,
 - Relationships with patients
 - Working with colleagues
 - Probity
 - Health
- For more details please see the GMC website at www.gmc-uk.org/guidance/good_medical_practice.asp

14.2 Clinical Judgement and Decision Making

- These are skills which will be acquired throughout training and which will continue to be refined after CCT.
- They combine all aspects of the curriculum (knowledge, clinical skills and technical skills) with clinical experience and professionalism and allow the practitioner to reach conclusions and make decisions in the patient's best interests.
- These skills are important in (but are not limited to) decisions over case selection for operative or non-operative treatment, when to refer patients for second opinions, recognition of limitations of skill and end of life care.

14.3 Research

- Trainees will be expected to be able to provide evidence of an understanding of, and participation in, research
- Trainees should have peer reviewed papers (not case reports) published in an indexed journal and first author presentations at a regional, national or international meeting during specialty training as specified by JCST. The trainee's contribution to each of these pieces of work should have been significant.

14.4 Audit/Service improvement

- Trainees will be expected to be able to provide evidence of an understanding of, and participation in, audit and / or service improvement:
- Trainees should complete or supervise audit or service improvement projects during specialty training as specified by JCST. In at least one of these the audit cycle should be completed.

14.5 Medical Education and Training

- Trainees will be expected to be able to provide evidence of an understanding of, and participation in, medical education and training (undergraduate and/or postgraduate):
- Trainees should have attended a 'Training the Trainers' course during training.
- Trainees should provide evidence of having been involved in teaching by presenting written structured feedback

14.6 Management and leadership

- Trainees will be expected to be able to provide evidence of an understanding of management structures and challenges of the NHS in the jurisdiction in which they have trained

- Trainees should have attended a course on health service management during training and provide evidence of having taken part in a management related activity eg rota administration, trainee representative, membership of working party etc.

14.7 Courses/qualifications

- Trainees will be expected to provide evidence of having attended specific courses/gained specific qualifications
- Trainees must have a valid ATLS provider or instructor credential at the time of CCT.
- Trainees should provide proof of having attended a course in a topic relevant to their special interest

14.8 Educational conferences

- Trainees will be expected to be able to provide evidence of having attended appropriate national or international educational conferences or meetings during training as specified by JCST

15 Appendix 1 - Documentary evidence required for CCT

- In addition to the statutory documentation required, trainees should provide evidence under Sections 14.3 to 14.8 above
- They should also provide evidence of clinical competence, operative experience and operative competence as described below

15.1 Clinical competence

- Trainees will be expected to be able to provide evidence of the breadth of clinical experience defined in the syllabus of their specialty by presenting a minimum of:
- Examples of case based discussions showing at least satisfactory performance at CCT level:
 - 10 in different conditions from the range of emergency general surgery
 - 10 in different aspects of the trainee's special interest
 - 10 in different conditions from other areas of general surgery

15.2 Operative experience

Trainees will be expected to be able to provide evidence (in their consolidated logbook) of the breadth of operative experience defined in the syllabus of their specialty
 Indicative operation numbers for General Surgery (P+ S-TS + S-TU + T)

Elective and Emergency General Surgery - All trainees

| | | | |
|---|-----------------|---------------------|----|
| inguinal hernia | 60 | | |
| cholecystectomy | 50 | | |
| emergency laparotomy (excl appendectomy) | 100 to include: | Hartmann's | 5 |
| appendectomy | 80 | Segmental colectomy | 20 |

Breast Special Interest

| | |
|----------------------|----|
| breast lump excision | 40 |
| mastectomy | 50 |
| sentinel node biopsy | 70 |
| axillary clearance | 45 |

Colorectal Special Interest

| | |
|---------------------|----|
| anterior resection | 30 |
| fistula surgery | 20 |
| segmental colectomy | 50 |
| haemorrhoidectomy | 15 |
| prolapse surgery | 4 |

(some colonic resections should be laparoscopic)

UGI Special Interest

| | |
|----------------------|---|
| major UGI procedures | 35 (includes anti reflux procedures, bariatric operations and upper GI/HPB resection) |
|----------------------|---|

(some trainees will choose to focus primarily on benign and others on resectional)

NB

These are intended as guideline numbers intended to show breadth of experience.

Changes in practice over time may require modifications to some of the numbers.

To date there are insufficient data to produce numbers for transplant or endocrine. These will be added in future modifications.

15.3 Operative competence

Trainees will be expected to be able to provide evidence of competence in this list of indicative operative procedures:

Three PBAs carried out with different assessors should be presented for each of the index procedures in Elective and Emergency General Surgery and in the trainee's chosen special interest at the level required for CCT

16 Appendix 2 - Description of Competence Levels

16.1 Knowledge

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

16.2 Clinical and Technical Skills

16.2.1 1: Has observed – the trainee acts as an ‘Assistant’

- Ranges from: complete novice, new to the procedure through to being a competent assistant
- Exit descriptor; at this level the trainee:
 - Has adequate knowledge of the steps through direct observation.
 - Demonstrates that he/she can handle instruments relevant to the procedure appropriately and safely.
 - Can perform some parts of the procedure with reasonable fluency

16.2.2 2: Can do with assistance - a trainee is able to carry out the procedure ‘Directly Supervised’

- Ranges from: being able to carry out parts of the procedure under direct supervision (trainer scrubbed) through to being able to complete the whole procedure under lesser degrees of direct supervision (e.g. trainer immediately available in theatre or in suite).
- Exit descriptor; at this level the trainee:
 - Knows all the steps - and the reasons that lie behind the methodology.
 - Can carry out a straightforward procedure fluently from start to finish.
 - Knows and demonstrates when to call for assistance/advice from the supervisor (knows personal limitations).

16.2.3 3: Can do whole but may need assistance – a trainee is able to do the procedure ‘Indirectly Supervised’

- Ranges from: being able to carry out the whole procedure under direct supervision (trainer immediately available in theatre) through to being able to carry out the whole procedure without direct supervision i.e. trainer available but not in direct contact with the trainee.
- Exit descriptor; at this level the trainee:
 - Can adapt to well known variations in the procedure encountered, without direct input from the trainer.
 - Recognises and makes a correct assessment of common problems that are encountered.
 - Is able to deal with most of the common problems.
 - Knows and demonstrates when he/she needs help.
 - Requires advice rather than help that requires the trainer to scrub.

16.2.4 4: Competent to do without assistance, including complications – a trainee is at CCT level and ‘Finishing’ for the common procedures in a specialty

- Ranges from: being able to carry out the procedure without direct input from the trainer (e.g. can deal with the majority of operative problems and complications, but may need occasional help or advice) through to competent to carry out the procedure without supervision - i.e. can deal with the accepted range of foreseeable problems.
- Exit descriptor, at this level the trainee:
 - With regard to the common clinical situations in the specialty, can deal with straightforward and difficult cases to a satisfactory level and without the requirement for external input.
 - The level at which one would expect a UK consultant surgeon to function.
 - Is capable of supervising trainees.

Core Surgical Training Syllabus (Initial Stage)

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: Health promotion

- To promote good health.

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 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 cholecystitis, 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 pilonidal abscess and breast abscess. To be aware of gas gangrene and necrotising fasciitis

| Module 1 | Basic sciences | Assessment technique | Areas in which simulation should be used to develop relevant skills |
|-----------|--|--|---|
| Objective | <ul style="list-style-type: none"> • 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 | <p>Course completion certificate</p> <p>MRCS</p> | |

| | | | |
|-----------|--|--|---|
| | <p>relevant to surgical practice</p> <p>Imaging:</p> <ul style="list-style-type: none"> • Knowledge of the principles, strengths and weaknesses of various diagnostic and interventional imaging methods | | |
| Knowledge | <p>Applied anatomy:</p> <ul style="list-style-type: none"> • Development and embryology • Gross and microscopic anatomy of the organs and other structures • Surface anatomy • Imaging anatomy <p>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).</p> <p>Physiology:</p> <p>General physiological principles including:</p> <ul style="list-style-type: none"> • 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 <p>This will include the physiology of specific organ systems relevant to surgical care including the cardiovascular, respiratory, gastrointestinal, urinary, endocrine and neurological systems.</p> <p>Pharmacology:</p> <ul style="list-style-type: none"> • 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 • Can describe the effects and potential for harm of alcohol and other drugs including common presentations, wide range of acute and long term presentations (e.g. trauma, depression, hypertension etc.), the range of interventions, treatments and prognoses for use of alcohol and other drugs. <p>Pathology:</p> <p>General pathological principles including:</p> <ul style="list-style-type: none"> • Inflammation • Wound healing | | <p>Strongly recommended: Life support</p> <p>Critical care</p> <p>Desirable Anatomy</p> <p>Team-Based</p> <p>Human Factors</p> |

| | | | |
|--|--|--|--|
| | <ul style="list-style-type: none"> • 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 <p>Microbiology:</p> <ul style="list-style-type: none"> • 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 <p>Imaging:</p> <ul style="list-style-type: none"> • Principles of diagnostic and interventional imaging including x-rays, ultrasound, CT, MRI. PET, radiounucleotide scanning | | |
|--|--|--|--|

| Module 2 | Common Surgical Conditions | | Assessment technique | Areas in which simulation should be used to develop relevant skills |
|-------------|--|---|---|--|
| Objective | <p>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.</p> <p>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.</p> | | <p>Certificate of successful completion of course</p> <p>MRCS</p> | |
| Topics | <p>Presenting symptoms or syndromes</p> <ul style="list-style-type: none"> • Abdominal pain • Abdominal swelling • Change in bowel habit • Gastrointestinal haemorrhage • Rectal bleeding • Dysphagia • Dyspepsia • Jaundice | <p>To include the following conditions</p> <ul style="list-style-type: none"> • 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 | | <p>Strongly recommended:</p> <p>Basic surgical skills</p> <p>Basic laparoscopic skills</p> <p>Fracture treatment</p> <p>(Cardiothoracic Surgery, Plastic Surgery: Anastomosis, Angiography, Vascular ultrasound, surgical approaches to fractures)</p> <p>Desirable</p> <p>Imaging interpretation</p> |
| | <p>Breast disease</p> <ul style="list-style-type: none"> • Breast lumps and nipple discharge • Acute Breast pain | <p>To include the following conditions</p> <ul style="list-style-type: none"> • Benign and malignant breast lumps • Mastitis and breast abscess | | |
| | <p>Peripheral vascular disease Presenting symptoms or syndrome</p> <ul style="list-style-type: none"> • Chronic and acute | <p>To include the following conditions</p> <ul style="list-style-type: none"> • Atherosclerotic arterial disease | | |

| | | | | |
|--|--|---|--|--|
| | limb ischaemia <ul style="list-style-type: none"> • Aneurismal disease • Transient ischaemic attacks • Varicose veins • Leg ulceration | <ul style="list-style-type: none"> • Embolic and thrombotic arterial disease • Venous insufficiency • Diabetic ulceration | | |
| | Cardiovascular and pulmonary disease | To include the following conditions <ul style="list-style-type: none"> • Coronary heart disease • Bronchial carcinoma • Obstructive airways disease • Space occupying lesions of the chest | | |
| | Genitourinary disease Presenting symptoms or syndrome <ul style="list-style-type: none"> • Loin pain • Haematuria • Lower urinary tract symptoms • Urinary retention • Renal failure • Scrotal swellings • Testicular pain | To include the following conditions <ul style="list-style-type: none"> • Genitourinary malignancy • Urinary calculus disease • Urinary tract infection • Benign prostatic hyperplasia • Obstructive uropathy | | |
| | Trauma and orthopaedics Presenting symptoms or syndrome <ul style="list-style-type: none"> • Traumatic limb and joint pain and deformity • Chronic limb and joint pain and deformity • Back pain | To include the following conditions <ul style="list-style-type: none"> • 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 | To include the following | | |

| | | | | |
|--|---|--|--|--|
| | and Neck Presenting symptoms or syndrome <ul style="list-style-type: none"> • Lumps in the neck • Epistaxis • Upper airway obstructions | conditions <ul style="list-style-type: none"> • Benign and malignant skin lesions • Benign and malignant lesions of the mouth and tongue | | |
| | Neurology and Neurosurgery Presenting symptoms or syndrome <ul style="list-style-type: none"> • Headache • Facial pain • Coma | To include the following conditions <ul style="list-style-type: none"> • Space occupying lesions from bleeding and tumour | | |
| | Endocrine Presenting symptoms or syndrome <ul style="list-style-type: none"> • Lumps in the neck • Acute endocrine crises | To include the following conditions <ul style="list-style-type: none"> • Thyroid and parathyroid disease • Adrenal gland disease • Diabetes | | |

| Module 3 | Basic surgical skills | Assessment technique | Areas in which simulation should be used to develop relevant skills |
|-----------------|--|-----------------------------|--|
| Objective | <ul style="list-style-type: none"> • 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 | WBA- PBA, CBD, DOPS | |

| | | | |
|---------------------------------|--|--|---|
| Knowledge | <p>Principles of safe surgery</p> <ul style="list-style-type: none"> • Preparation of the surgeon for surgery • Principles of hand washing, scrubbing and gowning • Immunisation protocols for surgeons and patients <p>Administration of local anaesthesia</p> <ul style="list-style-type: none"> • Choice of anaesthetic agent • Safe practise <p>Surgical wounds</p> <ul style="list-style-type: none"> • Classification of surgical wounds • Principles of wound management • Pathophysiology of wound healing • Scars and contractures • Incision of skin and subcutaneous tissue: <ul style="list-style-type: none"> ○ Langer's lines ○ Choice of instrument ○ Safe practice • Closure of skin and subcutaneous tissue: <ul style="list-style-type: none"> ○ Options for closure ○ Suture and needle choice • Safe practice • Knot tying <ul style="list-style-type: none"> ○ Range and choice of material for suture and ligation ○ Safe application of knots for surgical sutures and ligatures • Haemostasis: <ul style="list-style-type: none"> ○ Surgical techniques ○ Principles of diathermy • Tissue handling and retraction: <ul style="list-style-type: none"> ○ Choice of instruments • Biopsy techniques including fine needle aspiration cytology • Use of drains: <ul style="list-style-type: none"> ○ Indications ○ Types ○ Management/removal • Principles of anastomosis • Principles of surgical endoscopy | | <p>Strongly recommended: Basic surgical skills</p> <p>(Paediatric Surgery Strongly recommended: Basic suturing and wound management)</p> <p>(Cardiothoracic Surgery, Plastic Surgery Desirable: Anastomosis, Endoscopy)</p> |
| Clinical Skills | <p>4 Preparation of the surgeon for surgery</p> <ul style="list-style-type: none"> • Effective and safe hand washing, gloving and gowning • Administration of local anaesthesia • Accurate and safe administration of local anaesthetic agent <p>4 Preparation of a patient for surgery</p> <ul style="list-style-type: none"> • Creation of a sterile field • Antisepsis • Draping | | |
| Technical Skills and Procedures | <p>4 Preparation of the surgeon for surgery</p> <ul style="list-style-type: none"> • Effective and safe hand washing, gloving and gowning | | |

| | | | |
|--|--|--|--|
| | <p>4 Administration of local anaesthesia</p> <ul style="list-style-type: none"> • Accurate and safe administration of local anaesthetic agent <p>4 Incision of skin and subcutaneous tissue:</p> <ul style="list-style-type: none"> • Ability to use scalpel, diathermy and scissors <p>4 Closure of skin and subcutaneous tissue:</p> <ul style="list-style-type: none"> • Accurate and tension free apposition of wound edges <p>4 Knot tying:</p> <ul style="list-style-type: none"> • Single handed • Double handed • Instrument • Superficial • Deep <p>3 Haemostasis:</p> <ul style="list-style-type: none"> • Control of bleeding vessel (superficial) • Diathermy • Suture ligation • Tie ligation • Clip application • Transfixion suture <p>4 Tissue retraction:</p> <ul style="list-style-type: none"> • Tissue forceps • Placement of wound retractors <p>3 Use of drains:</p> <ul style="list-style-type: none"> • Insertion • Fixation • Removal <p>3 Tissue handling:</p> <ul style="list-style-type: none"> • Appropriate application of instruments and respect for tissues • Biopsy techniques <p>4 Skill as assistant:</p> <ul style="list-style-type: none"> • Anticipation of needs of surgeon when assisting | | |
|--|--|--|--|

| Module 4 | The assessment and management of the surgical patient | Assessment technique | Areas in which simulation should be used to develop relevant skills |
|-----------------|--|-----------------------------|--|
| Objective | To demonstrate the relevant knowledge, skills and attitudes in assessing the patient and manage the patient, and propose surgical or non-surgical management. | Examinations-MRCS | |
| 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 | | Strongly recommended: Life Support Critical Care ATLS / APLS |

| | | | |
|-----------------|--|--|---|
| | speciality then the principles of history taking and examination may be increasingly applied in that context. | | Desirable: Team working Human Factors |
| Clinical Skills | 4 Surgical history and examination (elective and emergency) 3 Construct a differential diagnosis 3 Plan investigations 3 Clinical decision making 3 Team working and planning 3 Case work up and evaluation; risk management 3 Active participation in clinical audit events 3 Appropriate prescribing 3 Taking consent for intermediate level intervention; emergency and elective 3 Written clinical communication skills 3 Interactive clinical communication skills: patients 3 Interactive clinical communication skills: colleagues | | |

| Module 5 | Peri-operative care | Assessment technique | Areas in which simulation should be used to develop relevant skills |
|-----------|--|---|---|
| Objective | <p>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 To prevent, recognise and manage delirium in the surgical patient within the appropriate legal framework in place across the UK (see footnote).</p> <p>Footnote The relevant legislation includes:</p> <ul style="list-style-type: none"> • Mental Capacity Act (2005) • Mental Health Act (1983 and 2007) • Adults with Incapacity (Scotland) Act | WBA Course test completion certificate | |

| | | | |
|-----------|--|--|---|
| | <p>(2000)</p> <ul style="list-style-type: none"> • Mental Health (Care and Treatment) (Scotland) Act (2003) • Adult Support and Protection (Scotland) Act (2007) | | |
| Knowledge | <p>Pre-operative assessment and management:</p> <ul style="list-style-type: none"> • 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 <p>Intraoperative care:</p> <ul style="list-style-type: none"> • 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 <p>Post-operative care:</p> <ul style="list-style-type: none"> • 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 <p>To assess and plan nutritional management</p> <ul style="list-style-type: none"> • Post-operative nutrition • Effects of malnutrition, both excess and depletion • Metabolic response to injury | | <p>Strongly recommended: Basic surgical skills Life Support Critical Care</p> <p>(Paediatric Surgery: Safe surgery)</p> <p>Desirable Human Factors Team-working</p> |

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| | <ul style="list-style-type: none"> • Methods of screening and assessment of nutritional status • Methods of enteral and parenteral nutrition <p>Haemostasis and Blood Products:</p> <ul style="list-style-type: none"> • 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 <p>Coagulation, deep vein thrombosis and embolism:</p> <ul style="list-style-type: none"> • 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, CT pulmonary 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 <p>Antibiotics:</p> <ul style="list-style-type: none"> • Common pathogens in surgical patients • Antibiotic sensitivities • Antibiotic side-effects • Principles of prophylaxis and treatment <p>Metabolic and endocrine disorders in relation perioperative management</p> <ul style="list-style-type: none"> • 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 | | |
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| | <p>Delirium</p> <ul style="list-style-type: none"> • Epidemiology and prognosis of delirium • Causes and clinical features of delirium • The impact of delirium on patient, family and carers | | |
| Clinical Skills | <p>3 Pre-operative assessment and management:</p> <ul style="list-style-type: none"> • 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 <p>3 Intra-operative care:</p> <ul style="list-style-type: none"> • Safe conduct of intraoperative care • Correct patient positioning • Avoidance of nerve injuries • Management of sharps injuries • Prevention of diathermy injury • Prevention of venous thrombosis <p>3 Post-operative care:</p> <ul style="list-style-type: none"> • 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 <p>3 Haemostasis and Blood Products:</p> <ul style="list-style-type: none"> • 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 <p>3 Coagulation, deep vein thrombosis and embolism</p> <ul style="list-style-type: none"> • 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 <p>3 Antibiotics:</p> <ul style="list-style-type: none"> • Appropriate prescription of antibiotics <p>3 Assess and plan preoperative nutritional</p> | | |

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| | <p>management</p> <ul style="list-style-type: none"> • Arrange access to suitable artificial nutritional support, preferably via a nutrition team including Dietary supplements, Enteral nutrition and Parenteral nutrition <p>3 Metabolic and endocrine disorders</p> <ul style="list-style-type: none"> • 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 <p>Delirium</p> <p>3 Assessment of cognitive impairment seeking to differentiate dementia from delirium, with the knowledge that delirium is common in people with dementia</p> <p>3 Management of patients with delirium including addressing triggers and using non-pharmacological and pharmacological methods where appropriate</p> <p>3 Explanation of delirium to patients and advocates</p> | | |
| Technical Skills and Procedures | <p>2 Central venous line insertion</p> <p>4 Urethral catheterisation</p> | | Desirable (Paediatric Surgery Strongly recommended) |

| Module 6 | Assessment and management of patients with trauma (including the multiply injured patient) | Assessment technique | Areas in which simulation should be used to develop relevant skills |
|-----------|--|------------------------------------|---|
| Objective | <p>Assess and initiate management of patients with chest trauma</p> <ul style="list-style-type: none"> • 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 | WBA Course test and certificate | |

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| | <ul style="list-style-type: none"> • 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 <p>It is expected that trainees will be able to show evidence of competence in the management of trauma (ATLS / APLS certificate or equivalent).</p> | | |
| Knowledge | <p>General</p> <ul style="list-style-type: none"> • Scoring systems for assessment of the injured patient • Major incident triage • Differences In children <p>Shock</p> <ul style="list-style-type: none"> • Pathogenesis of shock • Shock and cardiovascular physiology • Metabolic response to injury • Adult respiratory distress syndrome • Indications for using uncross matched blood <p>Wounds and soft tissue injuries</p> <ul style="list-style-type: none"> • 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 <p>Burns</p> <ul style="list-style-type: none"> • Classification of burns • Principle of management of burns <p>Fractures</p> <ul style="list-style-type: none"> • Classification of fractures • Pathophysiology of fractures • Principles of management of fractures • Complications of fractures • Joint injuries <p>Organ specific trauma</p> <ul style="list-style-type: none"> • Pathophysiology of thoracic trauma • Pneumothorax | | <p>Strongly recommended: Life Support Critical Care Wound management ATLS / APLS</p> <p>Desirable: Team-working Human Factors Trauma management</p> |

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|---------------------------------|---|--|-----------|
| | <ul style="list-style-type: none"> • 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 | <p>General</p> <p>4 History and examination</p> <p>3 Investigation</p> <p>3 Referral to appropriate surgical subspecialties</p> <p>4 Resuscitation and early management of patient who has sustained thoracic, head, spinal, abdominal or limb injury according to ATLS and APLS guidelines</p> <p>4 Resuscitation and early management of the multiply injured patient</p> <p>3 Specific problems</p> <ul style="list-style-type: none"> • 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 | <p>2 Central venous line insertion</p> <p>3 Chest drain insertion</p> <p>2 Diagnostic peritoneal lavage</p> <p>4 Urethral catheterisation</p> <p>2 Suprapubic catheterisation</p> | | Desirable |

| Module 7 | Surgical care of the Paediatric patient | Assessment technique | Areas in which simulation should be used to develop relevant skills |
|-----------------|--|-----------------------------|--|
| Objective | <p>To assess and manage children with surgical problems, understanding the similarities and differences from adult surgical patients</p> <p>To understand the issues of child protection and to take action as appropriate</p> | WBA MRCS | |
| Knowledge | <ul style="list-style-type: none"> • Physiological and metabolic response to injury and surgery | | Strongly recommended: Critical Care Child protection |

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|-----------------|--|--|---------------------------|
| | <ul style="list-style-type: none"> • 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 | | Desirable Team-working |
| Clinical Skills | <p>3 History and examination of the neonatal surgical patient</p> <p>3 History and examination of paediatric surgical patient</p> <p>3 Assessment of respiratory and cardiovascular status</p> <p>3 Undertake consent for surgical procedures (appropriate to the level of training) in paediatric patients</p> | | |

| Module 8 | Management of the dying patient | Assessment technique | Areas in which simulation should be used to develop relevant skills |
|-----------------|---|-----------------------------|--|
| Objective | <p>Ability to manage the dying patient appropriately.</p> <p>To understand consent and ethical issues in patients certified DNAR (do not attempt resuscitation)</p> <p>Palliative Care: Good management of the dying patient in consultation with the palliative care team.</p> | MRCS | |
| Knowledge | <p>Palliative Care:</p> <ul style="list-style-type: none"> Care of the terminally ill Appropriate use of analgesia, antiemetics and laxatives <p>Principles of organ donation:</p> <ul style="list-style-type: none"> Circumstances in which consideration of organ donation is appropriate Principles of brain death <p>Understanding the role of the coroner and the certification of death</p> | | <p>Desirable</p> <p>Team-working</p> <p>Human Factors</p> |
| Clinical Skills | <p>3 Palliative Care:</p> <ul style="list-style-type: none"> Symptom control in the terminally ill patient <p>3 Principles of organ donation:</p> <ul style="list-style-type: none"> Assessment of brain stem death Certification of death | | <p>(Paediatric Surgery Strongly recommended: Ethical issues Palliative care Communication)</p> |

| Module 9 | Organ and Tissue transplantation | Assessment technique | Areas in which simulation should be used to develop relevant skills |
|-----------------|---|-----------------------------|--|
| Objective | To understand the principles of organ and tissue transplantation | MRCS | |
| Knowledge | <ul style="list-style-type: none"> Principles of transplant immunology including tissue typing, acute, hyperacute and chronic rejection Principles of immunosuppression Tissue donation and procurement Indications for whole organ transplantation | | |

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| Module 10 | Health Promotion |
| General Aspects | |
| Objective | This syllabus module aims to enable all surgical trainees to develop the competencies necessary to support patients in caring for themselves, to empower them to improve and maintain their own health. |
| Knowledge | <ul style="list-style-type: none"> • Damaging health and social issues such as excessive alcohol consumption, obesity, smoking and illicit drugs and the harmful effects they have on health • The connection between mental health and physical health • The importance of health education for promoting self-care for patients |
| Clinical Skills | <p>3 Modification of explanations to match the intellectual, social and cultural background of individual patients</p> <p>3 Patient centred care</p> <p>4 Identification and utilisation of opportunities to promote health</p> |
| Reference to other relevant syllabus items | <ul style="list-style-type: none"> • Nutrition (Module 5, Perioperative Care) • Drugs and alcohol (Module 1, Pharmacology) • Screening (Module 1, Pathology) • Child protection (Module 7, Surgical Care of the Paediatric Patient) |
| Obesity | |
| Objective | <ul style="list-style-type: none"> • Recognise the health risks posed by obesity including an increased incidence of coronary heart disease, type 2 diabetes, hypertension, stroke, and some major cancers. • Assess and explain the higher risks for obese individuals undergoing surgery. |
| Knowledge | <ul style="list-style-type: none"> • Classification of excess body mass • Social, psychological and environmental factors that underpin obesity • Physiological and metabolic effects of obesity on the surgical patient • Available treatments for obesity including diet, exercise, medication and surgery |
| Clinical Skills | <p>4 The ability to treat patients who are obese in a supportive and sensitive manner</p> <p>3 Management of cardiovascular, respiratory and metabolic complications in patients with obesity undergoing surgery</p> <p>2 Provide advice and guidance about weight loss to overweight and obese patients within the context of a multidisciplinary team</p> |
| Dementia | |

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| Objective | <ul style="list-style-type: none"> • Adapt surgical treatment in order to deliver high quality and person-centred care for patients with dementia • Apply the appropriate legal framework to the treatment of patients with cognitive impairment |
| Knowledge | <ul style="list-style-type: none"> • Clinical features of dementia and the distinction between it and delirium • The impact of dementia on patient, family and carers • Principles and key provisions of the relevant legislation regarding the safeguarding of vulnerable adults across the UK (see footnote). |
| Clinical Skills | <p>3 Recognises cognitive impairment and appropriately refers 2 Management of surgical patients in the context of their dementia 4 A range of techniques and strategies to communicate effectively with people with dementia and their carers/families 4 Assessment of capacity, involvement of advocates and documentation of consent and best interests in accordance with current legislation in place across the nations of the UK (see footnote).</p> <p>Footnote The relevant legislation includes:</p> <ul style="list-style-type: none"> • Mental Capacity Act (2005) • Mental Health Act (1983 and 2007) • Adults with Incapacity (Scotland) Act (2000) • Mental Health (Care and Treatment) (Scotland) Act (2003) • Adult Support and Protection (Scotland) Act (2007). |
| Exercise and physical fitness | |
| Objective | <ul style="list-style-type: none"> • Promote the use of exercise in the prevention and management of long term chronic conditions such as coronary heart disease, diabetes, hypertension, obesity, cancer, osteoporosis, peripheral vascular disease and depression and the promotion of health and well being |
| Knowledge | <ul style="list-style-type: none"> • Physical inactivity as an independent risk factor for ill health and obesity • Relationship between physical exercise programmes and healthy eating and smoking cessation programmes • Government behaviour change programmes such as 'Let's Get Moving' and 'Shift into Sports' |
| Clinical Skills | <p>4 Utilisation of all patient interactions as opportunities for health and fitness promotion 4 Modification of advice on physical exercise to the specific requirements of individual patients</p> |

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 cholecystitis, 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 | | |
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| Objective | <p>Provide experience in the early care of patients with common general surgery problems:</p> <ul style="list-style-type: none"> • 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. <p>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</p> | Areas in which simulation should be used to develop relevant skills |
| Knowledge | <p>Basic science relevant to the management of patients with the common elective and emergency problems, (including anatomy, physiology, pharmacology, and radiology)</p> <p>Clinical presentation and pathology of common elective and emergency conditions.</p> <p>Principles of management of patients presenting with the common elective and emergency problems</p> | |
| Clinical Skills | <p>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.</p> <p>3 Management of fluid balance and nutritional support; postoperative analgesia; thromboprophylaxis; wound management.</p> <p>3 Assessment and planning investigation of new and follow-up patients in outpatient clinics.</p> <p>3 Assessment and management of patients with emergency conditions including primary and secondary survey and determining appropriate investigations.</p> | |
| Technical Skills and Procedures | <p>3 Chest drain insertion</p> <p>3 Central venous line insertion</p> <p>3 Suprapubic catheter insertion</p> <p>3 Needle biopsy including Fine needle aspiration</p> <p>3 Rigid sigmoidoscopy</p> <p>4 Excision biopsy of benign skin or subcutaneous lesions</p> <p>4 In growing toenail – avulsion / wedge resection / phenolisaton</p> <p>3 Excision biopsy malignant skin lesion</p> <p>3 Outpatient treatment of haemorrhoids</p> <p>2 Breast lump excision</p> <p>2 Induction of pneumoperitoneum for laparoscopy with port placement</p> | Strongly recommended: |

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| | <ul style="list-style-type: none">2 Open and close midline laparotomy incision3 Appendectomy2 Inguinal hernia repair2 Primary abdominal wall hernia repair2 Primary varicose vein surgery | |
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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 & Final Stage Syllabus

ELECTIVE GENERAL SURGERY

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| LESIONS OF SKIN AND SUBCUTANEOUS TISSUES | | | | |
| OBJECTIVE | | | | |
| Recognise and appropriately manage malignant skin lesions. | | | | |
| Basal cell carcinoma: Diagnose and treat appropriately small basal cell carcinomas. | | | | |
| Malignant melanoma: Diagnose malignant melanoma and refer appropriately. | | | | |
| Squamous cell carcinoma: Diagnose squamous cell carcinoma and refer appropriately if large | | | | |
| 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 | |
| Squamous cell carcinoma: Assess skin lesion including incisional biopsy | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Basal cell carcinoma:Malignant skin lesion-excision biopsy (small) | 4 | 4 | 4 | Strongly recommended: |

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| Malignant melanoma: Malignant skin lesion-excision biopsy melanoma (small) | 3 | 4 | 4 | |
| Squamous cell carcinoma: Malignant skin lesion-excision biopsy (small) | 4 | 4 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| 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. | | | | |
| KNOWLEDGE | | | | |
| Anatomy of the abdominal wall | 4 | 4 | 4 | |
| Pathology of the acute and chronic conditions; Haematoma, Sarcoma, Desmoid Tumours | 4 | 4 | 4 | |
| Principles of management of desmoid tumours and sarcomas | 2 | 3 | 3 | |
| CLINICAL SKILLS | | | | |
| Ability to determine that a swelling is in the abdominal wall | 3 | 4 | 4 | |
| Initiate appropriate investigation | 2 | 3 | 4 | |
| TREATMENT | | | | |
| Conservative management of haematoma | 3 | 4 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| 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. | | | | |
| 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 | Desirable |
| Liver biopsy | 2 | 3 | 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 | Strongly recommended: |
| Liver biopsy | 2 | 4 | 4 | Strongly recommended: |
| Lymph node biopsy-groin, axilla | 3 | 4 | 4 | |
| Conditions involving the spleen: | | | | |
| Splenectomy | 2 | 3 | 3 | |

| | ST4 | ST 6 | ST 8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|------|------|---|
| 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 | | | | |
| 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 | 2 | 3 | 4 | |
| Prophylaxis: | | | | |
| Detailed knowledge of methods of prevention, mechanical and pharmacological | 4 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| Coagulation: Recognition of patients at risk | 4 | 4 | 4 | |
| Diagnosis: Awareness of symptoms and signs associated with pulmonary embolism and DVT | 4 | 4 | 4 | |
| Treatment: Initiate and monitor treatment | 4 | 4 | 4 | |
| Prophylaxis: Awareness at all times of the importance of prophylaxis | 4 | 4 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| 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 | | | | |
| 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: | | | | |
| Modes of inheritance | 2 | 3 | 4 | |
| Genetic Testing | 2 | 3 | 4 | |
| Screening | 2 | 3 | 4 | |
| Prophylactic intervention | 2 | 3 | 3 | |
| Therapeutic intervention | 2 | 3 | 3 | |
| Ethics | 2 | 3 | 4 | |

| | ST4 | ST 6 | ST 8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|------|------|---|
| ONCOLOGY FOR SURGEONS | | | | |
| OBJECTIVE | | | | |
| 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 antigenicity; immune mediated antitumour cytotoxicity; effects of cytokines on tumours; effects of tumours on antitumour immune mechanisms; potential adverse effects of surgery, surgery-related events (e.g. blood transfusion) on immunologic responses | 2 | 3 | 4 | |
| 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 | 2 | 3 | 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 evaluation | | | | |
| The conduct of clinical studies | 2 | 3 | 4 | |
| 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 | Strongly recommended: |
| Lymph node biopsy-groin,axilla | 3 | 4 | 4 | |
| Central venous line insertion | 4 | 4 | 4 | Strongly recommended: |
| Laparotomy/laparoscopy | 2 | 3 | 4 | Strongly recommended: |

ELECTIVE GENERAL SURGERY

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ELECTIVE HERNIA | | | | |
| OBJECTIVE | | | | |
| Diagnosis + management, including operative management of primary and recurrent abdominal wall hernia | | | | |
| KNOWLEDGE | | | | |
| Anatomy of inguinal region including inguinal canal, femoral canal, abdominal wall and related structures e.g. adjacent retroperitoneum 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 | | | | |
| 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 | 3 | |
| Hernia repair-inguinal | 3 | 4 | 4 | Strongly recommended: |
| Hernia repair-inguinal recurrent | 2 | 3 | 4 | |
| Hernia repair-umbilical/paraumbilical | 3 | 4 | 4 | Strongly recommended: |
| Hernia repair-epigastric | 3 | 4 | 4 | Strongly recommended: |

ELECTIVE GENERAL SURGERY

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| SURGICAL NUTRITION | | | | |
| OBJECTIVES | | | | |
| Recognise the need for artificial nutritional support, assess whether this is appropriate and manage treatment with enteral or parenteral nutrition, in partnership with nutritional support team or as a member | | | | |
| Specialist nutrition - Recognise the need for artificial nutritional support, assess whether this is appropriate and manage treatment with enteral or parenteral nutrition as leader or member of the nutritional support team | | | | |
| KNOWLEDGE | | | | |
| Methods of nutritional screening and assessment | 3 | 3 | 4 | |
| Physiology of the GI tract | 4 | 4 | 4 | |
| Pathophysiology of the GI tract including short bowel syndrome, high output stoma, enterocutaneous fistulae, pancreatic insufficiency | 2 | 3 | 4 | |
| Consequences of obesity and medical and surgical options for management, including complications | 1 | 2 | 3 | |
| Causes and consequences of nutritional deficiency, including eating disorders | 2 | 2 | 3 | |
| Body composition and metabolic requirements in health and disease | 3 | 4 | 4 | |
| Indications for nutritional intervention | 3 | 3 | 4 | |
| Indications + options for nutritional support : Enteral vs parenteral | 3 | 3 | 4 | |
| Complications of enteral and parenteral nutrition and their management | 2 | 3 | 4 | |
| Refeeding syndrome | 2 | 3 | 4 | |
| Causes, diagnosis, and management of enterocutaneous fistulae | 2 | 3 | 4 | |
| Appropriate composition and skills in a nutrition support team | 2 | 3 | 4 | |
| Legal and ethical aspects of nutritional support | 2 | 3 | 4 | |
| CLINICAL SKILLS | | | | |
| Assessment of GI tract function, in particular of absorption | 3 | 3 | 3 | |
| Assessment of nutritional status, including use of screening tools | 2 | 3 | 3 | |
| Assessment of causes of weight loss, including malabsorption and psychological issues | 2 | 2 | 3 | |
| Decision making about appropriate means of artificial nutritional support | 2 | 3 | 3 | |
| Assessment of patient for enteral nutrition; choice of tube(NG; NJ; PEG PEJ; jejunostomy) and feed type/amount | 2 | 2 | 3 | |
| Assessment of patient for parenteral nutrition; choice of intravenous catheter and feed type | 2 | 2 | 3 | |

| | | | | |
|--|---|---|---|-----------------------|
| Prescription of appropriate enteral or parenteral feed | 2 | 2 | 3 | |
| Care of the patient on enteral and parenteral support, monitoring of outcome and management of complications | 2 | 2 | 2 | |
| Assessment of obesity and appropriate referral | 2 | 2 | 2 | |
| TECHNICAL SKILLS | | | | |
| Insertion of nasogastric tube and confirmation of position | 3 | 4 | 4 | Strongly recommended: |
| Insertion of nasojejunal tube, using bedside imager, radiological screening or endoscopy | 2 | 2 | 3 | |
| PEG tube insertion / replacement, including jejunal extensions | 2 | 2 | 2 | |
| Formation of feeding enterostomy (open / lap) | 2 | 2 | 3 | |
| Vascular access for parenteral feeding, including peripheral access, PICC and tunnelled or cuffed central lines or implantable ports | 2 | 2 | 2 | |

ELECTIVE GENERAL SURGERY

| | ST 4 | ST 6 | ST 8 | Areas in which simulatio n should be used to develop relevant skills |
|--|---------|---------|---------|--|
| 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 | | | | |
| 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 | 2 | 3 | 4 | |
| Relevant guidelines for disease management | 2 | 3 | 4 | |
| CLINICAL SKILLS | | | | |
| Individual patient assessment: | | | | Desirable |
| Focused history taking and examination. | 3 | 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 | |

ELECTIVE GENERAL SURGERY

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| LAPAROSCOPIC SURGERY | | | | |
| Objective | | | | |
| To understand the principles of laparoscopic surgery including technical aspects and common complications | | | | |
| 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 | Strongly recommended: |
| Diagnostic laparoscopy | 2 | 3 | 4 | Strongly recommended: |
| Laparoscopic suturing and knotting | 2 | 3 | 4 | |
| Control of laparoscopic bleeding | 2 | 3 | 4 | |

| | ST 4 | ST 6 | ST 8 | Areas in which simulation should be used to develop relevant skills |
|--|---------|---------|---------|--|
| SUPERFICIAL SEPSIS INCLUDING NECROTISING INFECTIONS | | | | |
| OBJECTIVE | | | | |
| Diagnosis and basic management of superficial sepsis, gas gangrene and other necrotising infections. | | | | |
| 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 of diabetes periop | 4 | 4 | 4 | |
| Superficial abscess History and Examination | 4 | 4 | 4 | |
| Breast abscess - Arrange imaging modalities | 4 | 4 | 4 | |
| Cellulitis | | | | |
| History and examination | 4 | 4 | 4 | |
| IV therapy | 4 | 4 | 4 | |
| Infected ingrowing toenail / paronychia | 4 | 4 | 4 | |
| Warning signs of necrotising fasciitis | 4 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Infected sebaceous cyst / carbuncle | 4 | 4 | 4 | Strongly |

| | | | | |
|--|---|---|---|-----------------------|
| EMERGENCY GENERAL SURGERY | 4 | 4 | 4 | recommended: |
| Benign skin or subcutaneous lesion - excision biopsy | 4 | 4 | 4 | |
| Aspiration of breast abscess | 3 | 4 | 4 | Strongly recommended: |
| Infected ingrowing toenail / paronychia | | | | |
| Nail avulsion / wedge resection / phenolisation | 4 | 4 | 4 | |
| Radical excisional surgery | | | | |
| Fournier's gangrene, necrotising fasciitis, gas gangrene, debridement, diabetic foot | 2 | 3 | 4 | Desirable |

| | ST 4 | ST 6 | ST 8 | Areas in which simulation should be used to develop relevant skills |
|---|---------|---------|---------|---|
| PERITONITIS / ACUTE ABDOMEN (combined) | | | | |
| OBJECTIVE | | | | |
| Recognition and management of peritonitis. | | | | |
| KNOWLEDGE | | | | |
| Anatomy of abdomen and pelvis | 4 | 4 | 4 | |
| Aetiology | 4 | 4 | 4 | |
| Differential diagnosis | 4 | 4 | 4 | |
| Pathophysiology of shock | 4 | 4 | 4 | |
| Pathophysiology of peritonitis and sepsis - generalised and intraperitoneal, septic shock | 4 | 4 | 4 | |
| Pathophysiology of obstruction / strangulation | 4 | 4 | 4 | |
| Conditions which do not require surgery | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and examination | 4 | 4 | 4 | Desirable |
| Recognition of severity of disease | 4 | 4 | 4 | |
| Investigation | 4 | 4 | 4 | |
| Resuscitation, 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 | |
| Indication for and timing of intervention | 3 | 3 | 4 | |
| Recognition and management of complications | 3 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Central line insertion | 4 | 4 | 4 | Strongly recommended: |
| Laparotomy / laparoscopy | 2 | 3 | 4 | Strongly recommended: |
| Gastro / duodenal - perforated peptic ulcer closure | 3 | 4 | 4 | |
| Hartmann's procedure | 2 | 3 | 4 | |
| Cholecystectomy | 2 | 3 | 4 | Strongly recommended: |
| Cholecystostomy | 2 | 3 | 4 | Strongly recommended |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ACUTE INTESTINAL OBSTRUCTION | | | | |
| OBJECTIVE | | | | |
| Recognise and manage most cases of intestinal obstruction | | | | |
| 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 | 4 | 4 | 4 | |
| Nutritional support | 3 | 3 | 4 | |
| Differentiate between mechanical obstruction and pseudo-obstruction | 2 | 4 | 4 | |
| Ability to perform emergency laparotomy | 2 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Central line insertion | 4 | 4 | 4 | Strongly recommended: |
| Laparotomy and division of adhesions | 2 | 3 | 4 | |
| Small bowel resection | 2 | 3 | 4 | Strongly recommended: |
| 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 | 3 | 4 | |
| Ileostomy-construction | 2 | 3 | 4 | |

EMERGENCY GENERAL SURGERY

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| ACUTE APPENDICITIS | | | | |
| OBJECTIVE | | | | |
| Recognition and management of acute appendicitis | | | | |
| 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 | Desirable |
| Investigation | 4 | 4 | 4 | |
| Resuscitation | 4 | 4 | 4 | |
| Postoperative management | 4 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Appendicectomy - open / lap | 3 | 4 | 4 | Strongly recommended: |

| | ST 4 | ST 6 | ST 8 | Areas in which simulation should be used to develop relevant skills |
|--|---------|---------|---------|--|
| STRANGULATED HERNIA | | | | |
| OBJECTIVES | | | | |
| Recognise and treat most common strangulated hernias | | | | |
| Strangulated inguinal hernia: Recognise and treat strangulated inguinal hernia. | | | | |
| Strangulated femoral hernia: Recognise and treat strangulated femoral hernia | | | | |
| Strangulated incisional hernia: Recognise and treat strangulated incisional hernia | | | | |
| Strangulated internal hernia: Recognise and treat strangulated hernia. | | | | |
| KNOWLEDGE | | | | |
| Strangulated inguinal hernia | | | | |
| Anatomy - Inguinal and femoral canal | 3 | 4 | 4 | |
| Anatomy - Abdominal wall, retroperitoneum, soft tissues | 3 | 4 | 4 | |
| Pathophysiology | 4 | 4 | 4 | |
| Postoperative complications | 3 | 4 | 4 | |
| Strangulated femoral hernia | | | | |
| Anatomy - Inguinal and femoral canal | 3 | 4 | 4 | |
| Anatomy - Abdominal wall, retroperitoneum, soft tissues | 3 | 4 | 4 | |
| Pathophysiology | 4 | 4 | 4 | |
| Postoperative complications | 3 | 4 | 4 | |
| Strangulated incisional hernia | | | | |
| Anatomy of abdominal wall | 3 | 4 | 4 | |
| Pathophysiology | 4 | 4 | 4 | |
| Postoperative complications | 3 | 4 | 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 | 4 | 4 | 4 | |
| Femoral | 4 | 4 | 4 | |
| Incisional | 4 | 4 | 4 | |
| Internal | 4 | 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 | Strongly recommended: |
| Repair - inguinal hernia | 2 | 4 | 4 | Strongly recommended: |
| Repair - femoral hernia | 2 | 3 | 4 | |
| Repair - incisional hernia | 2 | 3 | 4 | |
| Repair internal hernia | 2 | 3 | 4 | |

| | ST 4 | ST 6 | ST 8 | Areas in which simulation should be used to develop relevant skills |
|---|---------|---------|---------|--|
| ACUTE GYNAECOLOGICAL DISEASE | | | | |
| 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 - referral 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 | 3 | 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 | 4 | 4 | 4 | |
| CT scan / tumour markers | 4 | 4 | 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 | 4 | |
| Perform emergency laparotomy | 2 | 2 | 4 | |
| Intra-abdominal haemorrhage of gynaecological origin | | | | |
| History and examination | 4 | 4 | 4 | |
| Organise pelvic ultrasound and pregnancy test | 4 | 4 | 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 | 2 | 3 | 4 | Strongly recommend ed: |
| Hartmann's procedure | 2 | 3 | 4 | |
| Sigmoid colectomy | 2 | 3 | 4 | |

EMERGENCY GENERAL SURGERY

| | ST 4 | ST 6 | ST 8 | Areas in which simulation should be used to develop relevant skills |
|--|---------|---------|---------|---|
| GASTROINTESTINAL BLEEDING (see also acute gastric 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 | | | | |
| 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 | | | | |
| 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 | 2 | 3 | 4 | |
| CLINICAL SKILLS | | | | |
| Blood loss and hypotension | | | | |
| Resuscitation of hypotensive patient | 4 | 4 | 4 | Desirable |
| 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 | 3 | 4 | 4 | |
| Rebleeding and postoperative problems - early recognition | 3 | 4 | 4 | |
| Treatment of complications | 2 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Diagnostic gastroscopy | 1 | 1 | 1 | |
| Flexible sigmoidoscopy | 1 | 1 | 1 | |

| | ST 4 | ST 6 | ST 8 | Areas in which simulatio n should be used to develop relevant skills |
|---|---------|---------|---------|--|
| COMPLICATIONS OF ABDOMINAL SURGERY | | | | |
| OBJECTIVE | | | | |
| Recognition and management of septic complications of GI surgery | | | | |
| Recognition and management of obstructive complications of GI surgery | | | | |
| Recognition and management of bleeding complications of GI surgery | | | | |
| KNOWLEDGE | | | | |
| Risk factors for major complications and the differential risk of further interventions | 2 | 3 | 4 | |
| Septic complications of GI anastomosis | 2 | 3 | 4 | |
| Abdominal abscesses after GI surgery | 2 | 3 | 4 | |
| Bowel obstruction after GI surgery | 2 | 3 | 4 | |
| Physiological and haematological consequences of post op bleeding | 2 | 3 | 4 | |
| Biliary leakage after cholecystectomy | 2 | 3 | 4 | |
| Intestinal fistula | 2 | 3 | 4 | |
| Surgeons role in multiple organ failure | 2 | 3 | 4 | |
| CLINICAL SKILLS | | | | |
| Logical and prioritised approach to complications | 3 | 4 | 4 | |
| Assessment of the post operative GI surgical patient with emergency complications | 2 | 3 | 4 | |
| Assessment of the patient with multiple organ failure from a surgical perspective | 1 | 3 | 4 | |
| Interpretation of Investigations | 2 | 3 | 4 | |
| Management decisions for early and late complications of GI surgery presenting as emergencies | 2 | 3 | 4 | |
| Involve specialists and colleagues appropriately, including referral for embolisation | 2 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Re-laparotomy | 1 | 2 | 3 | |
| Damage control laparotomy for sepsis / MOF | 1 | 2 | 3 | |
| Laparotomy for identification and control of post op bleeding, including packing | 1 | 3 | 4 | |
| Surgery for anastomotic leak (take down, defunction, drain) | 2 | 3 | 4 | |
| Laparostomy / open abdomen | 1 | 2 | 3 | |
| Surgical tube gastrostomy (Stamm etc) | 2 | 3 | 4 | |

| | ST 4 | ST 6 | ST 8 | Areas in which simulation should be used to develop relevant skills |
|--|---------|---------|---------|--|
| ABDOMINAL PAIN IN CHILDHOOD | | | | |
| OBJECTIVES | | | | |
| The ability to assess and manage a child with abdominal pain including appendicectomy. | | | | |
| 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 | Strongly recommend ed: |
| Laparotomy/laparoscopy | 2 | 3 | 4 | |

| | ST 4 | ST 6 | ST 8 | Areas in which simulati on should be used to develop relevant skills |
|---|---------|---------|---------|---|
| INTUSSUSCEPTION | | | | |
| Objective | | | | |
| The ability to assess and manage a child with intussusception including referral for radiological or surgical reduction | | | | |
| 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 treatment plan | 2 | 3 | 4 | |
| | | | | |
| Treatment Plan | | | | |
| Ability to communicate with all relevant groups, including referral for specialist treatment | 2 | 3 | 4 | |
| Reduction of intussusception | 1 | 1 | 1 | |

| | ST 4 | ST 6 | ST 8 | Areas in which simulatio n should be used to develop relevant skills |
|--|---------|---------|---------|--|
| ACUTE GROIN CONDITION | | | | |
| Objective | | | | |
| The ability to assess and manage a child with incarcerated inguinal hernia | | | | |
| The ability to assess and manage a child with an acute scrotal condition | | | | |
| Knowledge | | | | |
| Inguinal Hernia | | | | |
| Developmental anatomy | 2 | 3 | 4 | |
| Natural history | 1 | 3 | 4 | |
| Indications for and outcomes of surgery | 1 | 3 | 4 | |
| Acute scrotum | | | | |
| Natural history | 2 | 3 | 4 | |
| Place of conservative management | 1 | 3 | 4 | |
| Indications for and outcomes of surgery | 1 | 3 | 4 | |
| CLINICAL SKILLS | | | | |
| Inguinal Hernia | | | | |
| Ability to assess child and reach appropriate diagnosis | 1 | 3 | 4 | |
| Ability to form a treatment plan and refer on when necessary | 1 | 3 | 4 | |
| Acute scrotum | | | | |
| Ability to assess child and reach appropriate diagnosis | 1 | 3 | 4 | |
| Ability to form a treatment plan and refer on when necessary | 1 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Inguinal hernia | | | | |
| Inguinal hernia (not neonatal) operation | 1 | 2 | 2 | |
| Acute scrotum | | | | |
| Operation for testicular torsion | 2 | 3 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ACUTE DYSPHAGIA | | | | |
| OBJECTIVES | | | | |
| Assessment and initial management of patients presenting with acute dysphagia | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy | | | | |
| Oesophagus and levels of constriction | 2 | 4 | 4 | |
| Aetiology | | | | |
| Carcinoma, peptic stricture, achalasia | 2 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 2 | 4 | 4 | |
| Investigation - Endoscopy; CT | 4 | 4 | 4 | Desirable |
| Initial symptomatic management | 2 | 4 | 4 | |
| Referral to specialist unit for definitive management | 2 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 1 | 1 | 1 | |
| Endoscopic palliation incl stenting | 1 | 1 | 1 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| OESOPHAGEAL VARICES | | | | |
| OBJECTIVES | | | | |
| Assessment, initial and emergency management of patients presenting with oesophageal varices | | | | |
| 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 | |
| Medical treatment | 2 | 3 | 4 | |
| Porto-systemic shunt - TIPSS | 2 | 3 | 4 | |
| Indications for surgery | 3 | 4 | 4 | |
| Complications | | | | |
| Child's classification of liver disease | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 3 | 4 | 4 | |
| Investigation - Endoscopic assessment | 2 | 3 | 4 | Desirable |
| Resuscitation | 4 | 4 | 4 | |
| Decision making | 2 | 3 | 4 | |
| Non-operative treatment - sclerotherapy / banding | 2 | 3 | 4 | |
| Referral to specialist unit for definitive management | 2 | 3 | 4 | |
| Operative options | | | | |
| Porto-caval shunt; Oesophageal transection | 2 | 3 | 3 | |
| Postoperative management | 2 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 1 | 1 | 1 | |
| Variceal injection | 1 | 1 | 1 | |
| Balloon tamponade | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| BOERHAAVE'S | | | | |
| OBJECTIVES | | | | |
| Assessment and initial management of patients presenting with Boerhaave's | | | | |
| 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 | Desirable |
| Decision making | 2 | 3 | 4 | |
| Non-operative treatment | 2 | 3 | 4 | |
| Referral to specialist unit for definitive management | 2 | 3 | 4 | |
| Interventional options - primary repair, nutritional support | 2 | 3 | 3 | |
| Postoperative management | 2 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 1 | 1 | 1 | |
| Thoracotomy + non-resectional management | 1 | 2 | 2 | |
| Oesophagectomy | 1 | 2 | 2 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| IATROGENIC OESOPHAGEAL PERFORATION | | | | |
| OBJECTIVES | | | | |
| Assessment and initial management of patients presenting with iatrogenic oesophageal perforation | | | | |
| 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 - Mediastinitis | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 3 | 4 | 4 | |
| Investigation | 3 | 3 | 4 | Desirable |
| Decision making | 2 | 3 | 4 | |
| Non-operative treatment - Pleural drainage; antibiotics; nutritional support | 2 | 3 | 4 | |
| Interventional options | 2 | 3 | 4 | |
| Referral to specialist unit for definitive management | 2 | 3 | 4 | |
| Postoperative management | 3 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 1 | 1 | 1 | |
| Endoscopic interventions incl stent | 1 | 1 | 1 | |
| Thoracotomy + lavage | 1 | 2 | 2 | |
| Oesophagectomy | 1 | 2 | 2 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ACUTE GASTRIC DILATION | | | | |
| OBJECTIVES | | | | |
| Assessment, initial and emergency management of patients presenting with acute gastric dilatation | | | | |
| 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 | Desirable |
| Resuscitation | 4 | 4 | 4 | |
| Decision making | 2 | 4 | 4 | |
| Non-operative treatment NG aspiration | 3 | 4 | 4 | |
| Referral to specialist unit for definitive management | 2 | 3 | 4 | |
| Operative options | 3 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| NG tube insertion | 3 | 4 | 4 | |
| Endoscopy | 1 | 1 | 1 | |
| Gastrectomy | 1 | 2 | 2 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ACUTE GASTRIC HAEMORRHAGE | | | | |
| OBJECTIVES | | | | |
| Assessment, initial and emergency management of patients presenting with upper GI haemorrhage | | | | |
| KNOWLEDGE | | | | |
| Anatomy | 4 | 4 | 4 | |
| Pathophysiology | 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 | |
| Referral to specialist unit for definitive management | 2 | 3 | 4 | |
| Non-operative treatment - sclerotherapy | 3 | 4 | 4 | |
| Operative options | 3 | 4 | 4 | |
| Postoperative management - rebleeding | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 1 | 1 | 1 | |
| Endoscopic therapy | 1 | 1 | 1 | |
| Gastrotomy + non-resectional treatment - histology | 2 | 3 | 4 | |
| Partial gastrectomy | 1 | 2 | 2 | |
| Total gastrectomy | 1 | 2 | 2 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ACUTE 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 perf peptic ulcer | | | | |
| KNOWLEDGE | | | | |
| Anatomy | 4 | 4 | 4 | |
| Pathophysiology | 4 | 4 | 4 | |
| Differential diagnosis - perf DU, GU, Ca | 4 | 4 | 4 | |
| Complications - subphrenic abscess | 4 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination - peritonitis | 4 | 4 | 4 | |
| Investigation | 4 | 4 | 4 | Desirable |
| Resuscitation | 4 | 4 | 4 | |
| Decision making - comorbidity | 3 | 4 | 4 | |
| Operative options - closure, local excision, resection | 3 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Laparoscopy | 2 | 4 | 4 | Desirable |
| Local treatment, ulcer closure or excision | 2 | 4 | 4 | |
| Partial gastrectomy | 1 | 2 | 2 | |
| Total gastrectomy | 1 | 2 | 2 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| ACUTE GASTRIC VOLVULUS | | | | |
| OBJECTIVES | | | | |
| Assessment and initial management of patients presenting with acute gastric volvulus | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy - para-oesophageal hernia | 4 | 4 | 4 | |
| Pathophysiology | 4 | 4 | 4 | |
| Clinical presentation | 4 | 4 | 4 | |
| Investigation - contrast radiology, CT | 4 | 4 | 4 | |
| Complications - gastric necrosis | 4 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 4 | 4 | 4 | |
| Investigation | 4 | 4 | 4 | Desirable |
| Resuscitation - fluid | 4 | 4 | 4 | |
| Decision making - indications for surgery | 4 | 4 | 4 | |
| Referral to specialist unit for definitive management | 2 | 3 | 4 | |
| Operative options - endoscopic, urgent or delayed surgery | 4 | 4 | 4 | |
| Postoperative management | 4 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 1 | 1 | 1 | |
| Gastropexy | 1 | 1 | 1 | |
| Hiatus hernia repair | 1 | 2 | 2 | |
| Total Gastrectomy | 1 | 2 | 2 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| 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 | | | | |
| KNOWLEDGE | | | | |
| Anatomy | 4 | 4 | 4 | |
| Pathophysiology | 4 | 4 | 4 | |
| Microbiology | 4 | 4 | 4 | |
| Complications | | | | |
| Acute cholecystitis | 4 | 4 | 4 | |
| Empyema | 4 | 4 | 4 | |
| Mucocoele | 4 | 4 | 4 | |
| Acute pancreatitis | 4 | 4 | 4 | |
| Chronic cholecystitis | 4 | 4 | 4 | |
| Biliary colic | 4 | 4 | 4 | |
| Common bile duct stone | 4 | 4 | 4 | |
| Obstructive jaundice, all causes including gall stones, tumour and inflammatory conditions | 3 | 3 | 4 | |
| Cholangitis | 3 | 3 | 4 | |
| Gall stone ileus | 3 | 4 | 4 | |
| Gall bladder cancer | 2 | 3 | 4 | |
| Postoperative problems | | | | |
| Bile duct injury | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination - elective, acute, emergency | 4 | 4 | 4 | |
| Investigation - U/S, ERCP, MRCP, CT | 4 | 4 | 4 | Desirable |
| Resuscitation | 4 | 4 | 4 | |
| Decision making | 2 | 3 | 4 | |
| Non-operative treatment - ERCP, U/S cholecystotomy | 2 | 3 | 4 | |
| Operative options - lap chole | 2 | 3 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Cholecystectomy - lap / open | 2 | 3 | 4 | Strongly recommended: |
| Cholecystostomy | 2 | 3 | 4 | Strongly recommended: |
| Exploration CBD | 2 | 2 | 2 | |
| Hepaticoducho-jejunostomy | 1 | 2 | 2 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ACUTE PANCREATITIS | | | | |
| OBJECTIVES | | | | |
| Diagnosis and management of most patients with acute pancreatitis | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy | 3 | 4 | 4 | |
| Pathophysiology - scoring systems | 3 | 4 | 4 | |
| Microbiology | 3 | 4 | 4 | |
| Clinical presentation | 3 | 4 | 4 | |
| Investigations - CT, ERCP | 3 | 4 | 4 | |
| Complications | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 3 | 4 | 4 | |
| Investigation | 3 | 4 | 4 | Desirable |
| Resuscitation | 3 | 4 | 4 | |
| Decision making | 2 | 4 | 4 | |
| Non-operative treatment incl nutrition, use of antibiotics | 3 | 4 | 4 | |
| Interventional options - ERCP, radiological drainage | 3 | 3 | 4 | |
| Postoperative management | | | | |
| Abscess; Pseudocyst; Haemorrhage | 2 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Cholecystectomy | 2 | 3 | 4 | Strongly recommended: |
| Exploration CBD | 1 | 2 | 2 | |
| ERCP | 1 | 1 | 1 | |
| Necrosectomy | 1 | 2 | 2 | |
| Pseudocyst drainage | 1 | 2 | 2 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| CHRONIC PANCREATITIS | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients with chronic pancreatitis | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy | 2 | 4 | 4 | |
| Pathophysiology | 2 | 4 | 4 | |
| Clinical presentation | 2 | 4 | 4 | |
| Investigation | 2 | 4 | 4 | |
| Complications | 2 | 4 | 4 | |
| Postoperative problems | 2 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 2 | 4 | 4 | |
| Investigation | 2 | 4 | 4 | Desirable |
| Resuscitation | 2 | 4 | 4 | |
| Decision making | 2 | 3 | 4 | |
| Non-operative treatment incl ERCP | 2 | 3 | 4 | |
| Operative options | 2 | 3 | 4 | |
| Postoperative management | 2 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| ERCP | 1 | 1 | 1 | |
| Pancreaticojejunostomy | 1 | 2 | 2 | |
| Pancreaticoduodenectomy | 1 | 2 | 2 | |
| Distal pancreatectomy | 1 | 2 | 2 | |
| Hepaticodocho-jejunostomy | 1 | 2 | 2 | |
| Pseudocyst drainage | 1 | 2 | 2 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| PERI-ANAL SEPSIS | | | | |
| OBJECTIVE | | | | |
| Recognise and manage acute peri-anal sepsis | | | | |
| CLINICAL SKILLS | | | | |
| Differentiate cryptoglandular abscess and fistula from other causes | 3 | 3 | 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 | |
| TECHNICAL SKILLS | | | | |
| Management of anorectal abscess including preoperative and postoperative care and the appropriate procedure based on anatomical spaces | 3 | 4 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| PILONIDAL DISEASE | | | | |
| OBJECTIVE | | | | |
| Emergency management of pilonidal abscess | | | | |
| KNOWLEDGE | | | | |
| Pathophysiology of pilonidal disease | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| Assess the symptoms and signs of pilonidal disease: abscess, sinus | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Drainage of pilonidal abscess | 3 | 4 | 4 | Desirable |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ACUTE PAINFUL PERI-ANAL CONDITIONS | | | | |
| OBJECTIVE | | | | |
| Diagnose and initially manage anal fissure, thrombosed haemorrhoids and perianal haematoma | | | | |
| KNOWLEDGE | | | | |
| Aetiology of anal fissure, haemorrhoids and perianal haematoma | 4 | 4 | 4 | |
| Anatomical location of a classic anal fissure, thrombosed haemorrhoids and perianal haematoma | 4 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| Assessment of the symptoms and signs | 4 | 4 | 4 | |
| Initial conservative management of anal fissure and thrombosed haemorrhoids and planning of surgical treatment for perianal haematoma | 2 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| EUA, rigid sigmoidoscopy, drain perianal haematoma | 2 | 4 | 4 | Strongly recommended: |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| ACUTE COLONIC DIVERTICULITIS | | | | |
| OBJECTIVES | | | | |
| Ability to assess and manage acute presentations of diverticular disease | | | | |
| 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 acute 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 | |
| Recognise the indications for 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 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Perform laparoscopy and washout with drainage for appropriate patients | 2 | 3 | 4 | Strongly recommended: |
| Colectomy-left | 2 | 3 | 4 | |
| Colectomy-sigmoid | 2 | 3 | 4 | |
| Colostomy-construction | 2 | 3 | 4 | Desirable |
| Hartmann's procedure | 2 | 3 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| VOLVULUS | | | | |
| OBJECTIVE | | | | |
| Diagnosis and initial treatment of colonic volvulus | | | | |
| KNOWLEDGE | | | | |
| Aetiology of volvulus of the colon | 4 | 4 | 4 | |
| Incidence and epidemiology 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 | 1 | 1 | 1 | |
| Colonoscopy-diagnostic | 1 | 1 | 1 | |
| Colonoscopy-therapeutic - insertion of PEC button | 1 | 1 | 1 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| MASSIVE LOWER GI BLEEDING | | | | |
| OBJECTIVE | | | | |
| Management of massive lower GI tract bleeding | | | | |
| KNOWLEDGE | | | | |
| Aetiology of massive lower GI bleeding, including Meckel's | 4 | 4 | 4 | |
| Utility, specificity and sensitivity of colonoscopy, angiography and radio-isotope scintigraphy in evaluation of lower GI bleeding | 3 | 3 | 4 | |
| Angiographic treatment of lower GI bleeding | 2 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| Assess haemodynamic stability and outline a resuscitation plan | 4 | 4 | 4 | |
| Understand 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 | |
| Endoscopic treatment of lower GI bleeding including coagulation, injection therapy and laser ablation | 1 | 1 | 2 | |
| Manage the patient with regard to the indications for radiological intervention or surgery, arrange radiological intervention or appropriate surgical procedures and recognise their possible complications based upon cause, location, patient age and medical condition | 2 | 3 | 4 | |
| Perform intraoperative evaluation and management of persistent massive lower GI bleeding without an identified site | 2 | 3 | 4 | |
| Manage postoperative lower GI bleeding | 2 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Colonoscopy-diagnostic | 1 | 1 | 1 | |
| Colonoscopy-therapeutic | 1 | 1 | 1 | |
| Colectomy-total+ileostomy | 2 | 3 | 4 | |
| Colectomy-right | 2 | 3 | 4 | |
| Colectomy-left | 2 | 3 | 4 | |
| Colectomy-sigmoid | 2 | 3 | 4 | |
| Colostomy-construction | 2 | 3 | 4 | Desirable |
| Meckel's diverticulectomy | 2 | 3 | 4 | Strongly recommended: |
| Hartmann's procedure | 2 | 3 | 4 | |
| Ileostomy-construction | 2 | 3 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| ACUTE COLITIS | | | | |
| OBJECTIVES | | | | |
| Diagnosis and management of acute colitis including ischaemic, inflammatory and infective | | | | |
| KNOWLEDGE | | | | |
| Vascular anatomy of the colon | 4 | 4 | 4 | |
| The aetiology and pathology of acute colonic ischaemia, inflammatory bowel disease and infective colitis | 4 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| Recognise the clinical presentation of all types of acute colitis | 3 | 4 | 4 | |
| Recognise the natural history, diagnosis, and be able to initially manage all types of colitis | 3 | 4 | 4 | |
| Recognise and manage ischaemic colitis after abdominal aortic aneurysm repair | 2 | 3 | 3 | |
| TECHNICAL SKILLS | | | | |
| Colectomy-right | 2 | 3 | 4 | |
| Colectomy-transverse | 2 | 3 | 4 | |
| Colectomy-left | 2 | 3 | 4 | |
| Colectomy-sigmoid | 2 | 3 | 4 | |
| Colectomy-total+ileostomy | 1 | 3 | 4 | |
| Colectomy-total+ileorectal anastomosis | 1 | 2 | 2 | |
| Crohn's-ileocaecectomy | 1 | 2 | 3 | |

EMERGENCY GENERAL SURGERY

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| EMERGENCY ANEURYSM DISEASE | | | | |
| OBJECTIVES | | | | |
| Assessment and management of emergency aneurysm disease | | | | |
| KNOWLEDGE | | | | |
| risk factors for rupture | 4 | 4 | 4 | |
| presentation | 4 | 4 | 4 | |
| differential diagnosis | 4 | 4 | 4 | |
| treatment options: open, endovascular | 4 | 4 | 4 | |
| complications of repair | 3 | 3 | 3 | |
| emergency presentations of other aneurysms: popliteal, false, dissection | 3 | 3 | 3 | |
| CLINICAL SKILLS | | | | |
| history | 4 | 4 | 4 | |
| examination | 4 | 4 | 4 | |
| resuscitation | 4 | 4 | 4 | |
| assessment of comorbidity | 4 | 4 | 4 | |
| investigation: CT | 3 | 3 | 3 | Desirable |
| selection for intervention | 2 | 3 | 3 | |
| recognition of complications | 4 | 4 | 4 | |
| management of complications | 2 | 2 | 2 | |
| TECHNICAL SKILLS | | | | |
| endovascular AAA repair | 1 | 2 | 2 | |
| open AAA repair | 1 | 2 | 2 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| MESENTERIC VASCULAR DISEASE | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients with acute and chronic mesenteric ischaemia | | | | |
| KNOWLEDGE | | | | |
| anatomy of mesenteric arterial and venous system | 4 | 4 | 4 | |
| pathophysiology of mesenteric ischaemia | 4 | 4 | 4 | |
| presentation of mesenteric vascular disease | | | | |
| acute | 3 | 3 | 4 | |
| chronic | 3 | 3 | 4 | |
| venous | 3 | 3 | 4 | |
| investigation: | | | | |
| duplex, MR, CT, catheter angiography | 3 | 4 | 4 | Desirable |
| treatment options: | | | | |
| endovascular | 3 | 3 | 3 | |
| operative | 3 | 3 | 3 | |
| complications of treatment | 3 | 3 | 3 | |
| CLINICAL SKILLS | | | | |
| history | 4 | 4 | 4 | |
| examination | 4 | 4 | 4 | |
| resuscitation | 4 | 4 | 4 | |
| patient selection for intervention | 2 | 2 | 2 | |
| TECHNICAL SKILLS | | | | |
| endovascular intervention | 1 | 1 | 1 | |
| mesenteric bypass | 1 | 1 | 1 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ACUTE LIMB ISCHAEMIA | | | | |
| OBJECTIVE | | | | |
| Ability to recognise acute and chronic limb ischaemia and understand emergency management | | | | |
| KNOWLEDGE | | | | |
| Anatomy of arterial system | 4 | 4 | 4 | |
| Pathophysiology | | | | |
| embolism | 4 | 4 | 4 | |
| thrombosis | 4 | 4 | 4 | |
| trauma | 4 | 4 | 4 | |
| iatrogenic | 4 | 4 | 4 | |
| Investigations | | | | |
| doppler | 3 | 3 | 3 | Desirable |
| duplex | 3 | 3 | 3 | |
| angiography | 3 | 3 | 3 | |
| CT | 2 | 2 | 2 | |
| Management | | | | |
| Resuscitation | 4 | 4 | 4 | |
| Principles and indications for conservative treatment | 4 | 4 | 4 | |
| Principles and indications for embolectomy | 4 | 4 | 4 | |
| Principles and indications for angioplasty / stenting | 3 | 4 | 4 | |
| Principles and indications for bypass | 3 | 4 | 4 | |
| Principles and indications for thrombolysis | 2 | 3 | 3 | |
| Principles and indications for primary amputation | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History | 4 | 4 | 4 | |
| Examination | 4 | 4 | 4 | |
| Recognition of acute, acute on chronic and chronic limb ischaemia | 4 | 4 | 4 | |
| Ability to assess the degree of limb ischaemia | 4 | 4 | 4 | |
| Investigations | | | | |
| doppler | 3 | 3 | 3 | |
| duplex | 3 | 3 | 3 | |
| angiography | 3 | 3 | 3 | |
| CT | 2 | 2 | 2 | |
| echocardiogram, 24 hour ECG | 2 | 2 | 2 | |
| TECHNICAL SKILLS | | | | |
| Exposure and control of femoral artery bifurcation | 2 | 2 | 2 | |
| Exposure and control of brachial artery bifurcation | 2 | 2 | 2 | |
| Embolectomy | 2 | 2 | 2 | Strongly recommended: |
| Emergency arterial reconstruction | 1 | 1 | 1 | |
| Fasciotomy | 2 | 2 | 2 | |

| | ST 4 | ST 6 | ST 8 | AT/ M | Areas in which simulation should be used to develop relevant skills |
|---|---------|---------|---------|----------|--|
| TRAUMA PRINCIPLES (includes Abdominal Injuries from 2010) | | | | | |
| OBJECTIVE | | | | | |
| Identify and manage the majority of abdominal injuries | | | | | |
| KNOWLEDGE | | | | | |
| Anatomy of abdomen | 4 | 4 | 4 | 4 | |
| Aetiology and Epidemiology | 4 | 4 | 4 | 4 | |
| Pathophysiology of shock | 4 | 4 | 4 | 4 | |
| Recognition of the possibility of non-accidental injury | 4 | 4 | 4 | 4 | |
| Differences in children and the elderly | 4 | 4 | 4 | 4 | |
| Principles of management of severely injured patients | 4 | 4 | 4 | 4 | |
| Importance of mechanism of injury - gun shot, stabbing, seat belt | 4 | 4 | 4 | 4 | |
| Indications for uncross matched blood | 4 | 4 | 4 | 4 | |
| Coagulopathy | 4 | 4 | 4 | 4 | |
| Pathophysiology of peritonitis and sepsis | 4 | 4 | 4 | 4 | |
| Trauma Scoring Systems | 4 | 4 | 4 | 4 | |
| CLINICAL SKILLS | | | | | |
| Triage | 2 | 3 | 4 | 4 | Strongly recommended : |
| History and examination | 4 | 4 | 4 | 4 | |
| Resuscitation | 4 | 4 | 4 | 4 | |
| Investigations | 4 | 4 | 4 | 4 | |
| Appropriate use of radiographs, CT and ultrasound | 4 | 4 | 4 | 4 | |
| Indications for intervention | 3 | 4 | 4 | 4 | |
| Recognition of injuries requiring other specialties | 3 | 4 | 4 | 4 | |
| Management of hollow organ injury | 3 | 4 | 4 | 4 | |
| Understand indications for Damage Control vs Definitive Surgery | 3 | 4 | 4 | 4 | |

| | ST 4 | ST 6 | ST 8 | AT/ M | Areas in which simulation should be used to develop relevant skills |
|---|---------|---------|---------|----------|--|
| ABDOMEN AND THORAX (includes Abdominal Injuries and Blunt and Penetrating Injuries from 2010) | | | | | |
| OBJECTIVES | | | | | |
| 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. | | | | | |
| KNOWLEDGE | | | | | |
| Closed and penetrating thoracic injury | | | | | |
| Anatomy | 4 | 4 | 4 | 4 | |
| Concept of low energy, high energy transfer injury | 2 | 3 | 4 | 4 | |
| Pathogenesis of shock | 4 | 4 | 4 | 4 | |
| Closed and penetrating abdominal injury | | | | | |
| Anatomy | 4 | 4 | 4 | 4 | |
| Concept of energy, low high energy transfer injury | 2 | 3 | 4 | 4 | |
| Pathogenesis of shock | 4 | 4 | 4 | 4 | |
| | | | | | |
| CLINICAL SKILLS | | | | | |
| Indications for and interpretation of CT | 2 | 3 | 4 | 4 | |
| Indications for radiological intervention for haemorrhage control | 2 | 3 | 4 | 4 | |
| Closed thoracic injury | | | | | |
| Assessment and initial management of multiply injured patient | 4 | 4 | 4 | 4 | |
| Recognise need for operative intervention and organise | 2 | 3 | 4 | 4 | |
| Understand indications for ER thoracotomy | 2 | 3 | 4 | 4 | |
| Postoperative management and recognition of complications | 3 | 3 | 4 | 4 | |
| Penetrating thoracic injury | | | | | |
| Assessment and initial management of multiply injured patient | 4 | 4 | 4 | 4 | |
| Recognise need for operative intervention and organise | 2 | 3 | 4 | 4 | |
| Recognise and treat sucking chest wound | 3 | 4 | 4 | 4 | |
| Understand indications for ER thoracotomy | 2 | 3 | 4 | 4 | |
| Postoperative management and recognition of complications | 3 | 3 | 4 | 4 | |
| Closed and penetrating abdominal injury | | | | | |
| Assessment and initial management of multiply injured patient | 4 | 4 | 4 | 4 | |
| Recognise need for laparotomy and organise | 2 | 3 | 4 | 4 | |
| Arrest haemorrhage by suture/ligation/packing | 2 | 3 | 4 | 4 | |
| Indication for pelvic fixator | 2 | 2 | 3 | 4 | |
| Drains for biliary / pancreatic injury | 2 | 2 | 4 | 4 | |
| Management of retroperitoneal haematoma | 2 | 2 | 4 | 4 | |

Strongly
recommend
ed:

EMERGENCY GENERAL SURGERY

| | | | | | |
|--|---|---|---|---|-----------------------|
| Postoperative management and recognition of complications | 3 | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | | |
| Closed and Penetrating thoracic injury | | | | | |
| Chest drain insertion | 4 | 4 | 4 | 4 | Strongly recommended: |
| Lateral thoracotomy | 1 | 2 | 2 | 4 | Desirable |
| Median sternotomy | 1 | 2 | 2 | 4 | |
| Clamshell thoracotomy | 1 | 2 | 2 | 4 | |
| Hilar control of massive pulmonary haemorrhage | 1 | 1 | 2 | 4 | |
| Non-segmental lung resection | 1 | 1 | 2 | 4 | |
| Pulmonary tractotomy using staplers | 1 | 1 | 2 | 4 | |
| Pericardotomy | 1 | 2 | 2 | 4 | |
| Control and suture of myocardial laceration | 1 | 2 | 2 | 4 | |
| Closed and penetrating abdominal injury | | | | | |
| Laparotomy - trauma | 2 | 3 | 4 | 4 | Desirable |
| Packing / debridement of liver trauma | 2 | 3 | 4 | 4 | |
| Splenectomy | 2 | 3 | 4 | 4 | |
| Splenic repair | 1 | 2 | 3 | 4 | |
| Small bowel resection | 2 | 3 | 4 | 4 | Strongly recommended: |
| Distal pancreatectomy | 2 | 2 | 2 | 4 | Desirable |
| Pancreatic debridement and drainage | 2 | 2 | 3 | 4 | |
| Mobilisation and repair of the duodenum | 2 | 2 | 3 | 4 | |
| Medial rotation of left hemicolon and colectomy when appropriate | 2 | 3 | 4 | 4 | |
| Medial rotation of right hemicolon and colectomy when appropriate | 2 | 3 | 4 | 4 | |
| Hartmann's Procedure | 2 | 3 | 4 | 4 | |
| Nephrectomy | 1 | 1 | 1 | 4 | |
| Bladder repair | 1 | 1 | 2 | 4 | |
| Ileostomy - construction | 2 | 3 | 4 | 4 | Strongly recommended: |
| Colostomy - construction | 2 | 3 | 4 | 4 | |
| Temporary abdominal closure Bogota Bag or Topical Negative Pressure Dressing | 2 | 3 | 4 | 4 | |

| | ST 4 | ST 6 | ST 8 | AT/ M | Areas in which simulation should be used to develop relevant skills |
|---|---------|---------|---------|----------|--|
| HEAD AND NECK | | | | | |
| OBJECTIVE | | | | | |
| Identification, assessment and initial management of trauma to the Head and Neck | | | | | |
| KNOWLEDGE | | | | | |
| Anatomy of the Head and Neck | 4 | 4 | 4 | 4 | |
| CLINICAL SKILLS | | | | | |
| Immobilisation of patients with suspected cervical spine injury | 4 | 4 | 4 | 4 | Strongly recommend ed: |
| Observation of patients with head injury | 3 | 4 | 4 | 4 | |
| Interpretation of plain radiographs and CT scans of cervical spine | 2 | 3 | 3 | 4 | |
| Interpretation of CT brain/skull | 2 | 3 | 3 | 4 | |
| Decision to refer to Neurosurgeon | 3 | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | | |
| Exposure, control and repair of vascular, airway or GI tract structures in the neck | 1 | 1 | 2 | 4 | |
| Cryothyroidotomy | 3 | 3 | 4 | 4 | Strongly recommend ed: |
| Formal tracheostomy | 1 | 2 | 2 | 4 | Desirable |
| Burr holes | 1 | 1 | 1 | 4 | |
| Craniotomy/Craniectomy | 1 | 1 | 1 | 4 | |
| Evacuation of Extradural/Subdural haematoma | 1 | 1 | 1 | 4 | |
| Debridement of injured brain | 1 | 1 | 1 | 4 | |
| Lateral canthotomy for orbital decompression | 1 | 1 | 1 | 4 | |

| | ST 4 | ST 6 | ST 8 | AT/ M | Areas in which simulation should be used to develop relevant skills |
|---|---------|---------|---------|----------|--|
| EXTREMITY AND SOFT TISSUE (includes Blunt and Penetrating Injuries from 2010) | | | | | |
| OBJECTIVE | | | | | |
| Assessment and management of blunt and penetrating injury of the soft tissues and skeleton. | | | | | |
| KNOWLEDGE | | | | | |
| Anatomy of the limbs | 4 | 4 | 4 | 4 | |
| Blunt and penetrating soft tissue and skeletal injury | | | | | |
| Anatomy | 4 | 4 | 4 | 4 | |
| Concept of low energy, high energy transfer injury | 3 | 3 | 4 | 4 | |
| Pathogenesis of shock | 3 | 3 | 4 | 4 | |
| Principles of soft tissue coverage and simple flaps | 2 | 3 | 4 | 4 | |
| Principles of Topical Negative Pressure Dressings | 3 | 4 | 4 | 4 | |
| Understanding of wound contamination/infection | 4 | 4 | 4 | 4 | |
| CLINICAL SKILLS | | | | | |
| Blunt and penetrating soft tissue and skeletal injury | | | | | |
| Assessment and initial management of multiply injured patient | 4 | 4 | 4 | 4 | Highly recomende d |
| Arrest haemorrhage by pressure and tourniquet | 4 | 4 | 4 | 4 | |
| Appropriate immobilisation during assessment | 4 | 4 | 4 | 4 | |
| Recognition of major vascular trauma | 2 | 3 | 4 | 4 | |
| Assessment of ischaemic limb | 2 | 3 | 4 | 4 | |
| Recognition and treatment of acute compartment syndrome | 2 | 3 | 4 | 4 | |
| Postoperative management and recognition of complications | 3 | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | | |
| Proximal arterial control | | | | | |
| Femoral | 1 | 1 | 2 | 4 | Strongly recommen ed: |
| Brachial | 1 | 1 | 2 | 4 | Strongly recommen ed: |
| Subclavian | 1 | 1 | 2 | 4 | |
| Soft Tissue Management | | | | | |
| Wound debridement and lavage | 2 | 3 | 4 | 4 | Desirable |
| Fasciotomy -Lower leg | 2 | 2 | 3 | 4 | |
| Fasciotomy -Thigh | 2 | 2 | 3 | 4 | |
| Fasciotomy -Upper limb | 2 | 2 | 3 | 4 | |
| Application of dressings | 3 | 3 | 4 | 4 | |
| Application of Topical Negative Pressure Dressings | 2 | 2 | 3 | 4 | Strongly recommen ed: |

| | ST4 | ST6 | ST8 | AT/M | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|------|---|
| VASCULAR TRAUMA | | | | | |
| OBJECTIVE | | | | | |
| Identification, assessment and management of injuries to blood vessels | | | | | |
| KNOWLEDGE | | | | | |
| Surgical anatomy | | | | | |
| Relationship of vascular structures to fractures, nerves, associated structures | 2 | 3 | 4 | 4 | |
| Mechanisms of vascular injury | | | | | |
| Traumatic | 2 | 3 | 4 | 4 | |
| Iatrogenic | 2 | 3 | 4 | 4 | |
| Pathophysiology of trauma and muscle ischaemia | 2 | 3 | 4 | 4 | |
| Pathophysiology of A-V fistula | 2 | 3 | 4 | 4 | |
| Investigations | | | | | |
| Indications | 2 | 3 | 4 | 4 | |
| Invasive | 2 | 3 | 4 | 4 | |
| Non-invasive | 2 | 3 | 4 | 4 | |
| Operative approach to specific injuries | | | | | |
| Arterial or venous | 2 | 3 | 4 | 4 | |
| Open surgery | 2 | 3 | 4 | 4 | |
| Endovascular | 2 | 2 | 3 | 4 | |
| Combined arterial and venous | 2 | 3 | 4 | 4 | |
| Orthopaedic / neurological | 2 | 3 | 3 | 4 | |
| Technical options for repair | 2 | 3 | 3 | 4 | |
| Fasciotomy | 3 | 3 | 3 | 4 | |
| CLINICAL SKILLS | | | | | |
| Symptoms and signs of acute arterial / venous injury | 2 | 3 | 3 | 4 | |
| Investigation | | | | | |
| Ankle / brachial pressure index | 3 | 3 | 3 | 4 | Desirable |
| Duplex | 3 | 3 | 3 | 4 | |
| CT angiogram | 3 | 3 | 3 | 4 | |
| DSA | 3 | 3 | 3 | 4 | |
| Manage multiply injured patient | 3 | 4 | 4 | 4 | |
| Manage systemic effects of arterial trauma - rhabdomyolysis | 2 | 3 | 3 | 4 | |
| TECHNICAL SKILLS | | | | | |
| control with EMERGENCY GENERAL SURGERY | | | 4 | 4 | Strongly recommended: |
| Surgical options | | | | | |
| Exposure and control of major vessels thoracic aorta | 1 | 2 | 2 | 4 | Desirable |

| | | | | |
|---|---|---|---|---|
| abdominal aorta (infra and supra renal) | 1 | 2 | 3 | 4 |
| subclavian and axillary arteries | 1 | 1 | 2 | 4 |
| femoral and popliteal arteries | 1 | 1 | 2 | 4 |
| use of shunts | 1 | 1 | 2 | 4 |
| Ligation | 2 | 3 | 4 | 4 |
| Direct suture repair | 1 | 2 | 2 | 4 |
| End to end anastomosis | 1 | 2 | 2 | 4 |
| Interposition vein / prosthetic graft | 1 | 2 | 2 | 4 |
| Panel / spiral grafts | 1 | 2 | 2 | 4 |
| Fasciotomy | 2 | 2 | 3 | 4 |
| Radiological | | | | |
| Intra-operative imaging techniques | 1 | 1 | 2 | 3 |
| options for control of bleeding | 1 | 1 | 2 | 3 |

| | A T | M | Areas in which simulation should be used to develop relevant skills |
|---|--------|---|---|
| ADVANCED TRAUMA / MILITARY - GENERAL PRINCIPLES (for those intending to work in a trauma centre or in the military) | | | |
| Objectives | | | |
| To provide the Military 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. | | M | |
| Pathophysiology of trauma: Knowledge of the pathophysiology of different types of trauma | | | |
| Safe patient transfer: Ability to make the correct decision re patient transfer. | | M | |
| 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 | | | |
| KNOWLEDGE | | | |
| Pathophysiology of trauma | | | |
| Pathophysiology of blunt trauma | 4 | 4 | |
| Penetrating injury (low and high energy trauma) | 4 | 4 | |
| Blast injury | 3 | 4 | |
| Burns | 3 | 4 | |
| Safe patient transfer: Understanding of strategic/tactical situation | n/a | 4 | |
| Trauma Laparotomy | 4 | 4 | |
| Indications for laparostomy | 4 | 4 | |
| Paediatric trauma | | | |
| Paediatric physiology | 4 | 4 | |
| Paediatric trauma laparotomy | 3 | 3 | |
| Trauma thoracotomy: Indications for thoracotomy | 4 | 4 | |
| Incisions used in particular circumstances | 4 | 4 | |
| Damage control surgery: Damage control vs. definitive laparotomy | 4 | 4 | |
| Difficult peripheral haemorrhage: Anatomical approach to major vessels | 4 | 4 | |
| Severely traumatised ischaemic limbs: Anatomical approach to major vessels | 4 | 4 | |
| Pregnant woman with severe abdominal trauma: Indications for Caesarean section | 3 | 4 | |
| Burns: | | | |
| Knowledge of fluid replacement regimes for burns patients | 4 | 4 | |

| | | | |
|---|-----|--|---|
| Clinical Skills | | | |
| Safe patient transfer: Awareness of evacuation assets | n/a | | 4 |
| Interventional surgery only if the patient cannot be transferred safely within the relevant timeframe | n/a | | 4 |
| Trauma Laparotomy: | | | |
| Use of Focussed Abdominal Sonography for Trauma | 4 | | 4 |
| EMERGENCY GENERAL SURGERY | 4 | | 4 |
| Techniques for arresting haemorrhage including liver packing | 4 | | 4 |
| Safe anastomotic techniques for gut and blood vessels | 4 | | 4 |
| Appropriate formation of stomas | 4 | | 4 |
| Trauma thoracotomy: Lung resection | 3 | | 3 |
| Cardiac repair without bypass | 3 | | 3 |
| Damage control surgery: | | | |
| Management of the postoperative patient in difficult circumstances e.g. acidosis, coagulopathy, rewarming | 3 | | 3 |
| Difficult peripheral haemorrhage: Safe control of major vessels | 4 | | 4 |
| Severely traumatised ischaemic limbs: Safe control of major vessels | 4 | | 4 |
| Repair of vessels | 3 | | 4 |
| Use of temporary shunts | 3 | | 4 |
| Fasciotomy | 4 | | 4 |
| Decision to amputate | 3 | | 4 |
| Amputation AK | 4 | | 4 |
| Amputation BK | 4 | | 4 |
| Amputation upper limb | 4 | | 4 |
| Pregnant woman with severe abdominal trauma: Caesarean section | n/a | | 3 |
| Burns: Escharotomy | 3 | | 4 |
| Fluid replacement | 4 | | 4 |
| Surgical airway management in severe head and neck injury: Cricothyroidotomy | 4 | | 4 |
| Tracheostomy | 3 | | 3 |
| Stabilisation of the jaw after severe facial injury: Interdental wiring | n/a | | 3 |
| Technical Skills | | | |
| Trauma Laparotomy: Laparotomy-trauma | 4 | | 4 |
| Trauma thoracotomy: Thoracotomy-trans-sternal | 4 | | 4 |
| Thoracotomy-lateral | 4 | | 4 |
| Thoracotomy-clamshell | 4 | | 4 |
| Severely traumatised ischaemic limbs Amputation-AK | 4 | | 4 |
| Amputation-BK | 4 | | 4 |
| Amputation-upper limb | 4 | | 4 |
| Surgical airway management in severe head and neck injury: Cricothyroidotomy (percutaneous tracheostomy) | 4 | | 4 |

Desirable

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| GASTRO-OESOPHAGEAL REFLUX DISEASE | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients presenting with GORD | | | | |
| 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 | Desirable |
| Antireflux surgery | 2 | 2 | 4 | |
| Revisional antireflux surgery | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| HIATUS HERNIA | | | | |
| OBJECTIVES | | | | |
| Assessment of patients presenting with hiatus hernia | | | | |
| 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 | 3 | 4 | Desirable |
| Open repair | 1 | 2 | 3 | |
| Laparoscopic repair | 1 | 2 | 3 | |
| Revisional antireflux surgery | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| PEPTIC STRICTURE | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients presenting with peptic stricture | | | | |
| 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 | 2 | 3 | 4 | |
| Postoperative management - Diagnosis and management of perforation | 3 | 4 | 4 | |
| | | | | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 2 | 3 | 4 | Desirable |
| Oesophageal dilatation | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ACHALASIA | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients presenting with achalasia | | | | |
| 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 | Desirable |
| Decision making | 2 | 3 | 4 | |
| Non operative options | 2 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 2 | 3 | 4 | Desirable |
| Endoscopic dilation | 1 | 2 | 4 | |
| Endoscopic botox injection | 1 | 2 | 4 | |
| Laparoscopic cardiomyotomy | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| MOTILITY DISORDERS | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients presenting with oesophageal motility disorders | | | | |
| 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 | Desirable |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| 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. | | | | |
| KNOWLEDGE | | | | |
| Anatomy - Oesophagus and mediastinal relationships | 4 | 4 | 4 | |
| Clinical presentation - Post-instrumentation | 4 | 4 | 4 | |
| Investigation - Contrast radiology | 3 | 4 | 4 | Desirable |
| Pathophysiology - Mediastinitis | 3 | 4 | 4 | |
| Complications - Mediastinitis | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 3 | 4 | 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 | 2 | 3 | 4 | Desirable |
| Endoscopic interventions incl stent | 1 | 2 | 3 | |
| Thoracotomy + lavage | 1 | 2 | 4 | |
| Oesophagectomy | 1 | 2 | 3 | |

UPPER GI - OESOPHAGUS

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| BOERHAAVE'S | | | | |
| 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. | | | | |
| 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 | Desirable |
| 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 | 2 | 3 | 4 | Desirable |
| Thoracotomy + non-resectional management | 1 | 2 | 4 | |
| Oesophagectomy | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| CARCINOMA OF THE OESOPHAGUS | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients presenting with oesophageal carcinoma | | | | |
| 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, EUS, 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 | Desirable |
| Decision making | 2 | 3 | 4 | |
| Assessment of medical comorbidity for radical therapy | 2 | 3 | 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 | 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 | 2 | 3 | 4 | Desirable |
| Endoscopic palliation incl stenting | 1 | 2 | 4 | |
| EMR | 1 | 1 | 2 | |
| Open Oesophagogastrrectomy | | | | |
| 2 field lymph node dissection | 1 | 2 | 3 | Desirable |
| Transthoracic | 1 | 2 | 3 | |
| Transhiatal | 1 | 2 | 3 | |
| MIO | 1 | 1 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| OESOPHAGEAL VARICES | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients presenting with oesophageal varices | | | | |
| KNOWLEDGE | | | | |
| Anatomy | 3 | 4 | 4 | |
| Pathophysiology | | | | |
| Aetiology of portal hypertension | 3 | 4 | 4 | |
| Clinical presentation | 3 | 4 | 4 | |
| Diagnosis | 3 | 4 | 4 | |
| Treatment options | | | | |
| Medical treatment | 2 | 3 | 4 | |
| Porto-systemic shunt, TIPSS | 2 | 3 | 4 | |
| 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 | 3 | 4 | 4 | |
| Investigation - Endoscopic assessment | 2 | 3 | 4 | Desirable |
| Resuscitation | 3 | 4 | 4 | |
| Decision making | 2 | 3 | 4 | |
| Non-operative treatment - sclerotherapy / banding | 2 | 3 | 4 | |
| Operative options | | | | |
| Porto-caval shunt; Oesophageal transection | 2 | 3 | 3 | |
| Postoperative management | 2 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 2 | 3 | 4 | Desirable |
| Variceal injection | 1 | 2 | 3 | |
| Balloon tamponade | 1 | 2 | 3 | |

UPPER GI - STOMACH

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| GASTRIC ULCER | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients presenting with gastric ulcer | | | | |
| KNOWLEDGE | | | | |
| Anatomy | 4 | 4 | 4 | |
| Pathophysiology | 3 | 4 | 4 | |
| Clinical presentation - differential diagnosis of Ca | 3 | 4 | 4 | |
| Complications - perf, bleeding, pyloric stenosis | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 4 | 4 | 4 | |
| Investigation - endoscopy and biopsy | 4 | 4 | 4 | Desirable |
| Decision making - indications for surgery | 3 | 4 | 4 | |
| Operative options | 3 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 2 | 3 | 4 | Desirable |
| Endoscopic therapy | 1 | 2 | 3 | |
| Laparoscopy | 2 | 3 | 4 | |
| Local treatment, ulcer excision | 2 | 3 | 4 | |
| Gastroenterostomy | 2 | 3 | 4 | |
| Partial gastrectomy | 1 | 2 | 3 | |
| Total gastrectomy | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| DUODENAL ULCER | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients with duodenal ulceration and its complications | | | | |
| KNOWLEDGE | | | | |
| Clinical presentation | 3 | 4 | 4 | |
| Pathophysiology | 3 | 4 | 4 | |
| Complications - perf, bleeding, pyloric stenosis | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 4 | 4 | 4 | |
| Investigation - OGD | 4 | 4 | 4 | Desirable |
| 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 | 2 | 3 | 4 | Desirable |
| Endoscopic therapy | 1 | 2 | 3 | |
| Laparoscopy | 2 | 4 | 4 | |
| Local treatment, ulcer underrun/oversew | 2 | 4 | 4 | |
| Gastroenterostomy | 2 | 3 | 4 | |
| Partial gastrectomy | 1 | 2 | 3 | |
| Vagotomy and pyloroplasty | 1 | 2 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| GASTRIC AND DUODENAL POLYPS | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients presenting with gastric and duodenal polyps | | | | |
| KNOWLEDGE | | | | |
| Anatomy | 4 | 4 | 4 | |
| Clinical presentation - incidental, bleeding | 3 | 4 | 4 | |
| Pathology - adenoma, hamartoma, GIST, FAP | 3 | 4 | 4 | |
| Complications - malignancy | 3 | 4 | 4 | |
| | | | | |
| CLINICAL SKILLS | | | | |
| History and Examination | 4 | 4 | 4 | |
| Investigation - OGD and polypectomy | 4 | 4 | 4 | |
| Decision making | 2 | 3 | 4 | |
| Operative options | 3 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| | | | | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 2 | 3 | 4 | Desirable |
| Endoscopic excision | 1 | 2 | 3 | |
| EMR | 1 | 2 | 3 | |
| Laparoscopy | 2 | 3 | 4 | |
| Open excision | 2 | 2 | 4 | |
| Partial gastrectomy | 2 | 2 | 3 | |

UPPER GI - STOMACH

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ACUTE 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 perf peptic ulcer | | | | |
| KNOWLEDGE | | | | |
| Anatomy | 4 | 4 | 4 | |
| Pathophysiology | 4 | 4 | 4 | |
| Differential diagnosis - perf DU, GU, Ca | 4 | 4 | 4 | |
| Complications - subphrenic abscess | 4 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination - peritonitis | 4 | 4 | 4 | |
| Investigation | 4 | 4 | 4 | Desirable |
| Resuscitation | 4 | 4 | 4 | |
| Decision making - comorbidity | 3 | 4 | 4 | |
| Operative options - local excision, resection, ulcer closure | 3 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Laparoscopy | 2 | 4 | 4 | Desirable |
| Local treatment, ulcer closure or excision | 2 | 4 | 4 | |
| Partial gastrectomy | 1 | 2 | 3 | |
| Total gastrectomy | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| 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. | | | | |
| KNOWLEDGE | | | | |
| Anatomy | 4 | 4 | 4 | |
| Pathophysiology | 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 | Desirable |
| Resuscitation - management of hypovolaemic shock | 4 | 4 | 4 | |
| Decision making - indications for intervention | 3 | 4 | 4 | |
| Non-operative treatment - sclerotherapy | 3 | 4 | 4 | |
| Operative options | 3 | 4 | 4 | |
| Postoperative management - rebleeding | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 2 | 3 | 4 | Desirable |
| Endoscopic therapy | 1 | 2 | 3 | |
| Gastrotomy + non-resectional treatment - histology | 2 | 3 | 4 | |
| Partial gastrectomy | 1 | 2 | 3 | |
| Total gastrectomy | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| ACUTE GASTRIC DILATION | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients presenting with acute gastric dilatation | | | | |
| 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 | Desirable |
| Resuscitation | 4 | 4 | 4 | |
| Decision making | 2 | 4 | 4 | |
| Non-operative treatment NG aspiration | 3 | 4 | 4 | |
| Operative options | 3 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 2 | 3 | 4 | Desirable |
| Gastrectomy | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| ACUTE GASTRIC VOLVULUS | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients presenting with acute gastric volvulus | | | | |
| 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 | Desirable |
| Resuscitation - fluid | 4 | 4 | 4 | |
| Decision making - indications for surgery | 2 | 4 | 4 | |
| Operative options - endoscopic, urgent or delayed surgery | 3 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| | | | | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 2 | 3 | 4 | Desirable |
| Gastropexy | 2 | 2 | 4 | |
| Hiatus hernia repair | 2 | 2 | 3 | |
| Total Gastrectomy | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| GASTRIC CARCINOMA | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients presenting with gastric cancer | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy | | | | |
| Arterial blood supply; Lymph node tiers | 3 | 4 | 4 | |
| Pathology | | | | |
| Epidemiology; Aetiology - Helicobacter | 3 | 4 | 4 | |
| Stage - TNM; pattern of spread | 4 | 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 | Desirable |
| Decision making | | | | |
| Comorbidity assessment; nutritional support | 3 | 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 | 3 | 4 | |
| Postoperative management | | | | |
| Anastomotic leak; Duodenal stump disruption | 2 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 2 | 3 | 4 | Desirable |
| Endoscopic palliation incl stenting | 1 | 2 | 3 | |
| EMR | 1 | 1 | 3 | |
| Gastrojejunostomy | 2 | 3 | 4 | |
| Palliative gastrectomy | 2 | 2 | 3 | |
| D2 Subtotal gastrectomy | 1 | 2 | 3 | |
| D2 Total gastrectomy | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| GIST | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients presenting with gastrointestinal stromal tumours | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy | 4 | 4 | 4 | |
| Clinical presentation incidental, bleed | 3 | 4 | 4 | |
| Pathology - benign, malignant | 3 | 4 | 4 | |
| Complications | 3 | 4 | 4 | |
| | | | | |
| CLINICAL SKILLS | | | | |
| History and Examination | 4 | 4 | 4 | |
| Investigation - OGD, biopsy, CT | 4 | 4 | 4 | Desirable |
| 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 | 2 | 3 | 4 | Desirable |
| Laparoscopy | 2 | 4 | 4 | |
| Open excision | 2 | 2 | 4 | |
| Small bowel resection | 2 | 4 | 4 | Strongly recommended: |
| Partial gastrectomy | 1 | 2 | 3 | Desirable |
| Total gastrectomy | 1 | 2 | 3 | |

UPPER GI - STOMACH

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| GASTRIC LYMPHOMA | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients presenting with gastric lymphoma | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy | 4 | 4 | 4 | |
| Clinical presentation | 3 | 4 | 4 | |
| Investigation - OGD, CT, PET-CT | 3 | 4 | 4 | |
| Pathology - extranodal lymphoma, MALToma | 3 | 4 | 4 | |
| Complications - perforation | 3 | 4 | 4 | |
| | | | | |
| CLINICAL SKILLS | | | | |
| History and Examination | 4 | 4 | 4 | |
| Investigation - OGD, CT, PET-CT | 4 | 4 | 4 | Desirable |
| Decision making | 2 | 4 | 4 | |
| Medical management - chemo, helicobacter eradicaion | 2 | 3 | 4 | |
| Interventional options | 2 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| | | | | |
| TECHNICAL SKILLS | | | | |
| Endoscopy | 2 | 3 | 4 | Desirable |
| Gastrojejunostomy | 2 | 3 | 4 | |
| Total gastrectomy | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| 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 | | | | |
| KNOWLEDGE | | | | |
| Indications for surgery in morbid obesity | 3 | 4 | 4 | |
| Therapeutic options for morbid obesity. Types of operations performed | 3 | 4 | 4 | |
| 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 | |
| Management decisions for early and late complications of morbid obesity | 2 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Laparoscopic access in the morbidly obese | 1 | 2 | 4 | Strongly recommended: |
| Aspiration of lap band port | 1 | 2 | 4 | Desirable |
| Emergency release of lap band for slippage | 1 | 2 | 4 | |
| Insertion of lap band | 1 | 2 | 3 | |
| Repair of internal hernia after gastric bypass | 1 | 2 | 4 | |
| Roux en Y gastric bypass | 1 | 1 | 2 | |
| Revisional gastric surgery for obesity | 1 | 1 | 2 | |
| General Surgery for the super morbidly obese patient | 1 | 2 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| 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 | | | | |
| 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 | 3 | 4 | |
| Postoperative problems | | | | |
| Bile duct injury | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination - elective, acute, emergency | 4 | 4 | 4 | |
| Investigation - U/S, ERCP, MRCP, CT | 4 | 4 | 4 | Desirable |
| Resuscitation | 4 | 4 | 4 | |
| Decision making | 2 | 3 | 4 | |
| Non-operative treatment - ERCP, U/S cholecystotomy | 3 | 4 | 4 | |
| Operative options - lap chole | 3 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Cholecystectomy - lap / open | 2 | 3 | 4 | Strongly recommended: |
| Exploration CBD | 2 | 2 | 4 | Desirable |
| Hepaticoducho-jejunostomy | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| ACUTE PANCREATITIS | | | | |
| OBJECTIVES | | | | |
| Diagnosis and management of most patients with acute pancreatitis with operation where appropriate | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy | 4 | 4 | 4 | |
| Pathophysiology - 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 | Desirable |
| Resuscitation | 4 | 4 | 4 | |
| Decision making | 3 | 4 | 4 | |
| Non-operative treatment incl nutrition, use of antibiotics | 3 | 4 | 4 | |
| Interventional options - ERCP, radiological drainage | 3 | 3 | 4 | |
| Postoperative management | | | | |
| Abscess; Pseudocyst; Haemorrhage | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Cholecystectomy | 2 | 3 | 4 | Strongly recommended: |
| Exploration CBD | 2 | 2 | 4 | Desirable |
| ERCP | 1 | 1 | 2 | |
| Necrosectomy | 1 | 2 | 3 | |
| Pseudocyst drainage | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| CHRONIC PANCREATITIS | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients with chronic pancreatitis | | | | |
| 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 | Desirable |
| Resuscitation | 4 | 4 | 4 | |
| Decision making | 2 | 3 | 4 | |
| Non-operative treatment incl ERCP | 2 | 3 | 4 | |
| Operative options | 2 | 3 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| ERCP | 1 | 1 | 2 | Desirable |
| Pancreaticojejunostomy | 1 | 2 | 3 | |
| Pancreaticoduodenectomy | 1 | 2 | 3 | |
| Distal pancreatectomy | 1 | 2 | 3 | |
| Hepaticoducho-jejunostomy | 1 | 2 | 3 | |
| Pseudocyst drainage | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| PANCREATIC CANCER / PERIAMPULLARY CANCER | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients with pancreatic and ampullary cancer | | | | |
| 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 - 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 | Desirable |
| Decision making | | | | |
| Comorbidity; Nutritional assessment | 3 | 4 | 4 | |
| Non-operative treatment incl palliation, nutrition | 3 | 4 | 4 | |
| Interventional options eg ERCP, PTC | 3 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Pancreaticoduodenectomy | 1 | 2 | 3 | Desirable |
| Distal pancreatectomy | 1 | 2 | 3 | |
| ERCP | 1 | 1 | 2 | |
| Biliary bypass | 1 | 2 | 4 | |
| Gastroenterostomy | 2 | 3 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| CYSTIC TUMOURS | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients with cystic tumours of the pancreas | | | | |
| 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 | Desirable |
| Decision making | 2 | 3 | 4 | |
| Non-operative treatment incl palliation, nutrition | 2 | 3 | 4 | |
| Interventional options eg ERCP, PTC | 2 | 3 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Pancreaticoduodenectomy | 1 | 2 | 3 | Desirable |
| Distal pancreatectomy | 1 | 2 | 3 | |
| ERCP | 1 | 1 | 2 | |
| Biliary bypass | 1 | 2 | 4 | |
| Gastroenterostomy | 2 | 3 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| 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. | | | | |
| 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 | Desirable |
| Decision making | 2 | 3 | 4 | |
| Non-operative treatment incl palliation, nutrition | 2 | 3 | 4 | |
| Interventional options eg ERCP, PTC | 2 | 3 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Pancreaticoduodenectomy | 1 | 2 | 3 | Desirable |
| Distal pancreatectomy | 1 | 2 | 3 | |
| Enucleation | 1 | 2 | 4 | |
| ERCP | 1 | 1 | 2 | |
| Biliary bypass | 1 | 2 | 4 | |
| Gastroenterostomy | 2 | 3 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| INTRADUCTAL PAPILLARY MUCINOUS NEOPLASMS | | | | |
| OBJECTIVES | | | | |
| Assessment and management of IPMN | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy | 4 | 4 | 4 | |
| Pathophysiology | 2 | 3 | 4 | |
| Pathology | 2 | 3 | 4 | |
| Complications | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 4 | 4 | 4 | |
| Investigation | 3 | 4 | 4 | Desirable |
| Decision making | 2 | 3 | 4 | |
| Non-operative treatment incl palliation, nutrition | 2 | 3 | 4 | |
| Interventional options eg ERCP, PTC | 2 | 3 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Pancreaticoduodenectomy | 1 | 2 | 3 | Desirable |
| Distal pancreatectomy | 1 | 2 | 3 | |
| Total pancreatectomy | 1 | 2 | 3 | |
| ERCP | 1 | 1 | 2 | |
| Biliary bypass | 1 | 2 | 4 | |
| Gastroenterostomy | 2 | 3 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| PANCREATIC TRAUMA | | | | |
| OBJECTIVES | | | | |
| Assessment and management of patients with pancreatic trauma | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy | 4 | 4 | 4 | |
| Pathophysiology | 4 | 4 | 4 | |
| Clinical presentation - blunt and penetrating | 3 | 4 | 4 | |
| Investigation - CT, MRI | 3 | 4 | 4 | |
| Complications - fistula | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 4 | 4 | 4 | |
| Investigation - CT, MRI, laparoscopy | 3 | 4 | 4 | Desirable |
| Resuscitation | 4 | 4 | 4 | |
| Decision making | 2 | 3 | 4 | |
| Non-operative treatment | 3 | 3 | 4 | |
| Interventional options eg ERCP, radiological drainage | 3 | 3 | 4 | |
| Postoperative management - fistula, nutritional support | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Cholecystectomy | 2 | 3 | 4 | Strongly recommended: |
| Debridement & drainage | 1 | 2 | 4 | Desirable |
| Pancreaticojejunostomy | 1 | 2 | 3 | |
| Pancreaticoduodenectomy | 1 | 2 | 3 | |
| Distal pancreatectomy | 2 | 2 | 3 | |
| Pseudocyst drainage | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| LIVER METASTASES | | | | |
| OBJECTIVES | | | | |
| Assessment and management of liver metastases. | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy - liver segments | 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 | Desirable |
| Decision making including scheduling treatment | 2 | 3 | 4 | |
| Non-operative treatment incl chemotherapy and biological therapy | 3 | 4 | 4 | |
| Interventional options e.g. ablation | 3 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Major hepatectomy + intra-op ultrasound | 1 | 2 | 3 | Desirable |
| Extended hepatectomy | 1 | 2 | 3 | |
| Peripheral wedge or segmental resection | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| PRIMARY LIVER CANCER | | | | |
| OBJECTIVES | | | | |
| Assessment and management of primary liver cancer | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy | 4 | 4 | 4 | |
| Pathophysiology - hepatitis C | 3 | 4 | 4 | |
| Pathology - differential diagnosis, HCC | 3 | 4 | 4 | |
| Clinical Presentation | 3 | 4 | 4 | |
| Complications | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 4 | 4 | 4 | |
| Investigation | 4 | 4 | 4 | Desirable |
| Decision making | 2 | 3 | 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 eg ablation | 3 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Major hepatectomy | 1 | 2 | 3 | Desirable |
| Periperal wedge or segmental resection | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| CHOLANGIOCARCINOMA AND GALLBLADDER CANCER | | | | |
| OBJECTIVES | | | | |
| Assessment and management of cholangiocarcinoma and gallbladder cancer | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy | 4 | 4 | 4 | |
| Pathophysiology, incidental finding at cholecystectomy | 3 | 4 | 4 | |
| Pathology, classification of cholangiocarcinoma | 3 | 4 | 4 | |
| Clinical presentation | 3 | 4 | 4 | |
| Complications | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 4 | 4 | 4 | |
| Investigation, ERCP, MRCP, ST, MRU | 4 | 4 | 4 | Desirable |
| Decision making | 2 | 3 | 4 | |
| Non-operative treatment incl PDT, brachytherapy | 3 | 4 | 4 | |
| Interventional options eg stenting | 3 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Extended hepatectomy | 1 | 2 | 3 | Desirable |
| Central liver resection | 1 | 2 | 3 | |
| Hepatic artery lymphadenectomy | 1 | 2 | 3 | |
| Hepaticoduchojejunostomy | 1 | 2 | 3 | |

| | ST 4 | ST 6 | ST 8 | Areas in which simulatio n should be used to develop relevant skills |
|---|---------|---------|---------|--|
| BENIGN AND CYSTIC TUMOURS | | | | |
| OBJECTIVES | | | | |
| Assessment and management of benign and cystic tumours of the liver | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy | 4 | 4 | 4 | |
| Pathophysiology, simple and complex cysts, hydatid disease | 3 | 4 | 4 | |
| Pathology | 3 | 4 | 4 | |
| Clinical Presentation | 3 | 4 | 4 | |
| Complications | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 3 | 4 | 4 | |
| Investigation, CT, MRI | 3 | 4 | 4 | Desirable |
| Decision making | 2 | 3 | 4 | |
| Non operative options eg medical treatment of hydatid disease | 3 | 4 | 4 | |
| Interventional options eg embolisation | 3 | 4 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Fenestration | 1 | 2 | 3 | sirabl e |
| Liver resection | 1 | 2 | 3 | |

| | ST 4 | ST 6 | ST 8 | Areas in which simulati on should be used to develop relevant skills |
|---|---------|---------|---------|---|
| LIVER TRAUMA | | | | |
| OBJECTIVES | | | | |
| Diagnosis and early management of liver trauma including laparotomy and liver packing or resection. | | | | |
| KNOWLEDGE | | | | |
| Applied Anatomy - liver segments | 3 | 4 | 4 | |
| Pathophysiology | 3 | 4 | 4 | |
| Clinical Presentation - blunt and penetrating | 4 | 4 | 4 | |
| Investigations - CT | 3 | 4 | 4 | |
| Complications - haemobilia | 3 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | 4 | 4 | 4 | |
| Investigation | 4 | 4 | 4 | Desirabl e |
| Resuscitation | 4 | 4 | 4 | |
| Decision making | 2 | 4 | 4 | |
| Non-operative treatment | 2 | 4 | 4 | |
| Interventional options eg hepatic artery embolisation, laparotomy | 2 | 3 | 4 | |
| Postoperative management | 3 | 4 | 4 | |
| TECHNICAL SKILLS | | | | |
| Salvage surgery eg packing | 2 | 3 | 4 | Desirabl e |
| Debridement & hepatectomy | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| HAEMORRHOIDS | | | | |
| OBJECTIVES | | | | |
| Competency in the diagnosis and all medical and surgical treatments for haemorrhoids | | | | |
| KNOWLEDGE | | | | |
| 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 | 3 | 4 | |
| Haemorrhoidectomy-stapled | 1 | 3 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| ANAL FISSURE | | | | |
| OBJECTIVE | | | | |
| Competency in the diagnosis and the medical and surgical treatment of anal fissure | | | | |
| 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, botulinum 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 | 2 | 2 | 4 | |
| TECHNICAL SKILLS | | | | |
| Lateral sphincterotomy | 2 | 2 | 4 | |
| Anal advancement flap for fissure/stenosis | 1 | 1 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| ABSCESS AND FISTULA | | | | |
| OBJECTIVE | | | | |
| Competency in the diagnosis and the medical and surgical treatment of abscess and fistula-in-ano | | | | |
| 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 | 2 | 2 | 4 | |
| Manage rectourethral fistula depending on location and aetiology | 2 | 2 | 3 | |
| TECHNICAL SKILLS | | | | |
| Fistula-in-ano-low-lay open | 2 | 3 | 4 | |
| Fistula-in-ano-high-drainage Seton | 1 | 2 | 4 | |
| Fistula-in-ano-high-cutting seton | 1 | 2 | 4 | |
| Fistula-in-ano-high-advancement flap | 1 | 2 | 3 | |
| Fistula-in-ano - placement of fistula plug | 1 | 2 | 4 | |
| Fistula-operation for rectovaginal fistula | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| HIDRADENITIS SUPPURITIVA | | | | |
| OBJECTIVE | | | | |
| Competency in the diagnosis and management of hidradenitis suppurativa | | | | |
| Knowledge | | | | |
| Pathophysiology of hidradenitis suppurativa | 4 | 4 | 4 | |
| Clinical skills | | | | |
| Assess the symptoms and signs of hidradenitis suppurativa | 4 | 4 | 4 | |
| Manage hidradenitis suppurativa by both medical and surgical means | 2 | 2 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| PILONIDAL DISEASE | | | | |
| OBJECTIVE | | | | |
| Competency in the management of pilonidal disease. | | | | |
| KNOWLEDGE | | | | |
| Pathophysiology of pilonidal disease | 4 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| Assess the symptoms and signs of pilonidal disease: abscess, sinus | 4 | 4 | 4 | |
| 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 | 2 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ANAL STENOSIS | | | | |
| OBJECTIVE | | | | |
| Competency in the management of anal stenosis. | | | | |
| 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 | 2 | 2 | 3 | |
| TECHNICAL SKILLS | | | | |
| Anal advancement flap for fissure/stenosis | 1 | 1 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| PRURITUS ANI | | | | |
| OBJECTIVE | | | | |
| Competency in the management of pruritis ani. | | | | |
| 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 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| SEXUALLY TRANSMITTED DISEASE | | | | |
| OBJECTIVE | | | | |
| Appropriate management of sexually transmitted disease in consultation with other specialists | | | | |
| KNOWLEDGE | | | | |
| Aetiology of condylomata acuminata | 4 | 4 | 4 | |
| Aetiology of HIV, syphilis, gonorrhoea, chlamydia, herpes | 2 | 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 | 2 | 2 | 4 | |
| Medical (topical chemicals) and surgical treatment options for condylomata acuminata | 4 | 4 | 4 | |
| | | | | |
| TECHNICAL SKILLS | | | | |
| Anal skin tags/warts-excision | 2 | 4 | 4 | Strongly recommended: |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| VASCULAR MALFORMATIONS | | | | |
| OBJECTIVES | | | | |
| Management of patients with vascular malformations of the lower GI tract | | | | |
| 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 | 2 | 4 | Desirable |
| Colonoscopy-therapeutic | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| DIVERTICULAR DISEASE | | | | |
| OBJECTIVES | | | | |
| Ability to assess and manage diverticular disease | | | | |
| 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 laparoscopy and washout with drainage for appropriate patients | 2 | 3 | 4 | Strongly recommended: |
| Recognise the indications for 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 | 3 | 4 | Desirable |
| Colectomy-sigmoid | 2 | 3 | 4 | |
| Colostomy-construction | 2 | 3 | 4 | |
| Hartmann's procedure | 2 | 3 | 4 | |
| Hartmann's reversal | 1 | 2 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| VOLVULUS | | | | |
| OBJECTIVE | | | | |
| Competency in the diagnosis and treatment of colonic volvulus | | | | |
| KNOWLEDGE | | | | |
| Aetiology of volvulus of the colon | 4 | 4 | 4 | |
| Incidence and epidemiology 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 | 2 | 4 | 4 | Desirable |
| Sigmoidoscopy-flexible | 2 | 3 | 4 | |
| Colonoscopy-diagnostic | 1 | 2 | 4 | |
| Colonoscopy-therapeutic - insertion of PEC button | 1 | 2 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| RECTAL BLEEDING | | | | |
| OBJECTIVE | | | | |
| Ability to appropriately investigate rectal bleeding | | | | |
| 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 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| MASSIVE LOWER GI BLEEDING | | | | |
| OBJECTIVE | | | | |
| Management of massive lower GI tract bleeding | | | | |
| KNOWLEDGE | | | | |
| Aetiology of massive lower GI bleeding | 4 | 4 | 4 | |
| Utility, specificity and sensitivity of colonoscopy, angiography and radio-isotope 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 intraoperative 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 | |
| Endoscopic treatment of lower GI bleeding including coagulation, injection therapy and laser ablation | 1 | 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 | |
| Intraoperative evaluation and management of persistent massive lower GI bleeding without an identified site | 2 | 3 | 4 | |
| Manage postoperative lower GI bleeding | 2 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Colonoscopy-diagnostic | 1 | 2 | 4 | Desirable |
| Colonoscopy-therapeutic | 1 | 2 | 3 | |
| Colectomy-total+ileostomy | 2 | 3 | 4 | |
| Colectomy-right | 2 | 3 | 4 | |
| Colectomy-left | 2 | 3 | 4 | |
| Colectomy-sigmoid | 2 | 3 | 4 | |
| Colostomy-construction | 2 | 3 | 4 | |
| Hartmann's procedure | 2 | 3 | 4 | |
| Ileostomy-construction | 2 | 3 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| ENDOMETRIOSIS | | | | |
| OBJECTIVE | | | | |
| Management of endometriosis affecting the GI tract with the gynaecologists | | | | |
| 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 | |
| TECHNICAL SKILLS | | | | |
| Assessment of degree of bowel involvement by endometriosis at laparoscopy | 2 | 2 | 2 | |
| Laparoscopic resection of endometriosis from bowel wall by shave or disc excision | 1 | 1 | 2 | |
| Laparoscopic anterior resection for endometriosis | 1 | 1 | 2 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| COLON TRAUMA | | | | |
| OBJECTIVE | | | | |
| Competency in the appropriate diagnosis and treatment of colon trauma | | | | |
| 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 | |
| CLINICAL SKILLS | | | | |
| Manage the patient with penetrating abdominal trauma with understanding of the criteria for exploratory laparotomy, wound exploration, peritoneal lavage | 3 | 4 | 4 | |
| Appropriate surgical management of colon trauma in the context of the severity of associated injuries and stability of medical condition, | 2 | 3 | 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 | Strongly recommended: |
| Colectomy-right | 2 | 3 | 4 | Desirable |
| Colectomy-left | 2 | 3 | 4 | |
| Colectomy-sigmoid | 2 | 3 | 4 | |
| Colectomy-transverse | 2 | 3 | 4 | |
| Colectomy-total+ileostomy | 2 | 3 | 4 | |
| Hartmann's procedure | 2 | 3 | 4 | |
| Colostomy-construction | 2 | 3 | 4 | |
| Ileostomy-construction | 2 | 3 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| RECTAL TRAUMA | | | | |
| OBJECTIVE | | | | |
| Competency in the diagnosis and treatment of rectal trauma | | | | |
| KNOWLEDGE | | | | |
| Identify clinical situations requiring evaluation for rectal trauma | 4 | 4 | 4 | |
| CLINICAL SKILLS | | | | |
| Diagnosis of rectal trauma and associated injuries | 4 | 4 | 4 | |
| Surgical management of rectal trauma including drainage, faecal diversion, rectal washout, primary repair | 1 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Colostomy-construction | 2 | 4 | 4 | Desirable |
| Hartmann's procedure | 2 | 3 | 4 | |
| Ileostomy construction | 2 | 4 | 4 | |
| Rectum-operation for trauma | 2 | 3 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ANAL TRAUMA | | | | |
| OBJECTIVE | | | | |
| Competency in the management of anal trauma | | | | |
| KNOWLEDGE | | | | |
| Be aware of the aetiology of anal trauma including obstetric injuries | 3 | 3 | 4 | |
| CLINICAL SKILLS | | | | |
| Manage traumatic anal injuries by faecal diversion, and/or repair | 3 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Colostomy construction | 2 | 3 | 4 | Desirable |
| Anal sphincter repair including postanal repair, anterior sphincter repair + rectocele repair | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| FOREIGN BODIES | | | | |
| OBJECTIVE | | | | |
| Manage patients with rectal foreign bodies | | | | |
| KNOWLEDGE | | | | |
| Discuss risk of colonic or rectal perforation | 4 | 4 | 4 | |
| 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 | |

LOWER GI – COLORECTAL NEOPLASIA

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| 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 | | | | |
| 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-Jeghers syndrome | 2 | 3 | 4 | |
| 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/clinical code, "touching" vs infiltrating margin, tumour | 4 | 4 | 4 | |
| LOWER GI – COLORECTAL NEOPLASIA | | | | |
| Carcinoembryonic antigen | | | | |
| The significance of extent of disease including patterns of spread: direct continuity, intramural, transmural, distal margins, circumferential margins, transperitoneal, lymphatic, haematogenous, implantation | 4 | 4 | 4 | |
| The assessment of disease extent: detection and management of synchronous lesions, distant metastatic disease, preop detection of local invasion, regional metastatic disease | 3 | 4 | 4 | |
| 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 | 1 | 2 | 4 | Desirable |
| Colonoscopy-therapeutic | 1 | 2 | 3 | |
| 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 | 3 | 4 | |
| Ileostomy-construction | 2 | 3 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| RECTAL CANCER | | | | |
| OBJECTIVES | | | | |
| Management of patients with rectal cancer. | | | | |
| KNOWLEDGE | | | | |
| 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. | 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 endoscopic diagnosis and CT and MRI imaging approaches | 3 | 4 | 4 | |
| Indications for transanal treatment | 2 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Transanal microsurgery | 1 | 1 | 2 | |
| Peranal excision of rectal lesion | 1 | 2 | 4 | |
| Rectum-posterior approach | 1 | 2 | 3 | |
| Rectum-anterior resection (stapled) | 1 | 2 | 4 | Desirable |
| Rectum-anterior resection - coloanal anastomosis | 1 | 2 | 3 | |
| Rectum-AP excision (including ELAPE) | 1 | 2 | 3 | |
| Posterior pelvic clearance | 1 | 2 | 3 | |
| Pelvic exenteration | 1 | 2 | 3 | |
| Reoperation-pelvic malignancy | 1 | 2 | 2 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| 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 | | | | |
| Patterns of recurrence | 4 | 4 | 4 | |
| Detection of recurrence using CEA, colonoscopy and imaging | 3 | 4 | 4 | |
| Pain Management, including 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 | 1 | 2 | 2 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| MISCELLANEOUS MALIGNANT LESIONS | | | | |
| OBJECTIVES | | | | |
| Ability to manage more unusual tumours of the colon and rectum. | | | | |
| 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 | 1 | 2 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ANAL NEOPLASIA (combines anal canal and anal from 2010) | | | | |
| OBJECTIVES | | | | |
| Understanding of the pathophysiology and the management of anal neoplasia | | | | |
| Ability to diagnose and manage anal canal neoplasia | | | | |
| Ability to diagnose and manage anal margin neoplasia | | | | |
| 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 | 3 | 3 | 4 | |
| Changing incidence of anal neoplasia | 3 | 3 | 4 | |
| Association with sexual practices | 3 | 4 | 4 | |
| High-risk groups | 2 | 4 | 4 | |
| Staging classification of anal neoplasia | 2 | 3 | 4 | |
| Epidermoid carcinoma: histologic types, routes of metastasis/recurrence | 2 | 3 | 4 | |
| Role of salvage therapies: abdominoperineal resection, chemotherapy, radiotherapy | 2 | 3 | 4 | |
| Other anal canal malignancies: adenocarcinoma, small cell cancer, melanoma | 2 | 2 | 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 histogenesis, clinical features, management | 2 | 3 | 4 | |
| Buschke-Lowenstein tumour: clinical presentation and course, treatment options | 2 | 3 | 4 | |
| Treatment of epidermoid carcinomas based on stage: local excision, chemoradiotherapy, abdominoperineal resection, inguinal node management | 1 | 2 | 4 | |
| TECHNICAL SKILLS | | | | |
| Anal tumour-excision | 1 | 2 | 3 | |
| Rectum-AP excision | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| PRESACRAL LESIONS | | | | |
| OBJECTIVES | | | | |
| Ability to manage presacral lesions | | | | |
| CLINICAL SKILLS | | | | |
| presentation, differential diagnosis, diagnostic evaluation and treatment of congenital lesions: epidermoid cysts, teratoma, anterior sacral meningocele, rectal duplication | 1 | 2 | 3 | |
| clinical presentation, differential diagnosis, diagnostic evaluation and treatment of neoplastic lesions: osseous (Ewing;s sarcoma, giant-cell tumour), chordoma, neurogenic, miscellaneous | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| 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 | | | | |
| 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 | 3 | 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 | 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 | 3 | 4 | |
| Perform a physical examination to differentiate types of incontinence | 2 | 3 | 4 | |
| Identify and interpret anorectal physiology tests | 1 | 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 | 1 | 2 | 4 | |
| Select type of operative repair | 1 | 2 | 4 | |
| Select patients for temporary and permanent faecal diversion | 1 | 2 | 4 | |
| TECHNICAL SKILLS | | | | |
| Anal sphincter repair including postanal repair, anterior sphincter repair | 1 | 2 | 3 | |
| Anal sphincter - artificial sphincter/sacral nerve stimulation | 1 | 1 | 2 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| RECTAL PROLAPSE | | | | |
| OBJECTIVES | | | | |
| Competency in the management of all patients with rectal prolapse | | | | |
| 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 | 1 | 2 | 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 | 2 | 4 | |
| Manage a patient with recurrent rectal prolapse | 1 | 2 | 4 | |
| TECHNICAL SKILLS | | | | |
| Prolapse-abdominal rectopexy | 1 | 2 | 4 | |
| Prolapse -rectopexy + sigmoid resection | 1 | 2 | 4 | |
| Prolapse-perineal repair | 1 | 2 | 4 | |
| STARR Procedure | 1 | 2 | 3 | |
| Ventral mesh rectopexy | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| SOLITARY RECTAL ULCER | | | | |
| OBJECTIVES | | | | |
| Ability to diagnose and manage solitary ulcer syndrome | | | | |
| 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 medical/surgical treatment options | 1 | 2 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| 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 | | | | |
| 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 | 3 | 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 | 1 | 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 | 1 | 2 | 4 | |
| Manage short segment/adult Hirschsprung's disease | 1 | 2 | 4 | |
| Recognise the clinical presentation of symptomatic rectocele | 1 | 3 | 4 | |
| Diagnosis and both non-operative and operative management of enterocele and sigmoidocele | 1 | 2 | 4 | |
| Evaluation and management of recurrent constipation after colectomy | 1 | 2 | 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 | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| IRRITABLE BOWEL SYNDROME | | | | |
| OBJECTIVE | | | | |
| Competency in the management of irritable bowel syndrome | | | | |
| 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 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| CHRONIC RECTAL PAIN SYNDROME | | | | |
| OBJECTIVE | | | | |
| Competency in the management of chronic rectal pain syndromes | | | | |
| | | | | |
| 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 | 1 | 2 | 3 | |

LOWER GI – INFLAMMATORY BOWEL DISEASE

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| 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. | | | | |
| KNOWLEDGE | | | | |
| Aetiology | 3 | 4 | 4 | |
| 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 - Crohn's 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 Crohn's disease | 3 | 3 | 4 | |
| 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 | | | | |
| Recognise and compare the clinical pattern, presenting symptoms, physical findings and natural history of ulcerative colitis and Crohn's disease | 3 | 4 | 4 | |
| The extraintestinal manifestations of IBD | 3 | 3 | 4 | |
| Diagnostic assessment for inflammatory bowel disease to exclude other colitides | 4 | 4 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| 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 | | | | |
| 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 | |
| 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 colitis | 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 | 2 | 3 | 4 | |
| Follow-up for retained rectum after colectomy | 1 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Colectomy-total+ileostomy | 2 | 3 | 4 | Desirable |
| Colectomy-total+ileorectal anastomosis | 1 | 2 | 4 | |
| Rectum-panproctocolectomy+ileostomy | 1 | 2 | 3 | |
| Ileoanal anastomosis+creation of pouch | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| CROHNS 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 | | | | |
| 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 | |
| Risk of large and small bowel carcinoma in Crohn's disease and risk factors | 3 | 4 | 4 | |
| 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 | 2 | 3 | Desirable |
| Colectomy-right | 2 | 3 | 4 | |
| Colectomy-transverse | 2 | 3 | 4 | |
| Colectomy-left | 2 | 3 | 4 | |

| | | | | |
|--|---|---|---|-----------|
| Colectomy-sigmoid | 2 | 3 | 4 | Desirable |
| Colectomy-total+ileostomy | 2 | 3 | 4 | |
| Colectomy-total+ileorectal anastomosis | 1 | 2 | 4 | |
| Crohn's-ileocaecectomy | 2 | 3 | 4 | |
| Strictureplasty-Crohn's | 1 | 3 | 4 | |
| Gastroenterostomy | 2 | 3 | 4 | |
| Intestinal fistula operation | 1 | 2 | 4 | |
| Fistula-in-ano-high-advancement flap | 1 | 2 | 3 | |
| Fistula-in-ano-high-cutting seton | 1 | 2 | 4 | |
| Fistula in ano-high-drainage seton | 1 | 2 | 4 | |
| Fistula-in-ano-high-other | 1 | 2 | 4 | |
| Fistula-in-ano-low-lay open | 1 | 3 | 4 | |
| Fistula-operation for rectovaginal fistula | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ISCHAEMIC COLITIS | | | | |
| OBJECTIVES | | | | |
| Competency in the management of ischaemic colitis. | | | | |
| KNOWLEDGE | | | | |
| 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 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| RADIATION COLITIS | | | | |
| OBJECTIVE | | | | |
| Competency in the management of radiation bowel disease. | | | | |
| KNOWLEDGE | | | | |
| Risk factors for and susceptibility to injury from radiotherapy | 2 | 4 | 4 | |
| Mechanisms of acute and chronic radiation injury | 2 | 4 | 4 | |
| Microscopic findings of radiation injury | 2 | 3 | 4 | |
| Understand surgical options for radiotherapy injuries | 2 | 3 | 4 | |
| CLINICAL SKILLS | | | | |
| Complications of radiotherapy: fistula, obstruction, malabsorption, necrosis, haemorrhage | 2 | 3 | 3 | |
| Arrange local therapy for radiation proctitis | 2 | 3 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| INFECTIOUS COLITIS | | | | |
| OBJECTIVES | | | | |
| Diagnosis and management of infectious colitis in consultation with infectious disease physicians | | | | |
| KNOWLEDGE | | | | |
| 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 | 4 | |
| Management of diarrhoea in the immunocompromised patient including HIV | 2 | 3 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| MISCELLANEOUS COLITIDES | | | | |
| OBJECTIVES | | | | |
| Competency in the management of the less common colitides. | | | | |
| CLINICAL SKILLS | | | | |
| Manage the following: diversion colitis, neutropenic enterocolitis, collagen-vascular colitis, microscopic colitis | 1 | 2 | 4 | |

| | ST 4 | ST 6 | ST 8 | Areas in which simulatio n should be used to develop relevant skills |
|---|---------|---------|---------|--|
| 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 | | | | |
| 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 | 4 | 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 - 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 | | | | |
| Stoma construction and closure | 2 | 3 | 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 | 2 | 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 | 3 | 4 | Desirable |
| Colostomy-construction | 2 | 3 | 4 | |
| Ileostomy-closure | 2 | 2 | 4 | |
| Colostomy-closure | 2 | 2 | 4 | |
| Hartmann's reversal | 1 | 2 | 4 | |
| Colostomy-revision | 1 | 2 | 4 | |
| Ileostomy-revision | 1 | 2 | 4 | |
| Hernia repair-parastomal | 1 | 2 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| BREAST ASSESSMENT | | | | |
| 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 | 1 | 2 | 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 | 2 | 3 | 4 | |
| Breast assessment | | | | |
| Triple assessment | | | | |
| Understand indications, use, interpretation | 2 | 3 | 4 | |
| Diagnostic grid/concordance | 2 | 3 | 4 | |
| Imaging: | | | | |
| Ultrasound, mammography: standard views | 2 | 3 | 4 | |
| Pathology | | | | |
| Cytology - FNAC | 2 | 3 | 4 | |
| Histology | | | | |
| core biopsy | 2 | 3 | 4 | |
| Punch biopsy | 2 | 3 | 4 | |
| Extended assessment | | | | |
| Additional mammography views | 2 | 3 | 4 | |
| MRI | 2 | 3 | 4 | |
| vacuum biopsy | 2 | 3 | 4 | |
| surgical biopsy | 2 | 3 | 4 | |
| Management | | | | |
| interpret findings | 2 | 3 | 4 | |
| develop plan | 2 | 3 | 4 | |
| communicate findings and plan | 2 | 3 | 4 | |
| CLINICAL SKILLS | | | | |
| History | 2 | 3 | 4 | |

| | | | | |
|---------------------------------------|---|---|---|------------------------------|
| Examination | | | | |
| Breast, nodal basin, relevant systems | 2 | 3 | 4 | |
| Investigation | | | | |
| Triple assessment | 2 | 3 | 4 | |
| Imaging techniques | | | | |
| Ultrasound interpretation | 2 | 3 | 4 | |
| Mammography interpretation | 2 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Fine needle aspiration | | | | |
| Cytology; cyst/abscess drainage | 2 | 3 | 4 | Strongly recommended: |
| Image guided | 1 | 2 | 3 | |
| Core biopsy | | | | |
| Clinical | 2 | 3 | 4 | |
| Image guided | 1 | 2 | 3 | |
| Punch biopsy | 2 | 4 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| BENIGN BREAST CONDITIONS | | | | |
| 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 | 4 | 4 | 4 | |
| Embryology | 4 | 4 | 4 | |
| Pathophysiology | | | | |
| 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 eg eczema | 3 | 4 | 4 | |
| Gynaecomastia | 3 | 4 | 4 | |
| Breast sepsis - Lactational microbiology | 3 | 4 | 4 | |
| Breast sepsis - non lactational | 3 | 4 | 4 | |
| Periductal - microbiology | 3 | 4 | 4 | |
| Other - microbiology | 3 | 3 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | | | | |
| Breast, nodal basin, relevant systems | 2 | 3 | 4 | |
| Investigation | | | | |
| Triple assessment | 2 | 3 | 4 | |
| Imaging techniques | | | | |
| Ultrasound interpretation | 2 | 3 | 4 | Desirable |
| Mammography interpretation | 2 | 3 | 4 | |
| MRI - indications and interpretation | 2 | 3 | 4 | |
| Management plan | 2 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Drainage of breast abscess | | | | |
| Open | 2 | 4 | 4 | Desirable |
| Image guided | 1 | 3 | 4 | |
| Breast lump excision | 2 | 4 | 4 | |
| Excision image guided lesion | 1 | 3 | 4 | |
| Microdochectomy | 1 | 3 | 4 | |
| Major duct excision | 1 | 3 | 4 | |
| Fistulectomy | 1 | 3 | 4 | |
| Nipple eversion | 1 | 3 | 4 | |
| Reduction Mammoplasty | 1 | 3 | 4 | |
| Mastopexy | 1 | 3 | 4 | |
| Augmentation | 1 | 3 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| BREAST CANCER | | | | |
| 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 | 3 | 3 | 4 | |
| Pathology of in-situ breast cancer | | | | |
| Clinicopathology | 3 | 3 | 4 | |
| Epidemiology | 3 | 3 | 4 | |
| Invasive breast cancer | | | | |
| Taxonomy | 3 | 3 | 4 | |
| Staging | 3 | 3 | 4 | |
| Epidemiology | 3 | 3 | 4 | |
| Cancer biology | 3 | 3 | 4 | |
| Prognostic factors | | | | |
| Chief prognostic factors | 3 | 3 | 4 | |
| Relevance to treatment | 2 | 3 | 4 | |
| Risk assessment / genetic testing / counselling | | | | |
| Advice, diet, lifestyle, screening, risk reduction surgery | 3 | 3 | 4 | |
| Screening | | | | |
| Evidence, organisation | 2 | 2 | 4 | |
| Delivery, imaging modality, results | 2 | 2 | 4 | |
| Cancer staging | | | | |
| Bone scan, MRI, CT, PET, tumour markers etc | 2 | 3 | 4 | |
| Management/treatment | | | | |
| Risks and benefits of treatment/no treatment | 2 | 3 | 4 | |
| Treatment | | | | |
| Indications for breast conservation / mastectomy / reconstruction | 2 | 3 | 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 | |
| ONCOPLASTIC BREAST | 2 | 3 | 4 | |
| Multidisciplinary Teams | 2 | 3 | 4 | |
| Guidelines and protocols - network, national, etc | | | | |

| | | | | |
|---|---|---|---|-----------|
| NICE | 2 | 3 | 4 | |
| ABS | 2 | 3 | 4 | |
| NHSBSP | 2 | 3 | 4 | |
| Others: ASCO, ST Gallen, | 1 | 1 | 4 | |
| CLINICAL SKILLS | | | | |
| History and Examination | | | | |
| Breast, nodal basin, relevant systems | 2 | 3 | 4 | |
| Investigation | | | | |
| Triple assessment | 2 | 3 | 4 | Desirable |
| Imaging techniques | | | | |
| Ultrasound interpretation | 2 | 3 | 4 | |
| Mammography interpretation | 2 | 3 | 4 | |
| MRI - indications and interpretation | 2 | 3 | 4 | |
| Management plan | | | | |
| Develop and record plan | 2 | 3 | 4 | |
| Communication / informed consent | 2 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Wide local excision | | | | |
| Palpable lesion | 2 | 3 | 4 | Desirable |
| impalpable - localised - wire/skin mark etc | 1 | 2 | 4 | |
| Re-coning | 1 | 2 | 4 | |
| therapeutic mastoplasty - various pedicles/incisions | 1 | 2 | 4 | |
| Grisotti flap | 1 | 2 | 4 | |
| Round block (Benelli) | 1 | 3 | 4 | |
| Mastectomy | | | | |
| Simple | 1 | 3 | 4 | |
| Modified radical | 1 | 2 | 4 | |
| skin sparing - nipple preserving | 1 | 2 | 4 | |
| skin sparing - nipple sacrificed | 1 | 2 | 4 | |
| Skin reducing | 1 | 3 | 4 | |
| Axillary surgery | | | | |
| removal axillary breast tissue/nipple | 1 | 4 | 4 | |
| Lymph node biopsy | 1 | 3 | 4 | |
| Axillary clearance -Primary . Level 1-3 | 1 | 3 | 4 | |
| Axillary clearance -completion (delayed) | 1 | 3 | 4 | |
| Axillary surgery - repeat (recurrence) | 1 | 3 | 4 | |
| SLNB (dual technique) | 1 | 3 | 4 | |
| SLNB (blue dye only) | 1 | 3 | 4 | |
| Reconstructive surgery - immediate and delayed | | | | |
| Implant only - variations | 1 | 3 | 4 | |
| Latissimus dorsi flap + implant | 1 | 2 | 4 | |
| Latissimus dorsi flap - autologous | 1 | 2 | 3 | |
| TRAM flap pedicled | 1 | 2 | 2 | |
| TRAM flap free | 1 | 2 | 2 | |
| DIEP flap | 1 | 2 | 2 | |
| Other flaps | 1 | 1 | 2 | |
| Nipple areolar complex | | | | |
| Nipple free graft | 1 | 2 | 4 | |
| Nipple reconstruction | | | | |
| local flap | 1 | 2 | 4 | |
| Skin graft | 1 | 2 | 4 | |
| Nipple tattoo | 1 | 2 | 4 | |
| Nipple sharing | 1 | 2 | 4 | |
| Symmetrisation surgery | | | | |

| | | | | |
|--|---|---|---|--|
| Reduction mammoplasty | 1 | 2 | 4 | |
| Mastopexy | 1 | 2 | 4 | |
| ONCOPLASTIC BREAST | 1 | 2 | 4 | |
| | 1 | 2 | 4 | |
| Developmental corections - hypoplasia | 1 | 1 | 4 | |
| Lipomodelling | 1 | 1 | 4 | |
| Liposuction - Mammotome/encore system | 1 | 1 | 3 | |
| Vacuum excision | 1 | 2 | 4 | |
| Skin grafting - Chest wall resurfacing | 1 | 2 | 4 | |
| Salvage surgery - VAC dressings | 1 | 1 | 2 | |
| Complex wound management | 1 | 1 | 2 | |
| New techniques | 1 | 1 | 2 | |
| Breast Aesthetics | | | | |
| Breast dimensions | 1 | 2 | 4 | |
| Reduction mammoplasty | 1 | 2 | 4 | |
| Mastopexy | 1 | 2 | 4 | |
| Oncoplastic techniques | 1 | 2 | 4 | |
| Therapeutic mammoplasty | 1 | 2 | 4 | |
| Round block | 1 | 2 | 4 | |
| Grisotti | 1 | 2 | 4 | |
| Symmetrisation surgery | 1 | 2 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| NECK SWELLINGS | | | | |
| OBJECTIVE | | | | |
| Assesment and Management of Neck Swellings | | | | |
| KNOWLEDGE | | | | |
| Anatomy of triangles of neck | | | | |
| Submental, submandibular, anterior, posterior | 4 | | 4 | |
| Causes of enlargement of salivary glands / thyroud gland | | | | |
| Thyroglossal cyst, lymph nodes, | 4 | | 4 | |
| Skin and soft tissue including branchial cyst | 4 | | 4 | |
| Investigation of neck swellings | | | | |
| Diagnostic imaging, ENT assessment, pathology and biochemistry | 4 | | 4 | |
| CLINICAL SKILLS | | | | |
| History and examination of neck swellings | 4 | | 4 | |
| Investigation | | | | |
| Diagnostic imaging | 3 | | 4 | |
| ENT assessment | 3 | | 4 | |
| Pathology | 3 | | 4 | |
| Biochemistry | 3 | | 4 | |
| TECHNICAL SKILLS | | | | |
| Biopsy - FNA | 2 | | 4 | Strongly recommended: |
| Cervical lymph node biopsy | 2 | | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| 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 | | | | |
| KNOWLEDGE | | | | |
| Anatomy of the neck, in particular thyroid and parathyroid glands | 4 | | 4 | |
| Pathophysiology of thyroid swellings | | | | |
| Generalised/solitary; functioning/non-functioning | 3 | | 4 | |
| Benign disorders of thyroid growth | | | | |
| Diffuse enlargement, nodular disease | 3 | | | |
| Disorders of thyroid function | | | | |
| Causes, Treatment options | 3 | | | |
| Medical treatment of thyrotoxicosis | 2 | | 3 | |
| Thyroid malignancy | | | | |
| Differentiated, medullary, anaplastic, lymphoma | 3 | | 4 | |
| Genetic implications of thyroid malignancy | 2 | | 4 | |
| Principles of operation for thyroid swellings and thyrotoxicosis | 2 | | 4 | |
| Complications of thyroid surgery | 3 | | 4 | |
| Thyroid replacement therapy in benign disease | 2 | | 4 | |
| Follow up and non surgical management / treatment of thyroid malignancy | 2 | | 4 | |
| CLINICAL SKILLS | | | | |
| History and examination | 4 | | 4 | |
| Investigations | | | | |
| Thyroid function, autoantibodies | 2 | | 4 | |
| FNA, Ultrasound, Isotope scan | 2 | | 4 | Desirable |
| Indications for surgery | | | | |
| Thyroxicosis, benign nodular disease, malignancy | 2 | | 4 | |
| Decisions for operative or non-operative management | 2 | | 4 | |
| Choice of operation | 2 | | 4 | |
| Postoperative management | 2 | | 4 | |
| Postop bleeding, airway problems, hypercalcaemia | 4 | | 4 | |
| Diagnosis and management of recurrent thyroid disease | | | | |
| benign / malignant, MDT discussions | 2 | | 4 | |
| TECHNICAL SKILLS | | | | |
| Thyroid lobectomy | 1 | | 4 | Desirable |
| Subtotal thyroidectomy | 1 | | 4 | |
| Total Thyroidectomy | 1 | | 4 | |
| Thyroidectomy - toxic goitre | 1 | | 4 | |

| | | | | |
|---|---|--|---|--|
| Thyroidectomy - total + cervical node dissection - central and lateral compartments | 1 | | 4 | |
| Thyroid surgery - reoperation | 1 | | 4 | |
| Cervical approach to retrosternal goitre | 1 | | 4 | |
| Sternotomy for retrosternal goitre | 1 | | 4 | |
| Thymectomy - transcervical approach | 1 | | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| 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-exploraton of the neck | | | | |
| Post operative management: post operative management after parathyroid surgery | | | | |
| KNOWLEDGE | | | | |
| Anatomy / embryology / pathophysiology | 4 | | 4 | |
| Genetic implication of parathyroid disease | 3 | | 4 | |
| Hypercalcaemia | | | | |
| Causes | 4 | | 4 | |
| Investigation | 4 | | 4 | |
| Medical management | 3 | | 4 | |
| Hypocalcaemia | | | | |
| Causes | 4 | | 4 | |
| Investigation | 4 | | 4 | |
| Medical management | 3 | | 4 | |
| Causes of hyperparathyroidism | | | | |
| Primary, renal, MEN, persistent or recurrent carcinoma | 3 | | 4 | |
| Diagnosis and assessment | 2 | | 4 | |
| Indications for and types of imaging | 2 | | 4 | |
| Indications for surgery in renal parathyroid disease | 2 | | 4 | |
| Surgical strategies for hyperparathyroidism | 2 | | 4 | |
| Intraoperative management | | | | |
| Frozen section, PTH assay | 2 | | 4 | |
| Complications of parathyroid surgery | 4 | | 4 | |
| Options for and organisation of follow-up | 2 | | 4 | |
| CLINICAL SKILLS | | | | |
| History and examination | 3 | | 4 | |
| Investigations - biochemical, radiological | 3 | | 4 | Desirable |
| Selection for surgery | 2 | | 4 | |
| Options | | | | |
| 4 gland exploration, single gland exploration | 2 | | 4 | |
| Subtotal resection, Transcervical thymectomy | 2 | | 4 | |
| Focussed approach to parathyroid surgery | 2 | | 4 | |
| Indications for mediastinal exploration | 2 | | 4 | |
| Postop complications | | | | |
| Bleeding, airway problems, hypocalcaemia | 4 | | 4 | |
| TECHNICAL SKILLS | | | | |
| Parathyroidectomy | 1 | | 4 | |

| | | | | |
|-----------------------------------|---|--|---|--|
| Parathyroid surgery - reoperation | 1 | | 4 | |
| Thymectomy - transcervical | 1 | | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| ADRENAL | | | | |
| OBJECTIVE | | | | |
| Assessment and management of enlarged adrenal gland including operation | | | | |
| Diagnosis and assessment of adrenal swellings | | | | |
| Operative management: principles of operative management of adrenal swellings | | | | |
| Postoperative management: basic postoperative management of patients who have had adrenalectomy | | | | |
| KNOWLEDGE | | | | |
| Anatomy and physiology of adrenal | 3 | | 4 | |
| Genetic implications of adrenal disease | 2 | | 4 | |
| Causes of adrenal mass | 3 | | 4 | |
| Disorders of adrenal function | | | | |
| Hyperadrenalism | 2 | | 4 | |
| Hypoadrenalism | 2 | | 4 | |
| Indications for surgery | 2 | | 4 | |
| Effect of hormone producing tumours in perioperative period | 2 | | 4 | |
| 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 | 2 | | 4 | |
| Investigations - Biochemical, radiological | 2 | | 4 | Desirable |
| Selection for surgery | 2 | | 4 | |
| Preoperative preparation for hormone secreting tumours | | | | |
| Endocrinologist, Anaesthetist consultation | 1 | | 4 | |
| Postop management of acute adrenal insufficiency | 2 | | 4 | |
| Postoperative management of patients with hormone secreting tumours | 2 | | 4 | |
| Management of postop bleeding and infection | 2 | | 4 | |
| Appropriate follow-up | 2 | | 4 | |
| TECHNICAL SKILLS | | | | |
| Adrenalectomy | 1 | | 3 | Desirable |

| | ST 4 | ST 6 | ST 8 | Areas in which simulatio n should be used to develop relevant skills |
|---|---------|---------|---------|--|
| 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 | | | | |
| KNOWLEDGE | | | | |
| Presentation of neuroendocrine tumours | | | | |
| Insulinoma, gastrinoma, MEN1, glucagonoma, VIPoma, nonfunctioning tumour | 2 | | 4 | |
| Investigation | 2 | | 4 | |
| Treatment options | 2 | | 4 | |
| Complications | | | | |
| Bleeding, fistulae, diabetes | 2 | | 4 | |
| CLINICAL SKILLS | | | | |
| History and examination | 2 | | 4 | |
| Investigations | | | | |
| Biochemical, radiological, preop and intraop, ERCP, EUS | 2 | | 4 | Desirable |
| Treatment options (Laparoscopic or open) and preop preparation | | | | |
| Pancreatic resection, enucleation, biliary bypass, hepatic resection, ablation of tumour | 2 | | 3 | |
| Metastatic disease management | 2 | | 3 | |
| Postop complications | | | | |
| Indication for re-operation, Pancreatic leak / fistula, nutrition | 2 | | 4 | |
| TECHNICAL SKILLS | | | | |
| Reoperation | 1 | | 3 | |
| Pancreas enucleation | 1 | | 3 | |
| Distal pancreatectomy | 1 | | 3 | |
| Pancreatico-duodenectomy | 1 | | 3 | |
| Biliary bypass | 1 | | 4 | Desirable |
| Left hepatectomy | 1 | | 3 | |
| Right hepatectomy | 1 | | 3 | |
| Ablation of hepatic tumour | 1 | | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| 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 | | | | |
| KNOWLEDGE | | | | |
| MEN syndromes | | | | |
| MEN1, MEN2, Familial medullary thyroid cancer | 2 | | 4 | |
| Genetics and screening | 2 | | 4 | |
| Pathophysiology | 2 | | 4 | |
| Clinical presentation | 2 | | 4 | |
| Subclinical disease | 2 | | 4 | |
| Natural history | 2 | | 4 | |
| Diagnosis and management | | | | |
| Medullary thyroid cancer, hyperparathyroidism | 2 | | 4 | |
| Phaeochromocytoma, pancreatic neuroendocrine disease | 2 | | 3 | |
| Indications and timing for surgery | | | | |
| Recurrent MTC, parathyroid disease | 2 | | 4 | |
| Complications of organ related operation | 2 | | 4 | |
| Recurrent disease | 2 | | 4 | |
| CLINICAL SKILLS | | | | |
| History and examination | 2 | | 4 | |
| Investigations | | | | |
| Biochemistry, radiology, cytology/histology, genetic | 2 | | 4 | Desirable |
| Management of at risk patients / families | | | | |
| Counselling, endocrinologist and genetics consultation | 1 | | 4 | |
| Choice of appropriate operation | 1 | | 4 | |
| Postoperative management | | | | |
| Relevant to specific operation | 1 | | 4 | |
| MDT Liaison | 1 | | 4 | |
| TECHNICAL SKILLS | | | | |
| Appropriate endocrine operation | 1 | | 4 | |
| Liaison with appropriate specialist eg pancreatic surgeon | 1 | | 4 | |
| Thyroid lobectomy | 1 | | 4 | Desirable |
| Total thyroidectomy | 1 | | 4 | |
| Thyroidectomy - retrosternal goitre | 1 | | 4 | |
| Total thyroidectomy + cervical node dissection | 1 | | 4 | |
| Thyroid surgery - reoperation | 1 | | 4 | |

| | | | | |
|-----------------------------------|---|--|---|-----------|
| Transcervical thymectomy | 1 | | 4 | |
| Parathyroidectomy | 1 | | 4 | |
| Parathyroid surgery - reoperation | 1 | | 4 | |
| Adrenalectomy | 1 | | 3 | Desirable |

TRANSPLANTATION

| | ST 4 | ST 6 | ST 8 | Areas in which simulation should be used to develop relevant skills |
|--|---------|---------|---------|---|
| ACCESS FOR DIALYSIS | | | | |
| OBJECTIVE | | | | |
| ST4: Gain an understanding of access for renal dialysis: principles of pre- and post-operative care, peritoneal access and vascular access | | | | |
| ST6: Develop skills for providing access for renal dialysis | | | | |
| ST8: Provide access for renal dialysis for most patients with renal failure. | | | | |
| 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 | 2 | 3 | 4 | |
| Cardiac function and venous conduits | 2 | 3 | 4 | |
| CLINICAL SKILLS | | | | |
| Preop preparation including investigations | 2 | 3 | 4 | |
| Identify access site | 1 | 3 | 4 | |
| Needling techniques | | | | |
| Buttonhole | 1 | 4 | 4 | |
| Rope-ladder | 1 | 4 | 4 | |
| PTFE grafts - indications | 2 | 3 | 4 | |
| Postop investigations | 1 | 3 | 4 | |
| Fluid management | 1 | 3 | 4 | |
| Drug therapy | 1 | 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) | 2 | 4 | 4 | Strongly recommended : |
| Insert and remove peritoneal catheters | 2 | 4 | 4 | Strongly recommended : |
| A-V fistula ligation | 2 | 4 | 4 | |

TRANSPLANTATION

| | | | | |
|---|---|---|---|-----------|
| Construct a-v fistula | | | | |
| radio-cephalic, brachio-cephalic, brachio-basilic, basilic vein transposition | 2 | 3 | 4 | Desirable |
| Access secondary vascular | 1 | 3 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| ORGAN RETRIEVAL | | | | |
| OBJECTIVE | | | | |
| The ability to retrieve abdominal organs for transplantation | | | | |
| KNOWLEDGE | | | | |
| Contraindications to organ donation | | | | |
| General | 3 | 4 | 4 | |
| Organ specific | 3 | 4 | 4 | |
| Criteria for brain stem death and circulatory death | 3 | 4 | 4 | |
| Pathophysiology of brain stem death and circulatory death | 3 | 4 | 4 | |
| Principles of donor management | 2 | 3 | 4 | |
| Principles of organ preservation | 2 | 4 | 4 | |
| Surgical anatomy of multi-organ retrieval | 2 | 3 | 4 | |
| CLINICAL SKILLS | | | | |
| Assess and manage donors - living and deceased | 1 | 3 | 4 | |
| Multiple abdominal organ retrieval from deceased donors | 1 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Kidney retrieval - donor: deceased | 1 | 3 | 4 | Desirable |
| Kidney retrieval - donor: live | 1 | 2 | 3 | |
| Liver retrieval - donor: deceased hepatectomy | 1 | 3 | 4 | |
| Pancreatic transplant - donor pancreatectomy | 1 | 3 | 4 | |

TRANSPLANTATION

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| KIDNEY TRANSPLANT | | | | |
| OBJECTIVE | | | | |
| ST4: Gain early exposure to kidney transplantation; understand and apply principles of pre- and post-operative care and observe deceased and living donor transplantation. | | | | |
| ST6: Ability to assess patients for kidney transplantation and manage their care with assistance. | | | | |
| ST8: Ability to assess patients for kidney transplantation and manage their care. | | | | |
| KNOWLEDGE | | | | |
| Causes of acute kidney injury (AKI) and chronic kidney disease (CKD) | 3 | 4 | 4 | |
| Pathophysiology of AKI & CKD | 3 | 4 | 4 | |
| Treatment options | 3 | 4 | 4 | |
| Complications | 3 | 4 | 4 | |
| Indications for kidney transplantation | 2 | 4 | 4 | |
| Deceased and living kidney donation | 2 | 4 | 4 | |
| Kidney anatomy and anomalies | 2 | 4 | 4 | |
| Implantation site | 2 | 4 | 4 | |
| Immunology | | | | |
| HLA matching, cytotoxic cross match, rejection, immunosuppression | 2 | 3 | 4 | |
| Cytotoxic cross match | 2 | 3 | 4 | |
| Rejection | 2 | 3 | 4 | |
| Immunosuppression | 2 | 3 | 4 | |
| Principles of pre and postop management | 2 | 3 | 4 | |
| CLINICAL SKILLS | | | | |
| Select appropriate patient from waiting list | 1 | 3 | 4 | |
| Postop care - Fluid balance, drug therapy, renal biopsy | 1 | 3 | 4 | |
| Postop complications | | | | |
| Vascular, ureteric complications | 1 | 3 | 4 | |
| Rejection | 1 | 3 | 4 | |
| Infection | 1 | 3 | 4 | |
| Drug side effects | 1 | 3 | 4 | |
| TECHNICAL SKILLS | | | | |
| Transplant - donor operation - deceased | 1 | 3 | 4 | Desirable |
| Transplant - donor operation - live donor | 1 | 2 | 3 | |
| Kidney transplant - complete operation - deceased donor | 1 | 2 | 4 | |
| Kidney transplant - complete operation - live donor | 1 | 1 | 3 | |
| Kidney transplant - complete operation - regraft | 1 | 1 | 4 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|-----|-----|---|
| PAEDIATRIC KIDNEY TRANSPLANTATION | | | | |
| OBJECTIVE | | | | |
| Ability to assess patients for kidney transplantation and manage their care | | | | |
| KNOWLEDGE | | | | |
| Acute and chronic renal failure | | | | |
| Causes, pathophysiology, treatment options, Complications | 1 | 3 | 4 | |
| Indications and contraindications | | | | |
| Kidney transplantation | 1 | 3 | 4 | |
| Deceased and living kidney donation | 1 | 3 | 4 | |
| Kidney anatomy and anomalies | 1 | 3 | 4 | |
| Implantation site | 1 | 3 | 4 | |
| Immunology | | | | |
| HLA matching, cytotoxic cross match, rejection, immunosuppression | 1 | 3 | 4 | |
| Preop and postop management | 1 | 3 | 4 | |
| CLINICAL SKILLS | | | | |
| Select appropriate patient | 1 | 2 | 3 | |
| Postop care with paediatric nephrologist | 1 | 2 | 3 | |
| Fluid management, drug therapy, renal biopsy | 1 | 2 | 3 | |
| Postop complications | | | | |
| Vascular, ureteric | 1 | 1 | 2 | |
| Rejection, infection drug side effects | 1 | 1 | 2 | |
| TECHNICAL SKILLS | | | | |
| Paediatric - deceased donor kidney transplant | 1 | 2 | 3 | |
| Paediatric live donor nephrectomy | 1 | 2 | 3 | |
| Paediatric live donor transplant | 1 | 2 | 3 | |

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| 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. | | | | |
| KNOWLEDGE | | | | |
| Diabetes | | | | |
| Causes | 3 | 3 | 4 | |
| Pathophysiology | 3 | 3 | 4 | |
| Treatment options | 3 | 3 | 4 | |
| Complications | 3 | 3 | 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 | 2 | 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 | 1 | 2 | |
| Postop care | | | | |
| Fluid management, drug therapy, pancreatic biopsy | 1 | 1 | 2 | |
| Postop complications | | | | |
| Vascular, duct leaks, pancreatitis | 1 | 1 | 1 | |
| Rejection, infection, drug side effects | 1 | 1 | 1 | |
| TECHNICAL SKILLS | | | | |
| Pancreatic transplant - donor pancreatectomy | 1 | 3 | 4 | |
| Pancreatic transplant implant graft | 1 | 1 | 1 | |
| Convert bladder drainage to enteric drainage | 1 | 1 | 1 | |

TRANSPLANTATION

| | ST4 | ST6 | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|-----|-----|---|
| LIVER TRANSPLANTATION | | | | |
| OBJECTIVE | | | | |
| ST6: Assess and manage patients undergoing liver transplantation with assistance | | | | |
| ST8: Assess and manage patients undergoing liver transplantation | | | | |
| KNOWLEDGE | | | | |
| Acute and chronic liver failure | | | | |
| Causes | 2 | 2 | 3 | |
| Pathophysiology | 2 | 2 | 3 | |
| Complications | 2 | 2 | 3 | |
| Treatment options | 2 | 2 | 3 | |
| Indications and contraindications | | | | |
| Liver transplant | 1 | 2 | 3 | |
| Deceased and live liver donation | 1 | 2 | 3 | |
| Liver anatomy | | | | |
| Anatomical variants | 1 | 2 | 3 | |
| Surgical anatomy for splitting, reduction, live donation | 1 | 2 | 3 | |
| Immunology | | | | |
| Rejection | 1 | 2 | 3 | |
| Immunosuppression | 1 | 2 | 3 | |
| Preop preparation and postop management | 1 | 2 | 3 | |
| Perioperative management | 1 | 2 | 3 | |
| Complications of liver transplantation | 1 | 2 | 3 | |
| CLINICAL KNOWLEDGE | | | | |
| Select appropriate patients | 1 | 1 | 2 | |
| Postop care | | | | |
| Fluid management, drug therapy, liver biopsy | 1 | 1 | 2 | |
| Diagnose and treat complications | | | | |
| Vascular, biliary | 1 | 1 | 2 | |
| Rejection | 1 | 1 | 2 | |
| Infection | 1 | 1 | 2 | |
| Recurrent disease | 1 | 1 | 2 | |
| Drug side effects | 1 | 1 | 2 | |
| Liver biopsy | 1 | 1 | 2 | |
| TECHNICAL SKILLS | | | | |
| Liver transplant - donor - deceased hepatectomy | 1 | 3 | 4 | |
| Liver transplant - recipient operation | 1 | 1 | 1 | |

| | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|---|
| ABDOMINAL PAIN IN CHILDHOOD | | |
| OBJECTIVES | | |
| The ability to assess and manage a child with abdominal pain including appendicectomy. | | |
| KNOWLEDGE | | |
| Pattern of symptoms and relation to likely pathology and age of child | 4 | |
| Differential diagnosis | 4 | |
| Place and value of investigations | 4 | |
| Place of operative intervention, and associated outcomes | 4 | |
| CLINICAL SKILLS | | |
| Ability to assess ill child | 4 | |
| Ability to form a viable investigation and treatment plan | 4 | |
| TECHNICAL SKILLS | | |
| Appendicectomy | 4 | |
| Laparotomy/laparoscopy | 4 | |

| | ST 8 | Areas in which simulatio n should be used to develop relevant skills |
|--|---------|--|
| INTUSSUSCEPTION | | |
| Objective | | |
| The ability to assess and manage a child with intussusception including management with an expert radiologist and operation. | | |
| Knowledge | | |
| Pattern of symptoms and relation to likely pathology and age of child | 4 | |
| Role of radiology both for diagnosis and interventional management | 4 | |
| Differential diagnosis | 4 | |
| Clinical Skills | | |
| Ability to assess child and recognise severity of illness | 4 | |
| Ability to take appropriate resuscitative measures and form a viable investigation and treatment plan | 4 | |
| Treatment Plan | | |
| Ability to communicate with all relevant groups, including referral for specialist treatment | 4 | |
| Reduction of intussusception | 2 | |

| | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|---|
| CHILD WITH VOMITING | | |
| Objective | | |
| The ability to assess a child with vomiting. | | |
| Knowledge | | |
| Patterns of symptoms and relation to likely pathology | 4 | |
| Significance of bile stained vomiting | 4 | |
| Place and value of investigations | 4 | |
| Differential diagnosis | 4 | |
| Methods of medical management | 4 | |
| Place of operative intervention, and associated outcomes | 4 | |
| Clinical Skills | | |
| Ability to assess ill child including an assessment of severity of dehydration | 4 | |
| Ability to form a viable investigation and treatment plan | 4 | |
| Technical Skills | | |
| Pyloromyotomy | 2 | |

GENERAL SURGERY OF CHILDHOOD

| | ST 8 | Areas in which simulatio n should be used to develop relevant skills |
|---|---------|--|
| CONSTIPATION | | |
| Objective | | |
| The ability to assess and manage a child with constipation | | |
| Knowledge | | |
| Pattern of symptoms and relation to likely pathology and age of child | 4 | |
| Place and value of investigations | 4 | |
| Differential diagnosis to include medical anomalies and sociopsychological aspects of symptom | 4 | |
| Clinical Skills | | |
| Ability to assess child | 4 | |
| Ability to form a viable investigation and treatment plan | 4 | |
| To include community aspects of further management | 4 | |
| Technical Skills | | |
| Manual evacuation | 4 | |

| | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|---|
| 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 | | |
| KNOWLEDGE | | |
| Epigastric hernia: | | |
| Developmental anatomy | 4 | |
| Natural history | 4 | |
| Indications for and outcomes of surgery | 4 | |
| Supra-umbilical hernia: | | |
| Developmental anatomy | 4 | |
| Natural history to include contrast with umbilical hernia | 4 | |
| Indications for and outcomes of surgery | 4 | |
| Umbilical hernia: | | |
| Developmental anatomy | 4 | |
| Natural history | 4 | |
| Indications for and outcomes of surgery | 4 | |
| Place of conservative management | 4 | |
| CLINICAL SKILLS | | |
| Epigastric hernia: | | |
| Ability to assess child and reach appropriate diagnosis | 4 | |
| Ability to form a treatment plan | 4 | |
| Supra-umbilical hernia: | | |
| Ability to assess child and reach appropriate diagnosis | 4 | |
| Ability to form a treatment plan | 4 | |
| Umbilical hernia: | | |
| Ability to assess child and reach appropriate diagnosis | 4 | |
| Ability to form a treatment plan | 4 | |
| TECHNICAL SKILLS | | |
| Epigastric hernia: | | |
| Abdominal wall hernia operation | 4 | |
| Supra-umbilical hernia: | | |
| Abdominal wall hernia operation | 4 | |
| Umbilical hernia: | | |
| Abdominal wall hernia operation | 4 | |

| | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|---|
| 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 | | |
| Knowledge | | |
| Undescended testis | | |
| Developmental anatomy | 4 | |
| Natural history of undescended testis and retractile testis | 4 | |
| Place of conservative management | 4 | |
| Indications for and outcomes of surgery | 4 | |
| Penile inflammatory conditions | | |
| Developmental anatomy | 4 | |
| Natural history | 4 | |
| Place of conservative management | 4 | |
| Indications for and outcomes of surgery | 4 | |
| Inguinal Hernia | | |
| Developmental anatomy | 4 | |
| Natural history | 4 | |
| Indications for and outcomes of surgery | 4 | |
| Hydrocele | | |
| Developmental anatomy | 4 | |
| Natural History | 4 | |
| Place of conservative management | 4 | |
| Indications for and outcomes of surgery | 4 | |
| Acute scrotum | | |
| Natural history | 4 | |
| Place of conservative management | 4 | |
| Indications for and outcomes of surgery | 4 | |
| CLINICAL SKILLS | | |
| Undescended testis | | |
| Ability to assess child and reach appropriate diagnosis | 4 | |
| Ability to form a treatment plan | 4 | |
| Ability to differentiate true undescended testis from retractile variant | 4 | |
| Penile inflammatory conditions | | |
| Ability to assess child and reach appropriate diagnosis | 4 | |
| Ability to form a treatment plan | 4 | |
| Inguinal Hernia | | |
| Ability to assess child and reach appropriate diagnosis | 4 | |
| Ability to form a treatment plan | 4 | |

| | | |
|---|---|--|
| Hydrocele | | |
| Ability to assess child and reach appropriate diagnosis | 4 | |
| Ability to form a treatment plan | 4 | |
| Acute scrotum | | |
| GENERAL SURGERY OF CHILDHOOD | 4 | |
| | 4 | |
| TECHNICAL SKILLS | | |
| Undescended testis | | |
| Orchidopexy | 3 | |
| Penile inflammatory conditions | | |
| Circumcision | 4 | |
| Inguinal hernia | | |
| Inguinal hernia (not neonatal) operation | 4 | |
| Hydrocele | | |
| Hydrocele operation | 4 | |
| Acute scrotum | | |
| Inguinal hernia (not neonatal) operation | 4 | |
| Hydrocele operation | 4 | |
| Operation for testicular torsion | 4 | |

| | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|---|
| 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. | | |
| Knowledge | | |
| Haematuria | | |
| Pattern of symptoms and relation to likely pathology and age of child | 4 | |
| Place and value of investigations | 4 | |
| Differential diagnosis | 4 | |
| Urinary Tract Infection | | |
| Pattern of symptoms and relation to likely pathology and age of child | 4 | |
| Place and value of investigations | 4 | |
| Differential diagnosis | 4 | |
| Circumcision | | |
| Developmental anatomy of the foreskin | 4 | |
| Natural history of the foreskin | 4 | |
| Clinical Skills | | |
| Haematuria: Ability to assess child | 4 | |
| Ability to form a viable investigation and treatment plan | 4 | |
| Ability to communicate with all relevant groups | 4 | |
| Urinary Tract Infection: Ability to assess child | 4 | |
| Ability to form a viable investigation and treatment plan | 4 | |
| Ability to communicate with all relevant groups | 4 | |
| Circumcision | | |
| Ability to assess indications for circumcision | 4 | |
| Technical Skills | | |
| Haematuria: Suprapubic catheter insertion | 4 | |
| Circumcision: Circumcision | 4 | |

| | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|---|
| HEAD AND NECK SWELLINGS | | |
| Objective | | |
| The ability to assess and manage a child with a head and neck swelling | | |
| Knowledge | | |
| Pattern of symptoms and relation to likely pathology and age of child | 4 | |
| Place and value of investigations | 4 | |
| Differential diagnosis | 4 | |
| Relevance of embryonic development of head and neck structures | 4 | |
| Clinical Skills | | |
| Ability to assess child | 4 | |
| Ability to form a viable investigation and treatment plan | 4 | |
| Technical Skills | | |
| Lymph node biopsy | 3 | |

| | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|---|
| TRAUMA (see also Emergency General Surgery) | | |
| Objective | | |
| The ability to assess and manage a child with trauma. | | |
| Knowledge | | |
| Algorithms for assessment of trauma victims - primary survey | 4 | |
| Algorithms for assessment of trauma victims - secondary survey | 4 | |
| Likely effects of different types of trauma and relation to age of child | 4 | |
| Investigation protocols and local variations thereof | 4 | |
| Awareness of NAI and local procedures for dealing with this category of trauma | 4 | |
| Clinical Skills | | |
| Ability to appropriately assess trauma cases and carry out resuscitative measures | 4 | |
| Ability to prioritise interventions | 4 | |
| Ability to act as part of a team or lead team as appropriate | 4 | |
| PALS course | 4 | |
| Technical Skills | | |
| Chest drain insertion | 4 | |
| Central venous line insertion | 3 | |
| Suprapubic catheter insertion | 4 | |

| | ST 8 | Areas in which simulatio n should be used to develop relevant skills |
|--|---------|--|
| MISCELLANEOUS | | |
| Objective | | |
| The ability to assess and manage a child with superficial abscess or with ingrowing toenail. | | |
| Knowledge | | |
| Superficial Abscess | | |
| Causes of superficial abscess in children | 4 | |
| Anatomy of underlying structures | 4 | |
| Predisposing conditions | 4 | |
| Ingrowing Toenail | | |
| Causes of ingrowing toenail | 4 | |
| Anatomy of nail and nail bed | 4 | |
| Treatment options available | 4 | |
| Clinical Skills | | |
| Superficial Abscess | | |
| History and examination | 4 | |
| Recognition of the need for other investigation | 4 | |
| Recognition of need for drainage or antibiotics | 4 | |
| Ingrowing Toenail | | |
| History and examination | 4 | |
| Recognition of need for operative treatment | 4 | |
| Technical Skills | | |
| Superficial Abscess | | |
| Abscess drainage | 4 | |
| Ingrowing Toenail | | |
| Ingrowing toenail operation | 4 | |

| | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|---|
| OPHTHALMOLOGY | | |
| OBJECTIVE | | |
| Ability to deal with common minor eye emergencies and refer serious problems appropriately | | |
| KNOWLEDGE | | |
| Anatomy of the eye | 2 | |
| Causes and presentation of foreign bodies in the eye | 2 | |
| Cause and presentation of dendritic ulcer | 2 | |
| Causes of flash burns to the eye | 2 | |
| Common eye infection, their presentation and complications | 2 | |
| Other causes of red eye, including glaucoma | 2 | |
| CLINICAL SKILLS | | |
| Examination of the eye | 3 | |
| Removal of foreign bodies from cornea | 3 | |
| Diagnosis and management of dendritic ulcer | 3 | |
| Diagnosis and management of flash burns | 3 | |
| Diagnosis and management of common eye infections | 3 | |
| Slit lamp examination | 3 | |

| | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|---|
| OTOLARYNGOLOGY | | |
| OBJECTIVE | | |
| Ability to deal with common minor ENT emergencies and refer serious problems appropriately | | |
| KNOWLEDGE | | |
| Anatomy of the nose, external auditory canal and pharynx | 2 | |
| Presentation and complications of foreign bodies in nose, auditory canal and pharynx | 2 | |
| CLINICAL SKILLS | | |
| Examination of the ear, nose and throat | 3 | |
| Removal of foreign bodies from external auditory canal and nose | 3 | |
| Removal of fish bones etc. from the pharynx | 3 | |
| Packing of noses - anterior and posterior | 3 | |
| Treatment of epistaxis | 3 | |

| | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|---|
| DENTAL | | |
| OBJECTIVE | | |
| Ability to deal with common minor dental emergencies and refer serious problems appropriately | | |
| CLINICAL SKILLS | | |
| Sewing bleeding sockets after extractions | 3 | |
| Broken teeth - using temporary 'putty' and management of the tooth knocked out intact using milk | 3 | |
| Management of dental abscesses | 3 | |

| | ST8 | Areas in which simulation should be used to develop relevant skills |
|---|-----|---|
| 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. | | |
| KNOWLEDGE | | |
| Pathophysiology of burn injury | 3 | |
| Complications of burn injury | 3 | |
| CLINICAL SKILLS | | |
| Assessment and resuscitation of burn victims | 3 | |
| Identification of burn victims with potential airway problems and emergency management in conjunction with anaesthetists | 3 | |
| Appropriate referral and transfer to regional burns centre | 3 | |
| Management of minor burns conservatively or by split skin graft | 3 | |
| TECHNICAL SKILLS | | |
| Skin graft | 3 | |

| | ST8 | Areas in which simulation should be used to develop relevant skills |
|--|-----|---|
| NEUROSURGERY | | |
| OBJECTIVE | | |
| Ability to deal with minor head injuries and to refer serious serious head injuries appropriately. In extreme circumstances, emergency surgical treatment of serious head injuries may be necessary. | | |
| See orthopaedic surgery for spinal injuries. | | |
| KNOWLEDGE | | |
| Anatomy of skull, brain and meninges | 2 | |
| Pathophysiology of head injury | 2 | |
| Appropriate emergency investigation of head injuries | 3 | |
| Indications for surgical intervention in extreme circumstances after discussion with regional neurosurgical centre | 3 | |
| CLINICAL SKILLS | | |
| Assessment and resuscitation of head injuries | 3 | |
| TECHNICAL SKILLS | | |
| Burr hole(s)/craniotomy | 3 | |

VASCULAR Special Interest topics (2010 curriculum)

The August 2013 syllabus does not include the full range of skills required by a vascular specialist. General Surgery trainees (appointed to an NTN before 1 January 2013) will be able to continue full training in Vascular Surgery alongside their General Surgery if they choose Vascular Surgery as their special interest. In order to accommodate this, the complete vascular section of the 2010 curriculum is appended below.

Trainees appointed to General Surgery in the 2013 selection process and thereafter will not have the option of following the 2010 vascular section.

VASCULAR

| | | | | | | Areas in which simulation should be used to develop relevant skills |
|--|--|--|----------------------|----------------------|----------------------|---|
| SUPERFICIAL VENOUS DISEASE | | | | | | |
| | | | | | | |
| | | | S T 4 | S T 6 | S T 8 | |
| 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 sclerotherapy | | 2 | 3 | 4 | | |
| Endovascular ablation | | 1 | 3 | 4 | | |
| Surgery | Multiple phlebectomies | 2 | 3 | 4 | | |
| | Sapheno-femoral junction ligation | 3 | 4 | 4 | Desirable | |
| | Sapheno-popliteal vein ligation | 2 | 3 | 4 | | |
| | Long saphenous vein strip | 3 | 4 | 4 | | |
| | Endovenous ablation of long saphenous vein | 3 | 4 | 4 | Desirable | |
| | Endovenous ablation of short saphenous vein | 3 | 4 | 4 | | |
| | | | | | | |
| | | | | | | |

| | | | | | Areas in which simulation should be used to develop relevant skills |
|--|-----------------------------|------------|-------------|-------------|---|
| DEEP VENOUS DISEASE | | | | | |
| OBJECTIVE | | | | | |
| Assessment and management of patient with deep venous insufficiency (incl DVT) | | | | | |
| | | ST4 | ST 6 | ST 8 | |
| 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 | | | | | Areas in which simulation should be used to develop relevant skills |
|--|--|-------------------------------|------------|------------|--|
| | | 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 | Desirable |
| Surgical control of upper and lower limb blood vessels | | | | | |
| | | 2 | 3 | 4 | |
| Embolectomy | | Strongly recommended: | | | |
| | | 2 | 3 | 4 | |
| On table angiography and thrombolysis | | | | | |
| | | 1 | 3 | 4 | |
| Emergency arterial reconstruction | | | | | |
| | | 1 | 2 | 4 | |
| Fasciotomy | | Desirable | | | |
| | | 3 | 3 | 4 | |
| Emergency venous control and | | | | | |
| | | 1 | 2 | 4 | |

| | | | | | |
|----------------|--|--|--|--|--|
| reconstruction | | | | | |
|----------------|--|--|--|--|--|

| | | | | | Areas in which simulation should be used to develop relevant skills |
|--|---|-------------|-------------|-------------|---|
| CHRONIC ISCHAEMIA | | | | | |
| | | ST 4 | ST 6 | ST 8 | |
| 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 entrapment, 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 | Desirable |
| | 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 | Strongly recommended: |
| | Exposure of axillary artery. | 1 | 2 | 4 | Desirable |
| | 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 | Desirable |
| | 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 | |
| | | | | | |
| | | | | | |

| | | | | | Areas in which simulation should be used to develop relevant skills |
|--|--------------------------|-------------|-------------|-------------|---|
| UPPER LIMB ISCHAEMIA | | | | | |
| | | S T 4 | S T 6 | S T 8 | |
| 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 | Desirable |
| | 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 | Strongly recommended: |
| | Surgical bypass | 1 | 3 | 4 | |

| | | | | | |
|--|-------------------------------|---|---|---|--|
| | Thoracic outlet decompression | 1 | 2 | 3 | |
|--|-------------------------------|---|---|---|--|

| | | | | | Areas in which simulation should be used to develop relevant skills |
|---|--|----------------------|----------------------|----------------------|---|
| ANEURYSMAL DISEASE | | | | | |
| | | | | | |
| OBJECTIVE | | | | | |
| | | | | | |
| Assessment and management of straightforward aortic aneurysms | | | | | |
| Assessment and management of ruptured aortic aneurysm | | | | | |
| | | S T 4 | S T 6 | S T 8 | |
| 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: | 2 | 3 | 4 | |

| | | | | | |
|--|---|-------|---|---|-----------------------|
| | bleeding, thrombosis, embolism, organ failure | | | | |
| | 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 / dissection | 1 | 2 | 4 | Strongly recommended: |
| | 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 | |
| | | N / A | | | |
| | Aneurysm - Supra-renal aortic aneurysm – repair | | 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 | Strongly recommended: |
| | 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 | Strongly recommended: |

| | | | | | Areas in which simulation should be used to develop relevant skills |
|--|---------------------------------------|------------|------------|------------|---|
| 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 | Areas in which simulation should be used to develop relevant skills |
|-----------------------------|---|------------|------------|------------|--|
| 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 | Desirable |
| | 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 | |

| | | | | | Areas in which simulation should be used to develop relevant skills |
|---|--------------------------------|-------------|-------------|-------------|---|
| RENAL VASCULAR DISEASE | | | | | |
| | | ST 4 | ST 6 | ST 8 | |
| | | | | | |
| 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 | | | | | Areas in which simulation should be used to develop relevant skills |
|--|--|------------|------------|------------|---|
| | | 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 | Desirable |
| 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 | |

| | | | | | Areas in which simulation should be used to develop relevant skills |
|---|------------------------|------------|-------------|-------------|---|
| MESENTERIC VASCULAR DISEASE | | | | | |
| | | ST4 | ST 6 | ST 8 | |
| 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 | |

| | | | | | Areas in which simulation should be used to develop relevant skills |
|--|--|-------------|-------------|-------------|---|
| VASCULAR TRAUMA | | | | | |
| | | ST 4 | ST 6 | ST 8 | |
| 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 | Desirable |
| | Lateral suture repair | 2 | 3 | 4 | |
| | End to end anastomosis | 2 | 3 | 4 | Desirable |
| | 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 | |
| | | | | | |

| | | | | | Areas in which simulation should be used to develop relevant skills |
|--|--|-----------------|-----------------|-----------------|---|
| HYPERHYDROSIS | | | | | |
| | | ST 4 | ST 6 | ST 8 | |
| | | | | | |
| 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 | |

| | | | | | Areas in which simulation should be used to develop relevant skills |
|--|--------------------|------------|------------|------------|---|
| 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 | |

| | | | | | Areas in which simulation should be used to develop relevant skills |
|--|---|---------|---------|---------|---|
| INTERVENTIONAL RADIOLOGY | | | | | |
| OBJECTIVE | | | | | |
| | | | | | |
| Radiation safety, principles and indication for imaging and interventional procedures. Understand basics of peripheral angiography and intervention | | ST 4 | ST 6 | ST 8 | |
| | | | | | |
| 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 | Desirable |
| 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 | |
| | | N/A | | | |
| Stenting | Primary and secondary stenting | N/A | 2 | 4 | |

**Oncoplastic Breast Surgery
Training Interface Group Fellowships
Curriculum 2015**

Submitted by the Curriculum Development Group on
behalf of TIG in Oncoplastic Breast Surgery

Objective

To provide a curriculum for surgeons completing a 12 month Training Interface Group (TIG) post in Oncoplastic breast surgery (OPBS). The curriculum will allow surgeons from either a Plastic Surgery or General Surgery (special interest - breast) background to acquire further knowledge and skills which will enhance the service they can provide and care that they can give as consultants.

Background

Modern specialist breast units require breast and plastic surgeons to work closely together to provide the range and breadth of breast surgery services – oncoplastic breast surgery.

The Oncoplastic TIG fellowships are intended for post-FRCS examination trainees within their final two years of training. Trainees applying for the OPBS TIG fellowships are choosing to gain access to specialist training in Oncoplastic Breast Surgery. Trainees applying for these posts will have already met the non-special interest requirements of their parent curriculum to the level required for CCT when applying for the posts. This curriculum provides additional focused Oncoplastic Breast Surgery training in keeping with the requirements of the special interest sections of the parent specialty curricula (General Surgery and Plastic Surgery).

The OPBS TIG fellowships have been running successfully for 14 years. Defining an OPBS TIG curriculum will allow Fellows a better understanding of what they are expected to learn, and for trainers, a syllabus and structure to deliver the curriculum through the year. The Curriculum is structured to deliver an achievable skill set and clinical experience within a n indicative 12 months. The skills and experience obtained will enhance patient care and service delivery.

Aspects of oncoplastic breast surgery education and training are included in both the General Surgery (special interest breast) or Plastic Surgery (special interest breast) curricula but currently each parent speciality has a slightly different focus. Plastic Surgery trainees focus on breast reconstructive skills and General Surgery trainees on breast assessment, the management of benign and malignant breast conditions and the plastic surgery skills required to maintain the breast aesthetic after any surgery. The aim of the OPBS TIG curriculum is for Fellows to integrate knowledge and skills from both parent curricula to support and mirror the closer partnerships and collaboration now seen in day-to-day service delivery while recognising that individuals may wish to offer different aspects of service.

It is not possible to simply combine the breast components of the General Surgery and Plastic Surgery curricula as all aspects of such a curriculum would not be deliverable within a single year's programme. This TIG Fellowship curriculum ensures integration of both specialty's skill mix in this specialist area. The purpose is to ensure skills appropriate to multidisciplinary working are gained together with advanced skills in specific aspects of the subspecialty. The new curriculum identifies key topics involving both specialty areas and advanced topics which would be identified by an agreed learning discussion with the trainee.

Aim of the 2015 TIG curriculum

The aim is to produce surgeons who can work together to provide a comprehensive breast oncoplastic service within a breast centre, meeting the recommendations for trained surgeons

working in either a Breast Unit or Breast Centre as described in the Oncoplastic Breast Reconstruction Guidelines 2012 (Appendix 2) and in the Oncoplastic Breast Surgery Shape of Service Provision (Appendix 3). A one year curriculum will generally not provide the full breast and plastic expertise required to allow interchangeable service delivery, although this may be possible for some individuals.

The focus for the Plastic Surgery trainees will be to develop knowledge and skills in breast assessment, breast disease and cancer diagnosis and management. The focus for the General Surgery trainees will be to develop a broader understanding and skill set for breast reconstruction and aesthetic breast surgery with emphasis on the therapeutic use of aesthetic techniques.

This new curriculum and syllabus defines the requirements for trainees who undertake a Training Interface Group Fellowship in Oncoplastic Breast Surgery. These additional skills and experience will be transparent to all concerned.

Entry requirements for the OPBS TIG program

1. Support from existing Training Program Director for the trainee to apply
2. Fulfilment of OPBS TIG person specification essential criteria
3. Completion of FRCS in either General Surgery or Plastic Surgery
4. Successful appointment at National Selection Process
5. General Surgery trainees: completion of General Surgery CCT requirements for knowledge, clinical and technical skills in emergency & elective General Surgery;
6. Plastic Surgery trainees: completion of Plastic Surgery CCT requirements for knowledge, clinical and technical skills in trauma & elective Plastic Surgery.

National Selection Process for the Oncoplastic Breast Surgery Fellowships

There are currently 10 funded Oncoplastic breast surgery Fellowship posts and 12 appointed Training Centres. Each post is funded for 12 months whole time equivalent. The selection process is facilitated by Health Education South West under the guidance of Dr Geoffrey Wright, Associate Lead Dean for the Training Interface Groups. The structure and content of the appointment process is developed, overviewed and updated by the Training Interface Group for Oncoplastic Breast Surgery.

The national selection process is open and competitive to all Plastic Surgery and General Surgery trainees who have met the essential criteria of the Person Specification. The selection process assesses the candidates in a number of stations. The interview panellists represent a selection of Breast and Plastic surgeons familiar with the programme, with representation and support from the Specialty Advisory Committees in General Surgery and Plastic Surgery. The 10 posts are appointed on merit, and the trainees are allocated to their preferred training unit depending on their ranking in the interview process. The trainees are able to undertake these posts in less than full time working hours. Arrangements for flexible working are negotiated at a local level between the trainee, the Assigned Educational Supervisor and Dr Geoffrey Wright.

Modules and structure of the Syllabus (Appendix 1)

The breast component of the current General Surgery curriculum is covered in 3 modules:

1. Basic sciences and breast assessment

2. Benign breast conditions

3. Breast cancer

The breast component of the current Plastic Surgery curriculum is covered in 3 modules:

4. Implant based reconstruction

5. Autologous reconstruction

6. Aesthetic Surgery of the Breast

The General Surgery curriculum includes aspects of the modules listed under Plastic Surgery, while the Plastic Surgery curriculum includes the modules listed under General Surgery. The OPBS curriculum rationalises the discrepancies between the two parent curricula while increasing clarity and enhancing the educational aims.

These 6 modules remain as the framework of the OPBS TIG curriculum.

All OP TIG Fellows will be expected to achieve the defined competency levels in the four compulsory modules (in **bold – 1,3,4 and 6**). Progress towards or completion of module 2 is optional for Plastic Surgery trainees. Similarly, progress towards or completion of module 5 is optional for General Surgery trainees.

Completion of the compulsory modules to the defined competency levels and achieving the requirements for completion of the OPBS Fellowship are the essential exit criteria.

Trainees will be expected to have completed their parent specialty modules by the start of the Fellowship:

- General Surgery trainees will have completed OPBS modules 1-3 from the General Surgery curriculum. Modules 4, 6 and part of module 5 are completed during an OPBS TIG Fellowship.
- Plastic Surgery trainees will have completed OPBS modules 4-6 from the Plastic Surgery Curriculum. Modules 1,3 and part of module 2 are completed during an Oncoplastic fellowship.

The detailed syllabus is shown in Appendix 1, following the established format of knowledge and skill level.

Knowledge:

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

Clinical and Technical Skill:

1. Has observed
2. Can do with assistance
3. Can do whole but may need assistance
4. Competent to do without assistance, including complications

A structured 12 month Learning Agreement (LA) will help the fellow and the Assigned Educational Supervisor (AES) define the trainee's individual learning requirements to meet the essential exit requirements of the OPBS TIG post at the end of the 12 months. The LA should be submitted together with the weekly work plan that should fulfil the JCST Quality Indicators for OPBS TIG Fellowships. This includes 3 sessions in Theatre, 3 sessions in clinic including 1 in a breast reconstruction planning clinic, 1 session for MDT, 1 session for Research and Audit, 1 session for

administration and 1 flexible session (this can be used for attending aesthetic surgery in the independent health sector).

Guidance on structuring the Learning Agreement for the trainee is available. (Appendix 4)

OPBS TIG Training units will be compliant with SAC/JCST Quality Indicators in training for OPBS surgery.

Assessment

Existing Workplace Based Assessments, Clinical Supervisor and Educational Supervisor reports will feed into the ARCP process for the trainee's home Deanery / LETB.

The trainee and Assigned Educational Supervisor should complete a Learning Agreement in the ISCP within 6 weeks of starting the post.

Each trainee will have nominated Clinical Supervisors from both General Surgery and Plastic Surgery.

The OPBS TIG Chair will be a delegated TPD for each trainee. An OPBS TIG Review Panel will review trainees' progress and offer external advice to the home Deanery / LETB ARCP panel.

Requirements for successful completion of the OPBS TIG

Professional Skills

- Research: one publication/poster etc
- Audit: close the loop
- Medical education: Demonstrable teaching ie Faculty on National/Regional courses with formal feedback
- Management: Attendance on the TIG residential course
- Courses: Completion of a course related to beast surgery approved for Study Leave
- Educational conferences: attendance at recommended conferences approved for Study Leave
- Leadership: Participation in a leadership course approved for study leave

Clinical competence

- OPBS TIG Fellows will be expected to be able to provide evidence of the breadth of clinical experience defined in the OPBS TIG syllabus by presenting a minimum of 40 Work Based Assessments (WBAs) through the year. These WBAs are linked to the OPBS Syllabus
- Case based discussions and Procedure Based Assessments should show progression to the defined level and should cover the modules required by the curriculum (see above)

Operative experience

OPBS TIG fellows will be expected to be able to provide consolidated logbook evidence of sufficient breadth of operative experience as suggested by the following indicative numbers:

| |
|---|
| OPBS TIG Indicative Experience (over 1 year) |
|---|

| (P+ S-TS + S-TU + T) | |
|--|-----|
| Key Procedures for Plastic Surgery Trainees: | |
| Breast lump excision | 20 |
| | |
| Breast cancer | |
| Mastectomy | 25 |
| Conservation | N/S |
| | |
| Axillary surgery | 55 |
| ALND | 20 |
| SLNB | 35 |
| | |
| Key Procedures for General Surgery Breast Trainees: | |
| Reconstruction | |
| All Breast Reconstruction | 30 |
| | |
| All Breast Aesthetic Procedures (including procedures assisted) | 50 |
| | |
| | |
| Bilateral /unilateral Breast Augmentation | 10 |
| Bilateral /unilateral Breast Reduction | 15 |
| Bilateral /unilateral Mastopexy | 10 |
| All Flaps | 15 |
| Implant Reconstruction | 15 |
| Nipple Reconstruction | 15 |
| Nipple Tattoo | 5 |
| Lipomodelling | 15 |

Appendices

| | |
|------------|---|
| Appendix 1 | Oncoplastic Breast Surgery TIG Fellowship Syllabus 2015 |
| Appendix 2 | Oncoplastic Breast Reconstruction Guidelines 2012 |
| Appendix 3 | Oncoplastic Breast Surgery Shape of Service Provision |
| Appendix 4 | Guidance for Structuring the Learning Agreement for the OP TIG Fellowship |

**MODULE 1
BASICSCIENCES AND BREAST ASSESSMENT**

Mandatory module

OBJECTIVES

Knowledge of embryology, development, anatomy, physiology and genetics, stem cell biology, biology of scarring, wound healing and management of abnormal scars

Clinical assessment and investigation of patients presenting with breast symptoms

| KNOWLEDGE | |
|---|---|
| Topographical and segmental anatomy of the breast | 4 |
| Vascular neuronal and lymphatic supply / drainage of breast | 4 |
| Anatomy of chest wall, abdomen and axilla | 4 |
| Lymphatic system physiology | 4 |
| Embryology of breast | 4 |
| Endocrine physiology and endocrine effects on the breast at puberty, pregnancy, lactation, menopause and in mastalgia | 3 |
| Effect of hormonal therapeutics on the breast (OCP, HRT, SERM's & AI's) | 3 |
| Developmental abnormalities - accessory nipples, accessory breast tissue | 4 |
| Breast aesthetics (including breast measurements) | 4 |
| Breast asymmetry | 4 |
| Breast hyperplasia | 4 |
| Hypoplastic breast syndromes including Poland's syndrome | 3 |
| Chest wall deformities and associated limb abnormalities | 3 |
| Association of high risk benign conditions with breast cancer | 3 |
| CLINICAL SKILLS | |
| History taking for all breast conditions | 4 |
| Examination | |
| Breast, nodal basin, relevant systems | 4 |
| Ability to discuss findings at an MDM | 3 |
| Triple assessment | |
| Understand indications,use, interpretation and limitations | 4 |
| Diagnostic grid/concordance | 4 |
| Imaging | |
| Indications for and techniques used in ultrasound and mammography | 3 |
| Ultrasound interpretation | 3 |
| Mammography interpretation | 3 |
| Additional mammography views | 3 |
| MRI | 3 |
| Pathology | |
| Cytology - indications, interpretations and limitations | 3 |
| Histology - indications, interpretations and limitations | 3 |
| Management | |
| Record findings - diagnostic grid | 3 |
| Interpret findings | 3 |
| Analyse results,synthesise a diagnosis and use judgement in developing a treatment plan | 3 |
| Communicate findings and plan to patient and colleagues | 3 |
| TECHNICAL SKILLS | |
| Free hand cyst / abscess drainage | 3 |
| Free-hand lesion FNA | 3 |
| Free-hand core biopsy | 3 |
| Punch biopsy of skin / nipple | 3 |
| U/S guided lesion FNA | 1 |
| U/S guided core biopsy | 1 |
| U/S guided VAB | 1 |
| Excisional biopsy (palpable) | 3 |

**MODULE 2
BENIGN BREAST CONDITIONS**

Optional module for Plastic Surgery trainees

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

| | |
|---|---|
| Pathophysiology | |
| BBC | 3 |
| Breast pain | 3 |
| Skin conditions eg eczema | 3 |
| Breast cysts | 3 |
| Benign nipple discharge | 3 |
| Duct disease / ectasia / papilloma | 3 |
| Periductal mastitis | 3 |
| Mammary duct fistula | 3 |
| Fibroadenoma | 3 |
| Phylloides tumour | 3 |
| Interaction of systemic conditions, medication and lifestyle factors with breast disease: | 3 |
| - hyper-prolactinaemia | 3 |
| - OCP | 3 |
| - smoking | 3 |
| Lactational adenoma | 3 |
| Galactocoele | 3 |
| Breast sepsis - lactational | 3 |
| Breast sepsis - non lactational | 3 |
| Involucional change of the breast | 3 |
| Gynaecomastia | 3 |
| CLINICAL SKILLS | |
| History taking for all breast conditions | 4 |
| Examination | |
| Breast, nodal basin, relevant systems | 4 |
| Ability to discuss findings at an MDM | 3 |
| Triple assessment | |
| Understand indications, use, interpretation and limitations | 4 |
| Diagnostic grid/concordance | 4 |
| Imaging | |
| Indications for and techniques used in ultrasound and mammography | 3 |
| Ultrasound interpretation | 3 |
| Mammography interpretation | 3 |
| Additional mammography views | 3 |
| MRI | 3 |
| Pathology | |
| Cytology - indications, interpretations and limitations | 3 |
| Histology - indications, interpretations and limitations | 3 |
| Management | |

| | |
|--|---|
| Record findings - diagnostic grid | 3 |
| Interpret findings | 3 |
| Analyse results, synthesise a diagnosis and use judgement in developing a treatment plan | 3 |
| Communicate findings and plan to patient and colleagues | 3 |
| TECHNICAL SKILLS | |
| Breast lump excision (palpable) | 3 |
| Wire / image guided excision of lesion | 3 |
| Microdochectomy | 3 |
| Major duct excision | 3 |
| Fistulectomy | 3 |
| Nipple eversion | 3 |
| Ductoscopy | 1 |
| Minimal access surgery | 1 |

MODULE 3 BREAST CANCER

Mandatory module

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 assesment and NICE guidelines | 3 |
| Risk lesions - LCIS, ADH | 3 |
| Identified genetic abnormalities - risk assessment models / genetic testing / counselling | 3 |
| Advice, diet, lifestyle, screening, risk reduction surgery | 3 |
| Association of high risk benign conditions with breast cancer | 3 |
| In-situ breast cancer | |
| Epidemiology | 3 |
| Biology, Clinicopathology, including classification and sub-types | 3 |
| Invasive breast cancer | |
| Epidemiology | 3 |
| Cancer biology - hormonal, growth factors and receptors, tumour metastasis | 3 |
| Clinicopathology, including classification and sub-types | |
| Staging (UICC - TNM) | 3 |
| Genomic taxonomies | 3 |
| Male breast cancer | 3 |
| Pregnancy associated breast cancer | 2 |
| Prognostic factors | |
| Chief prognostic factors/prognostic tools (E.G andjuvantonline, predict) | 3 |
| Relevance to treatment | 3 |
| Screening | |
| Evidence, organisation & Structure of NHSBSP | 3 |
| Delivery, imaging modality, results, quality assurance | 3 |
| Cancer staging | |
| Bone scan, MRI, CT, PET, tumour markers etc | 3 |

| | |
|---|---|
| Management/treatment | |
| Risks and benefits of treatment/no treatment | 3 |
| Indications for primary medical treatment | 3 |
| Neoadjuvant therapies including primary medical therapy | 3 |
| Endocrine therapies | 3 |
| Indications for breast conservation / mastectomy / axillary surgery (SLNB, ALND) / reconstruction | 3 |
| Oncoplastic techniques (therapeutic mammoplasty / IBR/SSM & NSM) | 3 |
| Complications and management for all treatments | 3 |
| Indications for radiotherapy | 3 |
| Adjuvant and neo-adjuvant chemotherapy - principles and indications, common regimes | 3 |
| Herceptin and targeted therapies | 3 |
| Breast Service Delivery and QA | 3 |
| Multidisciplinary Teams | 3 |
| Palliative Care | 3 |
| Guidelines/protocols and trials- network, national, European and international,etc | 3 |
| E.G NICE, ABS, NHSBSP. EUSOMA, NCRN etc | 3 |
| Oncoplastic | 3 |
| CLINICAL SKILLS | |
| Develop and record plan | 3 |
| Skillful discussion of cancer diagnosis, breaking bad news, etc | 3 |
| Informed consent for complex treatment scenarios | 3 |
| MDM working:Use of multimodality treatments to minimise surgery | 3 |
| TECHNICAL SKILLS | |
| BREAST CONSERVATION | |
| Palpable | 3 |
| Impalpable and wire / image guided (localised) | 3 |
| Oncoplastic - volume displacement techniques | |
| Breast re-coning | 3 |
| Therapeutic Mammoplasty | 3 |
| Others (EG Grisotti, round block, etc) | 3 |
| Oncoplastic - volume replacement techniques | |
| local flaps, Mini LD etc | 2 |
| MASTECTOMY | |
| Simple | 3 |
| Modified Radical | 3 |
| Skin sparing- nipple preserving | 3 |
| Skin sparing-nipple sacrificed | 3 |
| Skin reducing | 3 |
| AXILLARY SURGERY | |
| Removal axillary breast tissue/nipple | 3 |
| Lymph node biopsy | 3 |
| Axillary clearance -Primary . Level 1-3 | 3 |
| Axillary clearance -completion (delayed) | 3 |
| Axillary surgery - repeat (recurrence) | 2 |
| SLNB (any technique) | 3 |

MODULE 4 IMPLANT BASED RECONSTRUCTION

Mandatory

OBJECTIVES

Acquire competence in implant based reconstruction including indications, technique and management of complications

KNOWLEDGE

| | |
|---|---|
| Indications and CI's to implant based reconstruction | 3 |
| Surgical anatomy of implant / expander based reconstructive procedures | 3 |
| Alloplastic materials (dermal xenografts etc) and tissue interfaces | 3 |
| Advantages and disadvantages compared with other reconstruction techniques | 3 |
| Range of TEX and fixed volume implants available | 2 |
| Staged procedures – single and two stage: advantages and disadvantages | 3 |
| Management of implant infection, extrusion, malposition, rotation. | 3 |
| Capsular contracture: Aetiology, classification, | 3 |
| Impact of RT on implants and management, historical development and controversies | 3 |
| Lipomodelling in reconstruction (indications, complications and controversies – stem cells, mammographic follow-up) | 3 |
| long term outcomes of breast reconstruction (clinical/PROMS) | 3 |
| Reconstruction techniques in risk reducing surgery | 3 |
| Nipple reconstruction and techniques available | 3 |

CLINICAL SKILLS

| | |
|---|---|
| Identify pre-operative factors which can be optimized prior to surgery (smoking, systemic disease) | 3 |
| Discuss advantages and disadvantages of reconstruction - specifically setting of realistic expectation, reconstruction as a process, template in-patient stay and complications | 3 |
| Assess suitability for immediate vs delayed reconstruction | 3 |
| Assess suitability for implant based reconstruction Vs alternatives | 3 |
| Describe importance of informed consent and joint decision making | 3 |
| Ability to consent patients describing full range of potential complications, and set realistic expectations | 3 |
| Ability to select appropriate implants / expanders | 3 |
| Recognise post-operative complications and formulate appropriate management plans | 3 |
| Manage complications of surgery in clinic (wound, seroma) | 3 |
| Manage patients appropriately in post-operative period | 3 |

TECHNICAL SKILLS

| | |
|--|---|
| Preoperative marking of patient | 3 |
| Orient devices and prepare appropriately | 3 |
| Minimising infection: antibiotics, drains, changing gloves, laminar theatres etc | 3 |
| Creation and closure of sub-pectoral pocket, including total sub-muscular cover | 3 |
| Two stage reconstruction using TEX and subsequent exchange for FVI | 3 |
| Single staged reconstruction using FVI and dermal xenograft sling | 3 |
| Inferior dermal sling to achieve implant cover | 3 |
| Identification and correction of aesthetic deficiencies as secondary procedures | 3 |
| Nipple reconstruction techniques | 3 |

MODULE 5

AUTOLOGOUS TISSUE BASED RECONSTRUCTION

Optional for breast trainees

OBJECTIVES

Acquire competence in autologous tissue based breast reconstruction including indications, technique and management of complications

| KNOWLEDGE | |
|---|---|
| Vascular classifications and taxonomy of flaps | 3 |
| Factors affecting outcome in flap surgery (patient related, operative, adjuvant therapy related) | 3 |
| Principles of flap surgery (replace “like with like”, reconstructive units, back-up plan and “life boat”, donor site considerations) | 3 |
| Principles of microsurgery | 3 |
| Relevant surgical anatomy of the LD flap | 3 |
| Relevant surgical anatomy and neurovascular supply of other flaps used in breast reconstruction (Abdominal wall, I/S GAP, TUG, TDAP) | 3 |
| Concept of angiosomes, specifically in reconstructions using abdominal free flaps | 3 |
| Indications and CI's for IBR and DBR – pre-operative factors to be considered in decision making | 3 |
| Tissue effects of radiotherapy.: implications with timing. | 3 |
| Psychological impact of IBR and DBR - advantages and disadvantages in comparison with implant based reconstruction | 3 |
| Pre-operative investigations for specific flaps | 3 |
| Complications of autologous tissue reconstruction including donor site morbidity | 3 |
| Autologous reconstruction in risk reducing surgery | 3 |
| Volume replacement - partial breast reconstruction techniques (local flaps etc) | 2 |
| Flap salvage and options following failure | 2 |
| CLINICAL SKILLS | |
| Elicit factors important for decisions regarding suitability / type of autologous reconstruction | 3 |
| Assess suitability for IBR vs DBR | 3 |
| Discuss advantages and disadvantages of reconstruction - specifically setting of realistic expectation, reconstruction as a process, template in-patient stay and complications | 3 |
| Describe importance of informed consent and joint decision making | 3 |
| Manage complications of surgery in clinic (wound, seroma) | 3 |
| Manage patients appropriately in post-operative period | 3 |
| Identify patients not suitable for autologous reconstruction (physical and psychological contraindications) | 3 |
| Undertake appropriate post-operative assessment of (free) flaps | 3 |
| Plan algorithms for managing autologous complications | 3 |
| TECHNICAL SKILLS | |
| Preoperative marking up of patient | 3 |
| Pedicled Techniques | |
| Raising and inseting pedicled autologous TRAM flap | 1 |
| Raising and inseting pedicled autologous LD flap | 3 |
| Free-flap Techniques | |
| Microvascular anastomoses | 1 |
| Flap salvage for failing flaps | 2 |
| flap shaping techniques | 3 |
| Flap revision techniques | 2 |
| Lipomodelling for correction of resectional defects | 2 |
| Lipomodelling in breast reconstruction | 2 |

AESTHETIC SURGERY OF THE BREAST

Mandatory

OBJECTIVES

Acquire competence in the diagnosis, aesthetic assessment and safe management of all deformities and conformations of the breast, developmental and acquired, pathological and physiological

Acquire proficiency in all aspects of breast reconstruction and subsequent revisional procedures

Acquire facility in the psychological assessment of patients presenting for breast surgery

KNOWLEDGE

| | |
|---|---|
| Applied and surgical anatomy of the breast, its blood, nerve supply and function | 4 |
| Development of the breast and congenital deformity and variations of breast form and associated structures | 4 |
| Effect of ionizing radiation on the breast and implants | 4 |
| Planning incisions on the breast | 4 |
| Closure and management of breast wounds | 4 |
| Self-perception and self-consciousness in relation to breast conformation and proportion including the social and sexual dimensions | 3 |
| Pathology of deranged self-image | 3 |
| Content, structure, physical and biological properties of breast implants | 4 |
| Spectrum of implants available and their applications | 3 |
| Design, principles and applications of tissue expanders | 3 |
| Nature, physiology and behaviour of implant capsules | 3 |
| Management of capsular contractures | 3 |
| Biology, implications, avoidance of and management of implant infection | 4 |
| Various designs and approaches to breast augmentation and their applications | 3 |
| Issues surrounding breast size and its assessment | 3 |
| Complications of breast augmentation and their management | 3 |
| Various designs and patterns of breast reduction and mastopexy | 3 |
| Complications and management of breast reduction/remodelling | 3 |
| Presentation, management and complications of gynaecomastia | 2 |
| Assessment of envelope and volume in relation to breast asymmetry, both developmental and acquired | 2 |
| Classification and management pathways of the tuberous breast | 2 |
| Management pathways and choices in breast asymmetry | 3 |
| Impact of breast reconstruction choices on symmetry | 3 |
| Effect of time, ageing and pregnancy on breast asymmetry correction | 3 |
| Various techniques of breast reconstruction, their applications, design and planning | 3 |
| Complications of breast reconstruction | 3 |
| Techniques for salvage of failed breast surgery | 2 |
| Techniques for nipple reconstruction, including considerations of sequence and timing | 3 |
| Features of dysmorphophobia | 3 |
| Psychosexual dimension in aesthetic breast surgery | 3 |
| CLINICAL SKILLS | |
| Demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning | 3 |
| Assess and accurately record aesthetic concerns about the breast | 3 |
| formulate management plans in relation to aesthetic interventions | 3 |
| Clearly explain, consent and counsel potential patients for aesthetic breast surgery | 3 |

| | |
|--|---|
| Assess the psychological suitability for aesthetic breast surgery and appropriately refer for expert psychological advice as necessary | 3 |
| Undertake risk benefit analysis of non-pathological based surgery | 3 |
| Deal with disappointment and postoperative dissatisfaction | 3 |
| TECHNICAL SKILLS | |
| Planning, execution and closing incisions on the breast with reference to aesthetic principles and sub units | 4 |
| Designing and conduction of excision of skin lesions of the breast | 4 |
| Undertaking an aesthetic approach to removal of benign lesions of the breast | 4 |
| Scar revision in aesthetic breast surgery | 4 |
| Correction of the inverted nipple (various techniques) | 2 |
| Bilateral breast augmentation by various routes, in various planes | 3 |
| Wise pattern bilateral breast reduction | 3 |
| Vertical pattern bilateral breast reduction | 3 |
| Bilateral mastopexy of periareolar, vertical and Wise patterns | 3 |
| Excision of gynaecomastia, incorporating various forms of liposuction as appropriate | 3 |
| Correction of the spectrum of nipple deformities | 2 |
| Unilateral or differential breast augmentation to attain symmetry | 3 |
| Unilateral or asymmetric breast reduction in pattern or volume to attain symmetry | 3 |
| Synchronous mastopexy and breast augmentation in several patterns | 2 |
| correction of tuberous breast by combinations of mastopexy, augmentation or tissue expansion | 2 |
| Unilateral or differential mastopexy in pattern or extent to attain symmetry | 3 |
| Revision procedures following previous aesthetic surgery of the breast | 2 |
| Aesthetic surgery of the breast as above in patients with previous breast cancer or irradiation. | 2 |
| Fat grafting for minor deformities of the breast | 2 |

Professional Behaviour & Leadership Syllabus

Overview

Click [here](#) to download a PDF copy of the 2010 syllabus.

Professional behaviour and leadership skills are integral to the specialty specific syllabuses relating to clinical practice. It is not possible to achieve competence within the specialty unless these skills and behaviours are evident. Professional behaviour and leadership skills are evidenced through clinical practice. By the end of each stage of training, the trainee must be able to demonstrate progress in acquiring these skills and demonstrating these behaviours across a range of situations as detailed in the syllabus.

Under each category heading there are learning objectives in the domains of knowledge, skills and behaviour together with example behaviours. These objectives underpin the activities that are found in the syllabus.

All the workplace based assessments contain elements which assess professional behaviour and leadership skills as illustrated in the matrix below.

| WPBA | Good Clinical Care | Communicator | Teaching & Training | Keeping up to date | Manager | Promoting good health | Probity & ethics |
|------------|--------------------|------------------|---------------------|--------------------|---------|-----------------------|------------------|
| CBD | ✓✓ | ✓ | | ✓ | ✓✓ | ✓ | ✓ |
| MSF | ✓✓ | ✓✓ | ✓ | ✓ | ✓ | ✓ | ✓✓ |
| CEX | ✓✓ | ✓✓ | | ✓ | ✓ | ✓ | |
| PBA | ✓✓ | ✓✓ | | ✓ | ✓ | ✓ | ✓ |
| DOPS | ✓✓ | ✓ | | ✓ | | ✓ | ✓ |
| Covered ✓✓ | | Partly covered ✓ | | Not covered | | | |

Click on [Workplace Based Assessments](#) to view the assessment forms.

GOOD CLINICAL CARE

| | Professional Behaviour and Leadership | Mapping to Leadership Curriculum | Assessment technique | Areas in which simulation should be used to develop relevant skills |
|------------------|---|---|--|--|
| Category | <p>Good Clinical Care, to include:</p> <ul style="list-style-type: none"> • History taking (GMP Domains: 1, 3, 4) • Physical examination (GMP Domains: 1, 2,4) • Time management and decision making (GMP Domains: 1,2,3) • Clinical reasoning (GMP Domains: 1,2, 3, 4) • Therapeutics and safe prescribing (GMP Domains: 1, 2, 3) • Patient as a focus of clinical care (GMP Domains: 1, 3, 4) • Patient safety (GMP Domains: 1, 2, 3) • Infection control (GMP Domains: 1, 2, 3) | Area 4.1 | | |
| Objective | <p>To achieve an excellent level of care for the individual patient</p> <ul style="list-style-type: none"> • To elicit a relevant focused history (See modules 2, 3, 4,5) • To perform focused, relevant and accurate clinical examination (See modules 2,3,4,5) • To formulate a diagnostic and therapeutic plan for a patient based upon the clinic findings (See modules 2,3,4,5) • To prioritise the diagnostic and therapeutic plan (See modules 2,3,4,5) • To communicate a diagnostic and therapeutic plan appropriately (See modules 2,3,4,5) <p>To produce timely, complete and legible clinical records to include case-note records, handover notes, and operation notes</p> <p>To prescribe, review and monitor appropriate therapeutic interventions relevant to clinical practice including non – medication based therapeutic and preventative indications (See module 1,2,3,4,5)</p> <p>To prioritise and organise clinical and clerical duties in order to optimise patient care</p> <p>To make appropriate clinical and clerical decisions in order to optimise the effectiveness of the clinical team resource.</p> <p>To prioritise the patient’s agenda encompassing their beliefs, concerns expectations and needs</p> <p>To prioritise and maximise patient safety:</p> <ul style="list-style-type: none"> • To understand that patient safety depends on <ul style="list-style-type: none"> ○ The effective and efficient | Area 4.1 | Mini CEX, CBD, Mini PAT, MRCS and Specialty FRCS | <p>Strongly recommended</p> <p>Patient safety</p> <p>Desirable:</p> <p>Human factors</p> |

| | | | | |
|------------------|---|--|--|--|
| | <ul style="list-style-type: none"> ○ organisation of care <ul style="list-style-type: none"> ○ Health care staff working well together ○ Safe systems, individual competency and safe practice ● To understand the risks of treatments and to discuss these honestly and openly with patients ● To systematic ways of assessing and minimising risk ● To ensure that all staff are aware of risks and work together to minimise risk <p>To manage and control infection in patients, including:</p> <ul style="list-style-type: none"> ● Controlling the risk of cross-infection ● Appropriately managing infection in individual patients ● Working appropriately within the wider community to manage the risk posed by communicable diseases | | | |
| Knowledge | <p>Patient assessment</p> <ul style="list-style-type: none"> ● Knows likely causes and risk factors for conditions relevant to mode of presentation ● Understands the basis for clinical signs and the relevance of positive and negative physical signs ● Recognises constraints and limitations of physical examination ● Recognises the role of a chaperone is appropriate or required ● Understand health needs of particular populations e.g. ethnic minorities ● Recognises the impact of health beliefs, culture and ethnicity in presentations of physical and psychological conditions <p>Clinical reasoning</p> <ul style="list-style-type: none"> ● Interpret history and clinical signs to generate hypothesis within context of clinical likelihood ● Understands the psychological component of disease and illness presentation ● Test, refine and verify hypotheses ● Develop problem list and action plan ● Recognise how to use expert advice, clinical guidelines and algorithms ● Recognise and appropriately respond to sources of information accessed by patients ● Recognises the need to determine the best value and most effective treatment both for the individual patient and for a patient cohort <p>Record keeping</p> <ul style="list-style-type: none"> ● Understands local and national guidelines for the standards of clinical record keeping in all circumstances, including handover ● Understanding of the importance of high quality and adequate clinical record keeping and relevance to patient safety and to | | | |

| | | | | |
|---------------|---|-----------------|--|--|
| | <p>litigation</p> <ul style="list-style-type: none"> • Understand the primacy for confidentiality <p>Time management</p> <ul style="list-style-type: none"> • Understand that effective organisation is key to time management • Understand that some tasks are more urgent and/or more important than others • Understand the need to prioritise work according to urgency and importance • Maintains focus on individual patient needs whilst balancing multiple competing pressures • Outline techniques for improving time management <p>Patient safety</p> <ul style="list-style-type: none"> • Outline the features of a safe working environment • Outline the hazards of medical equipment in common use • Understand principles of risk assessment and management • Understanding the components of safe working practice in the personal, clinical and organisational settings • Outline local procedures and protocols for optimal practice e.g. GI bleed protocol, safe prescribing • Understands the investigation of significant events, serious untoward incidents and near misses <p>Infection control</p> <ul style="list-style-type: none"> • Understand the principles of infection control • Understands the principles of preventing infection in high risk groups • Understand the role of Notification of diseases within the UK • Understand the role of the Health Protection Agency and Consultants in Health Protection | Area 4.1 | | |
| Skills | <p>Patient assessment</p> <ul style="list-style-type: none"> • Takes a history from a patient with appropriate use of standardised questionnaires and with appropriate input from other parties including family members, carers and other health professionals • Performs an examination relevant to the presentation and risk factors that is valid, targeted and time efficient and which actively elicits important clinical findings • Give adequate time for patients and carers to express their beliefs ideas, concerns and expectations • Respond to questions honestly and seek advice if unable to answer • Develop a self-management plan with the patient | | | |

| | | | | |
|--|--|------------------------|--|--|
| | <ul style="list-style-type: none"> • Encourage patients to voice their preferences and personal choices about their care <p>Clinical reasoning</p> <ul style="list-style-type: none"> • Interpret clinical features, their reliability and relevance to clinical scenarios including recognition of the breadth of presentation of common disorders • Incorporates an understanding of the psychological and social elements of clinical scenarios into decision making through a robust process of clinical reasoning • Recognise critical illness and respond with due urgency • Generate plausible hypothesis(es) following patient assessment • Construct a concise and applicable problem list using available information • Construct an appropriate management plan in conjunction with the patient, carers and other members of the clinical team and communicate this effectively to the patient, parents and carers where relevant <p>Record keeping</p> <ul style="list-style-type: none"> • Producing legible, timely and comprehensive clinical notes relevant to the setting • Formulating and implementing care plans appropriate to the clinical situation, in collaboration with members of an interdisciplinary team, incorporating assessment, investigation, treatment and continuing care • Presenting well documented assessments and recommendations in written and/or verbal form <p>Time management</p> <ul style="list-style-type: none"> • Identifies clinical and clerical tasks requiring attention or predicted to arise • Group together tasks when this will be the most effective way of working • Organise, prioritise and manage both team-members and workload effectively and flexibly <p>Patient safety</p> <ul style="list-style-type: none"> • Recognise and practise within limits of own professional competence • Recognise when a patient is not responding to treatment, reassess the situation, and encourage others to do so • Ensure the correct and safe use of medical equipment • Improve patients' and colleagues' understanding of the side effects and contraindications of therapeutic intervention • Sensitively counsel a colleague following a significant untoward event, or near incident, | <p>Area 4.1</p> | | |
|--|--|------------------------|--|--|

| | | | | |
|-------------------------|---|--|--|--|
| | <p>to encourage improvement in practice of individual and unit</p> <ul style="list-style-type: none"> Recognise and respond to the manifestations of a patient's deterioration or lack of improvement (symptoms, signs, observations, and laboratory results) and support other members of the team to act similarly <p>Infection control</p> <ul style="list-style-type: none"> Recognise the potential for infection within patients being cared for Counsel patients on matters of infection risk, transmission and control Actively engage in local infection control procedures Prescribe antibiotics according to local guidelines and work with microbiological services where appropriate Recognise potential for cross-infection in clinical settings Practice aseptic technique whenever relevant | | | |
| <p>Behaviour</p> | <ul style="list-style-type: none"> Shows respect and behaves in accordance with Good Medical Practice Ensures that patient assessment, whilst clinically appropriate considers social, cultural and religious boundaries Support patient self-management Recognise the duty of the medical professional to act as patient advocate Ability to work flexibly and deal with tasks in an effective and efficient fashion Remain calm in stressful or high pressure situations and adopt a timely, rational approach Show willingness to discuss intelligibly with a patient the notion and difficulties of prediction of future events, and benefit/risk balance of therapeutic intervention Show willingness to adapt and adjust approaches according to the beliefs and preferences of the patient and/or carers Be willing to facilitate patient choice Demonstrate ability to identify one's own biases and inconsistencies in clinical reasoning Continue to maintain a high level of safety awareness and consciousness Encourage feedback from all members of the team on safety issues Reports serious untoward incidents and near misses and co-operates with the investigation of the same. Show willingness to take action when concerns are raised about performance of members of the healthcare team, and act appropriately when these concerns are voiced to you by others Continue to be aware of one's own limitations, and operate within them Encourage all staff, patients and relatives to observe infection control principles | | | |

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| | <ul style="list-style-type: none"> Recognise the risk of personal ill-health as a risk to patients and colleagues in addition to its effect on performance | | | |
| Examples and descriptors for Core Surgical Training | <p>Patient assessment</p> <ul style="list-style-type: none"> Obtains, records and presents accurate clinical history and physical examination relevant to the clinical presentation, including an indication of patient's views Uses and interprets findings adjuncts to basic examination appropriately e.g. internal examination, blood pressure measurement, pulse oximetry, peak flow Responds honestly and promptly to patient questions Knows when to refer for senior help Is respectful to patients by <ul style="list-style-type: none"> Introducing self clearly to patients and indicates own place in team Checks that patients comfortable and willing to be seen Informs patients about elements of examination and any procedures that the patient will undergo <p>Clinical reasoning</p> <ul style="list-style-type: none"> In a straightforward clinical case develops a provisional diagnosis and a differential diagnosis on the basis of the clinical evidence, institutes an appropriate investigative and therapeutic plan, seeks appropriate support from others and takes account of the patients wishes <p>Record keeping</p> <ul style="list-style-type: none"> Is able to format notes in a logical way and writes legibly Able to write timely, comprehensive, informative letters to patients and to GPs <p>Time management</p> <ul style="list-style-type: none"> Works systematically through tasks and attempts to prioritise Discusses the relative importance of tasks with more senior colleagues. Understands importance of communicating progress with other team members <p>Patient safety</p> <ul style="list-style-type: none"> Participates in clinical governance processes Respects and follows local protocols and guidelines Takes direction from the team members on patient safety Discusses risks of treatments with patients and is able to help patients make decisions about their treatment Ensures the safe use of equipment Acts promptly when patient condition deteriorates Always escalates concerns promptly | Area 4.1 | | |

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| | <p>Infection control</p> <ul style="list-style-type: none"> • Performs simple clinical procedures whilst maintaining full aseptic precautions • Follows local infection control protocols • Explains infection control protocols to students and to patients and their relatives • Aware of the risks of nosocomial infections. | | | |
| <p>Examples and descriptors for CCT</p> | <p>Patient assessment</p> <ul style="list-style-type: none"> • Undertakes patient assessment (including history and examination) under difficult circumstances. Examples include: <ul style="list-style-type: none"> ○ Limited time available (Emergency situations, Outpatients, ward referral), ○ Severely ill patients ○ Angry or distressed patients or relatives • Uses and interprets findings adjuncts to basic examination appropriately e.g. electrocardiography, spirometry, ankle brachial pressure index, fundoscopy, sigmoidoscopy • Recognises and deals with complex situations of communication, accommodates disparate needs and develops strategies to cope • Is sensitive to patients cultural concerns and norms • Is able to explain diagnoses and medical procedures in ways that enable patients understand and make decisions about their own health care. <p>Clinical reasoning</p> <ul style="list-style-type: none"> • In a complex case, develops a provisional diagnosis and a differential diagnosis on the basis of the clinical evidence, institutes an appropriate investigative and therapeutic plan, seeks appropriate support from others and takes account of the patients wishes <p>Record keeping</p> <ul style="list-style-type: none"> • Produces comprehensive, focused and informative records which summarise complex cases accurately <p>Time management</p> <ul style="list-style-type: none"> • Organises, prioritises and manages daily work efficiently and effectively • Works with, guides, supervises and supports junior colleagues • Starting to lead and direct the clinical team in effective fashion <p>Patient safety</p> <ul style="list-style-type: none"> • Leads team discussion on risk assessment, risk management, clinical incidents • Works to make organisational changes that will reduce risk and improve safety • Promotes patients safety to more junior colleagues | <p>Area 4.1</p> | | |

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| | <ul style="list-style-type: none"> Recognises and reports untoward or significant events Undertakes a root cause analysis Shows support for junior colleagues who are involved in untoward events <p>Infection control</p> <ul style="list-style-type: none"> Performs complex clinical procedures whilst maintaining full aseptic precautions Manages complex cases effectively in collaboration with infection control specialists | | | |
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| | Professional Behaviour and Leadership | Mapping to Leadership Curriculum | Assessment technique | Areas in which simulation should be used to develop relevant skills |
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| Category | <p>Being a good communicator</p> <p>To include:</p> <ul style="list-style-type: none"> Communication with patients (GMP Domains: 1, 3, 4) Breaking bad news (GMP Domains: 1, 3, 4) Communication with colleagues (GMP Domains: 1, 3) | N/A | | |
| Objective | <p>Communication with patients</p> <ul style="list-style-type: none"> To establish a doctor/patient relationship characterised by understanding, trust, respect, empathy and confidentiality To communicate effectively by listening to patients, asking for and respecting their views about their health and responding to their concerns and preferences To cooperate effectively with healthcare professionals involved in patient care To provide appropriate and timely information to patients and their families <p>Breaking bad news</p> <ul style="list-style-type: none"> To deliver bad news according to the needs of individual patients <p>Communication with Colleagues</p> <ul style="list-style-type: none"> To recognise and accept the responsibilities and role of the doctor in relation to other healthcare professionals. To communicate succinctly and effectively with other professionals as appropriate To present a clinical case in a clear, succinct and systematic manner | | PBA, DOPS, Mini CEX, Mini PAT and CBD | Desirable: Human factors |
| Knowledge | <p>Communication with patients</p> <ul style="list-style-type: none"> Understands questioning and listening techniques Understanding that poor communication is a cause of complaints/ litigation <p>Breaking bad news</p> <ul style="list-style-type: none"> In delivering bad news understand that: | | | |

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| | <ul style="list-style-type: none"> ○ The delivery of bad news affects the relationship with the patient ○ Patient have different responses to bad news ○ Bad news is confidential but the patient may wish to be accompanied ○ Once the news is given, patients are unlikely to take in anything else ○ Breaking bad news can be extremely stressful for both parties ○ It is important to prepare for breaking bad news <p>Communication and working with colleagues</p> <ul style="list-style-type: none"> ● Understand the importance of working with colleagues, in particular: <ul style="list-style-type: none"> ○ The roles played by all members of a multi-disciplinary team ○ The features of good team dynamics ○ The principles of effective inter-professional collaboration ○ The principles of confidentiality | | | |
| Skills | <p>Communication with patients</p> <ul style="list-style-type: none"> ● Establish a rapport with the patient and any relevant others (e.g. carers) ● Listen actively and question sensitively to guide the patient and to clarify information ● Identify and manage communication barriers, tailoring language to the individual patient and others and using interpreters when indicated ● Deliver information compassionately, being alert to and managing their and your emotional response (anxiety, antipathy etc.) ● Use, and refer patients to appropriate written and other evidence based information sources ● Check the patient's understanding, ensuring that all their concerns/questions have been covered ● Make accurate contemporaneous records of the discussion ● Manage follow-up effectively and safely utilising a variety if methods (e.g. phone call, email, letter) ● Provide brief advice on health and self care e.g. use of alcohol and drugs. ● Ensure appropriate referral and communications with other healthcare professional resulting from the consultation are made accurately and in a timely manner <p>Breaking bad news</p> <ul style="list-style-type: none"> ● Demonstrate to others good practice in breaking bad news ● Recognises the impact of the bad news on the patient, carer, supporters, staff members and self ● Act with empathy, honesty and sensitivity avoiding undue optimism or pessimism | | | |

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| | <p>Communication with colleagues</p> <ul style="list-style-type: none"> • Communicate with colleagues accurately, clearly and promptly • Utilise the expertise of the whole multi-disciplinary team • Participate in, and co-ordinate, an effective hospital at night or hospital out of hours team • Communicate effectively with administrative bodies and support organisations • Prevent and resolve conflict and enhance collaboration | | | |
| Behaviour | <p>Communication with patients</p> <ul style="list-style-type: none"> • Approach the situation with courtesy, empathy, compassion and professionalism • Demonstrate an inclusive and patient centred approach with respect for the diversity of values in patients, carers and colleagues <p>Breaking bad news</p> <ul style="list-style-type: none"> • Behave with respect, honesty and empathy when breaking bad news • Respect the different ways people react to bad news <p>Communication with colleagues</p> <ul style="list-style-type: none"> • Be aware of the importance of, and take part in, multi-disciplinary teamwork, including adoption of a leadership role • Foster an environment that supports open and transparent communication between team members • Ensure confidentiality is maintained during communication with the team • Be prepared to accept additional duties in situations of unavoidable and unpredictable absence of colleagues <p>Act appropriately on any concerns about own or colleagues' health e.g. use of alcohol and/or other drugs.</p> | | | |
| Examples and descriptors for Core Surgical Training | <ul style="list-style-type: none"> • Conducts a simple consultation with due empathy and sensitivity and writes accurate records thereof • Recognises when bad news must be imparted. • Able to break bad news in planned settings following preparatory discussion with seniors • Accepts his/her role in the healthcare team and communicates appropriately with all relevant members thereof | | | |
| Examples and descriptors for CCT | <ul style="list-style-type: none"> • Shows mastery of patient communication in all situations, anticipating and managing any difficulties which may occur • Able to break bad news in both unexpected and planned settings • Fully recognises the role of, and communicates appropriately with, all relevant team members • Predicts and manages conflict between members of the healthcare team | | | |

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| | <ul style="list-style-type: none"> Beginning to take leadership role as appropriate, fully respecting the skills, responsibilities and viewpoints of all team members | | | |
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| | Professional Behaviour and Leadership | Mapping to Leadership Curriculum | Assessment technique | Areas in which simulation should be used to develop relevant skills |
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| Category | Teaching and Training (GMP Domains: 1, 3) | N/A | | |
| Objective | <ul style="list-style-type: none"> To teach to a variety of different audiences in a variety of different ways To assess the quality of the teaching To train a variety of different trainees in a variety of different ways To plan and deliver a training programme with appropriate assessments | | Mini PAT, Portfolio assessment at ARCP | <p>Strongly recommended Teaching and Assessment</p> <p>Desirable: Presentation skills Reflective practice</p> |
| Knowledge | <ul style="list-style-type: none"> Understand relevant educational theory and principles relevant to medical education Understand the structure of an effective appraisal interview Understand the roles to the bodies involved in medical education Understand learning methods and effective learning objectives and outcomes Differentiate between appraisal, assessment and performance review Differentiate between formative and summative assessment Understand the role, types and use of workplace-based assessments Understand the appropriate course of action to assist a trainee in difficulty | | | |
| Skills | <ul style="list-style-type: none"> Critically evaluate relevant educational literature Vary teaching format and stimulus, appropriate to situation and subject Provide effective feedback and promote reflection Conduct developmental conversations as appropriate eg: appraisal, supervision, mentoring Deliver effective lecture, presentation, small group and bed side teaching sessions Participate in patient education Lead departmental teaching programmes including journal clubs Recognise the trainee in difficulty and take appropriate action | | | |

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| | <ul style="list-style-type: none"> • Be able to identify and plan learning activities in the workplace | | | |
| Behaviour | <ul style="list-style-type: none"> • In discharging educational duties respect the dignity and safety of patients at all times • Recognise the importance of the role of the physician as an educator • Balances the needs of service delivery with education • Demonstrate willingness to teach trainees and other health workers • Demonstrates consideration for learners • Acts to ensure equality of opportunity for students, trainees, staff and professional colleagues • Encourage discussions with colleagues in clinical settings to share understanding • Maintains honesty, empathy and objectivity during appraisal and assessment | | | |
| Examples and descriptors for Core Surgical Training | <ul style="list-style-type: none"> • Prepares appropriate materials to support teaching episodes • Seeks and interprets simple feedback following teaching • Supervises a medical student, nurse or colleague through a simple procedure • Plans, develops and delivers small group teaching to medical students, nurses or colleagues | | | |
| Examples and descriptors for CCT | <ul style="list-style-type: none"> • Performs a workplace based assessment including giving appropriate feedback • Devises a variety of different assessments (eg MCQs, WPBAs) • Appraises a medical student, nurse or colleague • Acts as a mentor to a medical student, nurses or colleague • Plans, develops and delivers educational programmes with clear objectives and outcomes • Plans, develops and delivers an assessment programme to support educational activities | | | |

| | Professional Behaviour and Leadership | Mapping to Leadership Curriculum | Assessment technique | Areas in which simulation should be used to develop relevant skills |
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| Category | <p>Keeping up to date and understanding how to analyse information</p> <p>Including</p> <ul style="list-style-type: none"> • <i>Ethical research</i> (GMP Domains: 1) • Evidence and guidelines (GMP Domains: 1) • Audit (GMP Domains: 1, 2) • Personal development | Area 1.3 | | |
| Objective | <ul style="list-style-type: none"> • To understand the results of research as they | | Mini PAT, | |

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| | <p>relate to medical practise</p> <ul style="list-style-type: none"> • To participate in medical research • To use current best evidence in making decisions about the care of patients • To construct evidence based guidelines and protocols • To complete an audit of clinical practice • At actively seek opportunities for personal development • To participate in continuous professional development activities | <p>Area 1.3</p> <p>Area 1.3</p> | <p>CBD, Portfolio assessment at ARCP, MRCS and specialty FRCS</p> | |
| Knowledge | <ul style="list-style-type: none"> • Understands GMC guidance on good practice in research • Understands the principles of research governance • Understands research methodology including qualitative, quantitative, bio-statistical and epidemiological research methods • Understands of the application of statistics as applied to medical practise • Outline sources of research funding • Understands the principles of critical appraisal • Understands levels of evidence and quality of evidence • Understands guideline development together with their roles and limitations • Understands the different methods of obtaining data for audit • Understands the role of audit in improving patient care and risk management • Understands the audit cycle • Understands the working and uses of national and local databases used for audit such as specialty data collection systems, cancer registries etc • To demonstrate knowledge of the importance of best practice, transparency and consistency | <p>Area 1.3</p> | | |
| Skills | <ul style="list-style-type: none"> • Develops critical appraisal skills and applies these when reading literature • Devises a simple plan to test a hypothesis • Demonstrates the ability to write a scientific paper • Obtains appropriate ethical research approval • Uses literature databases • Contribute to the construction, review and updating of local (and national) guidelines of good practice using the principles of evidence based medicine • Designs, implements and completes audit cycles • Contribute to local and national audit projects as appropriate • To use a reflective approach to practice with an ability to learn from previous experience • To use assessment, appraisal, complaints and other feedback to discuss and develop an understanding of own development needs | <p>Area 1.3</p> <p>Area 1.3</p> | | |
| Behaviour | <ul style="list-style-type: none"> • Follows guidelines on ethical conduct in research and consent for research • Keep up to date with national reviews and guidelines of practice (e.g. NICE) • Aims for best clinical practice at all times, | | | |

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| Sub-category: | <p>Manager including</p> <ul style="list-style-type: none"> • Self Awareness and self management (GMP Domains: 1) • Team-working (GMP Domains: 1, 3) • Leadership (GMP Domains: 1, 2, 3) • Principles of quality and safety improvement (GMP Domains: 1, 3, 4) • Management and NHS structure (GMP Domains: 1) | <p>Area 1.1 and 1.2 Area 2</p> <p>Area 4.2, 4.3, 4.4 Area 3</p> | | |
| Objective | <p>Self awareness and self management</p> <ul style="list-style-type: none"> • To recognise and articulate one's own values and principles, appreciating how these may differ from those of others • To identify one's own strengths, limitations and the impact of their behaviour • To identify their own emotions and prejudices and understand how these can affect their judgement and behaviour • To obtain, value and act on feedback from a variety of sources • To manage the impact of emotions on behaviour and actions • To be reliable in fulfilling responsibilities and commitments to a consistently high standard • To ensure that plans and actions are flexible, and take into account the needs and requirements of others • To plan workload and activities to fulfil work requirements and commitments with regard to their own personal health <p>Team working</p> <ul style="list-style-type: none"> • To identify opportunities where working with others can bring added benefits • To work well in a variety of different teams and team settings by listening to others, sharing information, seeking the views of others, empathising with others, communicating well, gaining trust, respecting roles and expertise of others, encouraging others, managing differences of opinion, adopting a team approach <p>Leadership</p> <ul style="list-style-type: none"> • To develop the leadership skills necessary to lead teams effectively. These include: <ul style="list-style-type: none"> • Identification of contexts for change • Application of knowledge and evidence to produce an evidence based challenge to systems and processes • Making decision by integrating values with evidence • Evaluating impact of change and taking corrective action where necessary <p>Principles of quality and safety improvement</p> | <p>Area 1.1 and 1.2</p> <p>Area 2</p> <p>Area 5</p> <p>Area 4.2, 4.3 and 4.4</p> | <p>Mini PAT and CBD</p> <p>Mini PAT, CBD and Portfolio assessment during ARCP</p> <p>Mini PAT, CBD and Portfolio assessment during ARCP</p> <p>Mini PAT, CBD and</p> | <p>Desirable: Patient safety Human factors</p> |

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| | <ul style="list-style-type: none"> • To recognise the desirability of monitoring performance, learning from mistakes and adopting no blame culture in order to ensure high standards of care and optimise patient safety • To critically evaluate services • To identify where services can be improved • To support and facilitate innovative service improvement <p>Management and NHS culture</p> <ul style="list-style-type: none"> • To organise a task where several competing priorities may be involved • To actively contribute to plans which achieve service goals • To manage resources effectively and safely • To manage people effectively and safely • To manage performance of themselves and others • To understand the structure of the NHS and the management of local healthcare systems in order to be able to participate fully in managing healthcare provision | <p>Area 3</p> | <p>Portfolio assessment during ARCP</p> <p>Mini PAT, CBD and Portfolio assessment during ARCP</p> | |
| <p>Knowledge</p> | <p>Self awareness and self management</p> <ul style="list-style-type: none"> • Demonstrate knowledge of ways in which individual behaviours impact on others; • Demonstrate knowledge of personality types, group dynamics, learning styles, leadership styles • Demonstrate knowledge of methods of obtaining feedback from others • Demonstrate knowledge of tools and techniques for managing stress • Demonstrate knowledge of the role and responsibility of occupational health and other support networks • Demonstrate knowledge of the limitations of self professional competence <p>Team working</p> <ul style="list-style-type: none"> • Outline the components of effective collaboration and team working • Demonstrate knowledge of specific techniques and methods that facilitate effective and empathetic communication • Demonstrate knowledge of techniques to facilitate and resolve conflict • Describe the roles and responsibilities of members of the multidisciplinary team • Outline factors adversely affecting a doctor's and team performance and methods to rectify these • Demonstrate knowledge of different leadership styles <p>Leadership</p> <ul style="list-style-type: none"> • Understand the responsibilities of the various Executive Board members and Clinical Directors or leaders • Understand the function and responsibilities of national bodies such as DH, HCC, NICE, NPSA, NCAS; Royal Colleges and Faculties, specialty specific bodies, representative bodies; regulatory | <p>Areas 1.1 and 1.2</p> <p>Area 2</p> <p>Area 5</p> | | |

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| | <p>processes and role</p> <ul style="list-style-type: none"> • Understand the principles of recruitment and appointment procedures • Understand basic management techniques | | | |
| Skills | <p>Self awareness and self management</p> <ul style="list-style-type: none"> • Demonstrate the ability to maintain and routinely practice critical self awareness, including able to discuss strengths and weaknesses with supervisor, recognising external influences and changing behaviour accordingly • Demonstrate the ability to show awareness of and sensitivity to the way in which cultural and religious beliefs affect approaches and decisions, and to respond respectfully • Demonstrate the ability to recognise the manifestations of stress on self and others and know where and when to look for support • Demonstrate the ability to balance personal and professional roles and responsibilities, prioritise tasks, having realistic expectations of what can be completed by self and others <p>Team working</p> <ul style="list-style-type: none"> • Preparation of patient lists with clarification of problems and ongoing care plan • Detailed hand over between shifts and areas of care • Communicate effectively in the resolution of conflict, providing feedback • Develop effective working relationships with colleagues within the multidisciplinary team • Demonstrate leadership and management in the following areas: <ul style="list-style-type: none"> ○ Education and training of junior colleagues and other members of the team ○ Deteriorating performance of colleagues (e.g. stress, fatigue) ○ Effective handover of care between shifts and teams • Lead and participate in interdisciplinary team meetings • Provide appropriate supervision to less experienced colleagues • Timely preparation of tasks which need to be completed to a deadline <p>Leadership</p> <ul style="list-style-type: none"> • Discuss the local, national and UK health priorities and how they impact on the delivery of health care relevant to surgery • Identify trends, future options and strategy relevant to surgery • Compare and benchmark healthcare services • Use a broad range of scientific and policy publications relating to delivering healthcare services • Prepare for meetings by reading agendas, understanding minutes, action points and background research on agenda items • Work collegiately and collaboratively with a wide | <p>Area 1.2 and 1.2</p> <p>Area 2</p> <p>Area 5</p> | | |

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| | <p>range of people outside the immediate clinical setting</p> <ul style="list-style-type: none"> • Evaluate outcomes and re-assess the solutions through research, audit and quality assurance activities • Understand the wider impact of implementing change in healthcare provision and the potential for opportunity costs <p>Quality and safety improvement</p> <ul style="list-style-type: none"> • Adopt strategies to reduce risk e.g. Safe surgery • Contribute to quality improvement processes e.g. <ul style="list-style-type: none"> ○ Audit of personal and departmental performance ○ Errors / discrepancy meetings ○ Critical incident and near miss reporting ○ Unit morbidity and mortality meetings ○ Local and national databases • Maintenance of a personal portfolio of information and evidence • Creatively question existing practise in order to improve service and propose solutions <p>Management and NHS Structures</p> <ul style="list-style-type: none"> • Manage time and resources effectively • Utilise and implement protocols and guidelines • Participate in managerial meetings • Take an active role in promoting the best use of healthcare resources • Work with stakeholders to create and sustain a patient-centred service • Employ new technologies appropriately, including information technology • Conduct an assessment of the community needs for specific health improvement measures | <p>Area 4.2, 4.3, 4.4</p> <p>Area 3</p> | | |
| Behaviour | <p>Self awareness and self management</p> <ul style="list-style-type: none"> • To adopt a patient-focused approach to decisions that acknowledges the right, values and strengths of patients and the public • To recognise and show respect for diversity and differences in others • To be conscientious, able to manage time and delegate • To recognise personal health as an important issue <p>Team working</p> <ul style="list-style-type: none"> • Encourage an open environment to foster and explore concerns and issues about the functioning and safety of team working • Recognise limits of own professional competence and only practise within these. • Recognise and respect the skills and expertise of others • Recognise and respect the request for a second opinion • Recognise the importance of induction for new members of a team • Recognise the importance of prompt and accurate information sharing with Primary Care team | <p>Area 1.1 and 1.2</p> <p>Area 2</p> | | |

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| | <ul style="list-style-type: none"> • Invites and encourages feedback from patients • Demonstrates awareness of own contribution to patient safety within a team and is able to outline the roles of other team members. • Keeps records up-to-date and legible and relevant to the safe progress of the patient. • Hands over care in a precise, timely and effective manner • Supervises the process of finalising and submitting operating lists to the theatre suite <p>Leadership</p> <ul style="list-style-type: none"> • Complies with clinical governance requirements of organisation • Presents information to clinical and service managers (eg audit) • Contributes to discussions relating to relevant issues e.g. workload, cover arrangements using clear and concise evidence and information <p>Quality and safety improvement</p> <ul style="list-style-type: none"> • Understands that clinical governance is the overarching framework that unites a range of quality improvement activities • Participates in local governance processes • Maintains personal portfolio • Engages in clinical audit • Questions current systems and processes <p>Management and NHS Structures</p> <ul style="list-style-type: none"> • Participates in audit to improve a clinical service • Works within corporate governance structures • Demonstrates ability to manage others by teaching and mentoring juniors, medical students and others, delegating work effectively, • Highlights areas of potential waste | <p>Area 5</p> <p>Area 4.2, 4.3, 4.4</p> <p>Area 3</p> | | |
| <p>Examples and descriptors for CCT</p> | <p>Self awareness and self management</p> <ul style="list-style-type: none"> • Participates in case conferences as part of multidisciplinary and multi agency team • Responds to service pressures in a responsible and considered way • Liaises with colleagues in the planning and implementation of work rotas <p>Team working</p> <ul style="list-style-type: none"> • Discusses problems within a team and provides an analysis and plan for change • Works well in a variety of different teams • Shows the leadership skills necessary to lead the multidisciplinary team • Beginning to leads multidisciplinary team meetings <ul style="list-style-type: none"> ○ Promotes contribution from all team members ○ Fosters an atmosphere of collaboration ○ Ensures that team functioning is maintained at all times. ○ Recognises need for optimal team dynamics ○ Promotes conflict resolution • Recognises situations in which others are better | <p>Area 1.1 and 1.2</p> <p>Area 2</p> | | |

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| Objective | <ul style="list-style-type: none"> To demonstrate an understanding of the determinants of health and public policy in relation to individual patients To promote supporting people with long term conditions to self-care To develop the ability to work with individuals and communities to reduce levels of ill health and to remove inequalities in healthcare provision To promote self care | N/A | MRCS, specialty FRCS, CBD, Mini PAT | |
| Knowledge | <ul style="list-style-type: none"> Understand guidance documents relevant to the support of self care Recognises the agencies that can provide care and support out with the hospital Understand the factors which influence the incidence and prevalence of common conditions including psychological, biological, social, cultural and economic factors Understand the screening programmes currently available within the UK Understand the possible positive and negative implications of health promotion activities Demonstrate knowledge of the determinants of health worldwide and strategies to influence policy relating to health issues Outline the major causes of global morbidity and mortality and effective, affordable interventions to reduce these | | | |
| Skills | <ul style="list-style-type: none"> Adapts assessment and management accordingly to the patients social circumstances Assesses patient's ability to access various services in the health and social system and offers appropriate assistance Ensures appropriate equipment and devices are discussed and where appropriate puts the patient in touch with the relevant agency Facilitating access to appropriate training and skills to develop the patients' confidence and competence to self care Identifies opportunities to promote change in lifestyle and to prevent ill health Counsels patients appropriately on the benefits and risks of screening and health promotion activities | | | |
| Behaviour | <ul style="list-style-type: none"> Recognises the impact of long term conditions on the patient, family and friends Put patients in touch with the relevant agency including the voluntary sector from where they can access support or equipment relevant to their care Show willingness to maintain a close working relationship with other members of the multi-disciplinary team, primary and community care Recognise and respect the role of family, friends and carers in the management of the patient with a long term condition Encourage where appropriate screening to facilitate early intervention | | | |
| Examples and descriptors for Core Surgical | <ul style="list-style-type: none"> Understands that "quality of life" is an important goal of care and that this may have different meanings for each patient Promotes patient self care and independence Helps the patient to develop an active | | | |

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|---|---|--|--|--|
| Training | <p>understanding of their condition and how they can be involved in self management</p> <ul style="list-style-type: none"> • Discusses with patients those factors which could influence their health | | | |
| Examples and descriptors for CCT | <ul style="list-style-type: none"> • Demonstrates awareness of management of long term conditions • Develops management plans in partnership with the patient that are pertinent to the patients long term condition • Engages with relevant external agencies to promote improving patient care • Support small groups in a simple health promotion activity • Discuss with small groups the factors that have an influence on their health and describe steps they can undertake to address these • Provide information to an individual about a screening programme offering specific guidance in relation to their personal health and circumstances concerning the factors that would affect the risks and benefits of screening to them as an individual. | | | |

| | Professional Behaviour and Leadership | Mapping to Leadership Curriculum | Assessment technique | Areas in which simulation should be used to develop relevant skills |
|----------------------|--|---|---|--|
| Sub-category: | Probity and Ethics To include <ul style="list-style-type: none"> Acting with integrity Medical Error Medical ethics and confidentiality (GMP Domains: 1, 2, 3, 4) Medical consent (GMP Domains: 1, 3, 4) Legal framework for medical practise (GMP Domains: 1, 2, 3) | Area 1.4 | | |
| Objective | <ul style="list-style-type: none"> To uphold personal, professional ethics and values, taking into account the values of the organisation and the culture and beliefs of individuals To communicate openly, honestly and inclusively To act as a positive role model in all aspects of communication To take appropriate action where ethics and values are compromised To recognise and respond the causes of medical error To respond appropriately to complaints To know, understand and apply appropriately the principles, guidance and laws regarding medical ethics and confidentiality as they apply to surgery To understand the necessity of obtaining valid consent from the patient and how to obtain To understand the legal framework within which healthcare is provided in the UK To recognise, analyse and know how to deal with unprofessional behaviours in clinical practice, taking into account local and national regulations Understand ethical obligations to patients and colleagues To appreciate an obligation to be aware of personal good health | Area 1.4 | Mini PAT and CBD, PBA, DOPS, MRCS, specialty FRCS | Desirable: Human factors |
| Knowledge | <ul style="list-style-type: none"> Understand local complaints procedure Recognise factors likely to lead to complaints Understands the differences between system and individual errors Outline the principles of an effective apology Knows and understand the professional, legal and ethical codes of the General Medical Council and any other codes to which the physician is bound Understands of the principles of medical ethics Understands the principles of confidentiality Understands the Data Protection Act and Freedom of Information Act Understands the principles of Information Governance and the role of the Caldicott Guardian | Area 1.4 | | |

| | | | | |
|------------------|--|--------------------------------------|--|--|
| | <ul style="list-style-type: none"> • Understands the legal framework for patient consent in relation to medical practise • Recognises the factors influencing ethical decision making including religion, personal and moral beliefs, cultural practices • Understands the standards of practice defined by the GMC when deciding to withhold or withdraw life-prolonging treatment • Understands the UK legal framework and GMC guidelines for taking and using informed consent for invasive procedures including issues of patient incapacity | | | |
| Skills | <ul style="list-style-type: none"> • To recognise, analyse and know how to deal with unprofessional behaviours in clinical practice taking into account local and national regulations • To create open and nondiscriminatory professional working relationships with colleagues awareness of the need to prevent bullying and harassment • Contribute to processes whereby complaints are reviewed and learned from • Explains comprehensibly to the patient the events leading up to a medical error or serious untoward incident, and sources of support for patients and their relatives • Deliver an appropriate apology and explanation relating to error • Use and share information with the highest regard for confidentiality both within the team and in relation to patients • Counsel patients, family, carers and advocates tactfully and effectively when making decisions about resuscitation status, and withholding or withdrawing treatment • Present all information to patients (and carers) in a format they understand, checking understanding and allowing time for reflection on the decision to give consent • Provide a balanced view of all care options • Applies the relevant legislation that relates to the health care system in order to guide one's clinical practice including reporting to the Coroner's/Procurator Officer, the Police or the proper officer of the local authority in relevant circumstances • Ability to prepare appropriate medical legal statements for submission to the Coroner's Court, Procurator Fiscal, Fatal Accident Inquiry and other legal proceedings • Be prepared to present such material in Court | Area 1.4 Area 1.4 | | |
| Behaviour | <ul style="list-style-type: none"> • To demonstrate acceptance of professional regulation • To promote professional attitudes and values • To demonstrate probity and the willingness to be truthful and to admit errors • Adopt behaviour likely to prevent causes for complaints • Deals appropriately with concerned or dissatisfied patients or relatives • Recognise the impact of complaints and medical error on staff, patients, and the National Health Service | Area 1.4 Area 1.4 Area 1.4 | | |

| | | | | |
|--|--|----------------------------------|--|--|
| | <ul style="list-style-type: none"> • Contribute to a fair and transparent culture around complaints and errors • Recognise the rights of patients to make a complaint • Identify sources of help and support for patients and yourself when a complaint is made about yourself or a colleague • Show willingness to seek advice of peers, legal bodies, and the GMC in the event of ethical dilemmas over disclosure and confidentiality • Share patient information as appropriate, and taking into account the wishes of the patient • Show willingness to seek the opinion of others when making decisions about resuscitation status, and withholding or withdrawing treatment • Seeks and uses consent from patients for procedures that they are competent to perform while <ul style="list-style-type: none"> ○ Respecting the patient's autonomy ○ Respecting personal, moral or religious beliefs ○ Not exceeding the scope of authority given by the patient ○ Not withholding relevant information • Seeks a second opinion, senior opinion, and legal advice in difficult situations of consent or capacity • Show willingness to seek advice from the employer, appropriate legal bodies (including defence societies), and the GMC on medico-legal matters | | | |
| Examples and descriptors for Core Surgical Training | <ul style="list-style-type: none"> • Reports and rectifies an error if it occurs • Participates in significant event audits • Participates in ethics discussions and forums • Apologises to patient for any failure as soon as an error is recognised • Understands and describes the local complaints procedure • Recognises need for honesty in management of complaints • Learns from errors • Respect patients' confidentiality and their autonomy • Understand the Data Protection Act and Freedom of Information Act • Consult appropriately, including the patient, before sharing patient information • Participate in decisions about resuscitation status, withholding or withdrawing treatment • Obtains consent for interventions that he/she is competent to undertake • Knows the limits of their own professional capabilities | Area 1.4 Area 1.4 Area 1.4 | | |

The Assessment System

Assessment and feedback

Overview of the assessment system

The curriculum adopts the following GMC definitions:

Assessment

A systematic procedure for measuring a trainee's progress or level of achievement, against defined criteria to make a judgement about a trainee.

Assessment system

An integrated set of assessments which is in place for the entire postgraduate training programme and which is blueprinted against and supports the approved curriculum.

Purpose of the assessment system

The purpose of the assessment system is to:

- Determine whether trainees are meeting the standards of competence and performance specified at various stages in the curriculum for surgical training.
- Provide systematic and comprehensive feedback as part of the learning cycle.
- Determine whether trainees have acquired the common and specialty-based knowledge, clinical judgement, operative and technical skills, and generic professional behaviour and leadership skills required to practise at the level of Certification in the designated surgical specialty.
- Address all the domains of [Good Medical Practice](#) and conform to the principles laid down by the GMC.

Components of the assessment system

The individual components of the assessment system are:

- Workplace-based assessments covering knowledge, clinical judgement, technical skills and professional behaviour and attitudes. These are complemented by the surgical logbook of procedures to support the assessment of operative skills
- Examinations held at key stages; during the early years of training and towards the end of specialty training
- The Learning Agreement and the Assigned Educational Supervisors' report
- An Annual Review of Competence Progression (ARCP)

In order to be included in the assessment system, the assessments methods selected have to meet the following criteria.

- **Valid** - To ensure face validity, the workplace based assessments comprise direct observations of workplace tasks. The complexity of the tasks increases in line with progression through the training programme. To ensure content validity all the assessment instruments have been blueprinted against all the standards of Good Medical Practice.
- **Reliable** - In order to increase reliability, there will be multiple measures of outcomes. ISCP assessments make use of several observers' judgements, multiple assessment methods (triangulation) and take place frequently. The planned, systematic and permanent programme of assessor training for trainers and Assigned Educational Supervisors (AESs) through the postgraduate deaneries/LETBs is intended to gain maximum reliability of placement reports.
- **Feasible** - The practicality of the assessments in the training and working environment has been taken into account. The assessment should not add a significant amount of time to the workplace task being assessed and assessors should be able to complete the scoring and feedback part of the assessment in 5-10 minutes.
- **Cost-effectiveness** – Once staff have been trained in the assessment process and are familiar with the ISCP website, the only significant additional costs should be any extra time taken for

assessments and feedback and the induction of new Assigned Educational Supervisors. The most substantial extra time investment will be in the regular appraisal process for units that did not previously have such a system.

- **Opportunities for feedback** – All the assessments, both those for learning and of learning, include a feedback element. Structured feedback is a fundamental component of high quality assessment and should be incorporated throughout workplace based assessments.
- **Impact on learning** - The workplace-based assessments are all designed to include immediate feedback as part of the process. A minimum number of three appraisals with the AES per clinical placement are built into the training system. The formal examinations all provide limited feedback as part of the summative process. The assessment process thus has a continuous developmental impact on learning. The emphasis given to reflective practice within the portfolio also impacts directly on learning.

Assessment and feedback

Types of assessment

The assessment blueprint and framework

The Overarching Blueprint demonstrates that the curriculum is consistent with the four domains of Good Medical Practice: Knowledge, skills and performance; *Safety and quality*; *Communication, partnership and teamwork*; *Maintaining trust*. The specialty-specific syllabuses specify the knowledge, skills and performance required for different stages of training and have patient safety as their principal consideration. The professional behaviour and leadership skills syllabus specifies the standards for patient safety; communication, partnership and team-working and maintaining trust. The standards have been informed by the Academy Common Competency Framework and the Academy and NHS Leadership Competency Framework.

Curriculum assessment runs throughout training as illustrated in the Assessment Framework (PDF: 16kb) and is common to all disciplines of surgery.

Types of assessment

Assessments can be categorised as *for learning* or *of learning*, although there is a link between the two.

Assessment for Learning - is primarily aimed at aiding learning through constructive feedback that identifies areas for development. Alternative terms are Formative or Low-stakes assessment. Lower reliability is acceptable for individual assessments as they can and should be repeated frequently. This increases their reliability and helps to document progress. Such assessments are ideally undertaken in the workplace.

Assessments for learning are used in the curriculum as part of a developmental or on-going teaching and learning process and mainly comprise workplace-based assessments. They provide the trainee with educational feedback from skilled clinicians that should result in reflection on practice and an improvement in the quality of care. Assessments are collated in the trainee's learning portfolio. These are regularly reviewed during each placement, providing evidence that inform the judgement of the Assigned Educational Supervisors' (AES) reports to the Training Programme Director and the Annual Review of Competence Progression (ARCP). Assessments for learning therefore contribute to summative judgements of the trainee's progress.

Assessment of Learning - is primarily aimed at determining a level of competence to permit progression through training or for certification. Such assessments are undertaken infrequently (e.g. examinations) and must have high reliability as they often form the basis of decisions. Alternative terms are summative or high-stakes assessments [GMC].

Assessments of learning in the curriculum are focussed on the waypoints in the specialty syllabuses. For the most part these comprise the examinations and structured AES end of placement reports which, taken in the round, cover the important elements of the syllabus and ensure that no gaps in achievement are allowed to develop. They are collated at the ARCP panel, which determines progress or otherwise.

The balance between the two assessment approaches principally relates to the relationship between competence and performance. Competence (can do) is necessary but not sufficient for performance (does), and as trainees' experience increases so performance-based assessment in the workplace becomes more important.

Assessment and feedback

Workplace Based Assessment (WBA)

The purpose of WBA

The primary purpose of WBA is to provide short loop feedback between trainers and their trainees – a formative assessment to support learning. They are designed to be mainly trainee driven but may be triggered or guided by the trainer. The number of types and intensity of each type of WPBA in any one assessment cycle will be initially determined by the Learning Agreement fashioned at the beginning of a training placement and regularly reviewed. The intensity may be altered to reflect progression and trainee need. For example a trainee in difficulty would undertake more frequent assessments above an agreed baseline for all trainees. In that sense WPBAs meet the criterion of being adaptive.

WBAs are designed to:

- **Provide feedback to trainers and trainees as part of the learning cycle**

The most important use of the workplace-based assessments is in providing trainees with feedback that informs and develops their practice (formative). Each assessment is completed only for the purpose of providing meaningful feedback on one encounter. The assessments should be viewed as part of a process throughout training, enabling trainees to build on assessor feedback and chart their own progress. Trainees should complete more than the minimum number identified.

- **Provide formative guidance on practice**

Surgical trainees can use different methods to assess themselves against important criteria (especially that of clinical reasoning and decision-making) as they learn and perform practical tasks. The methods also encourage dialogue between the trainee and Assigned Educational Supervisor (AES), Clinical Supervisors (CS) and other trainers.

- **Encompass the assessment of skills, knowledge, behaviour and attitudes during day-to-day surgical practice**

WBA is trainee led; the trainee chooses the timing, the case and assessor under the guidance of the AES via the Learning Agreement. It is the trainee's responsibility to ensure completion of the required number of the agreed type of assessments by the end of each placement.

- **Provide a reference point on which current levels of competence can be compared with those at the end of a particular stage of training**

The primary aim is for trainees to use assessments throughout their training programmes to demonstrate their learning and development. At the start of a level it would be normal for trainees to have some assessments which are less than satisfactory because their performance is not yet at the standard for the completion of that level. In cases where assessments are less than satisfactory, trainees should repeat assessments as often as required to show progress.

- **Inform the AES's (summative) assessment at the completion of each placement**

Although the principal role of WBA is formative, the summary evidence will be used to inform the annual review process and will contribute to the decision made as to how well the trainee is progressing.

- **Contribute towards a body of evidence held in the trainee's learning portfolio and be made available for the Annual Review of Competence Progression (ARCP)**

At the end of a period of training, the trainee's portfolio will be reviewed. The accumulation of formative assessments will be one of a range of indicators that inform the decision as to satisfactory completion of training at the ARCP.

Guidance on good practice use of the Workplace Based assessments (WBAs)

The assessment methods used are:

- [CBD \(Case Based Discussion\)](#)
- [CEX \(Clinical Evaluation Exercise\)](#)
- [PBA \(Procedure-based Assessment\)](#)
- [DOPS \(Direct Observation of Procedural Skills in Surgery\)](#)
- [Multi Source Feedback \(Peer Assessment Tool\)](#)
- [Assessment of Audit](#)
- [Observation of Teaching](#)

Assessment of Audit (AoA)

The AoA reviews a trainee's competence in completing an audit. Like all workplace-based assessments, it is intended to support reflective learning through structured feedback. It was adapted for surgery from an instrument originally developed and evaluated by the UK Royal Colleges of Physicians.

The assessment can be undertaken whenever an audit is presented or otherwise submitted for review. It is recommended that more than one assessor takes part in the assessment, and this may be any surgeon with experience appropriate to the process. Assessors do not need any prior knowledge of the trainee or their performance to date, nor do the assessors need to be the trainee's current Assigned Educational Supervisor.

Verbal feedback should be given immediately after the assessment and should take no more than 5 minutes to provide. A summary of the feedback with any action points should be recorded on the Assessment of Audit form and uploaded into the trainee's portfolio.

The Assessment of Audit guidance notes provide a breakdown of competences evaluated by this method.

Case Based Discussion (CBD)

The CBD was originally developed for the Foundation training period and was contextualised to the surgical environment. The method is designed to assess clinical judgement, decision-making and the application of medical knowledge in relation to patient care in cases for which the trainee has been directly responsible. The method is particularly designed to test higher order thinking and synthesis as it allows assessors to explore deeper understanding of how trainees compile, prioritise and apply knowledge. The CBD is not focused on the trainees' ability to make a diagnosis nor is it a viva-style assessment. The CBD should be linked to the trainee's reflective practice.

The CBD process is a structured, in-depth discussion between the trainee and the trainee's assessor (normally the Assigned Educational Supervisor) about how a clinical case was managed by the trainee; talking through what occurred, considerations and reasons for actions. By using clinical cases that offer a challenge to the trainee, rather than routine cases, the trainee is able to explain the complexities involved and the reasoning behind choices they made. It also enables the discussion of the ethical and legal framework of practice. It uses patient records as the basis for dialogue, for systematic assessment and structured feedback. As the actual record is the focus for the discussion, the assessor can also evaluate the quality of record keeping and the presentation of cases.

Most assessments take no longer than 15-20 minutes. After completing the discussion and filling in the assessment form, the assessor should provide immediate feedback to the trainee. Feedback would normally take about 5 minutes.

Clinical Evaluation Exercise (CEX) and Clinical Evaluation Exercise for Consent (CEXC)

The CEX/C is a method of assessing skills essential to the provision of good clinical care and to facilitate feedback. It assesses the trainee's clinical and professional skills on the ward, on ward rounds, in Accident and Emergency or in outpatient clinics. It was designed originally by the American Board of Internal Medicine and was contextualised to the surgical environment.

Trainees will be assessed on different clinical problems that they encounter from within the curriculum in a range of clinical settings. Trainees are encouraged to choose a different assessor for each assessment but one of the assessors must be the trainee's current Assigned Educational Supervisor. Each assessor must have expertise in the clinical problem.

The assessment involves observing the trainee interact with a patient in a clinical encounter. The areas of competence covered include: consent (CEXC), history taking, physical examination, professionalism, clinical judgement, communication skills, organisation/efficiency and overall clinical care. Most encounters should take between 15-20 minutes.

Assessors do not need to have prior knowledge of the trainee. The assessor's evaluation is recorded on a structured form that enables the assessor to provide developmental verbal feedback to the trainee immediately after the encounter. Feedback would normally take about 5 minutes.

Direct Observation of Procedural Skills (DOPS)

The DOPS is used to assess the trainee's technical, operative and professional skills in a range of basic diagnostic and interventional procedures, or parts of procedures, during routine surgical practice in order to facilitate developmental feedback. The method is a surgical version of an assessment tool originally developed and evaluated by the UK Royal Colleges of Physicians.

The DOPS is used in simpler environments and can take place in wards or outpatient clinics as well as in the operating theatre. DOPS is set at the standard for Core Surgical Training (CT1/ST1 and CT2/ST2) although some specialties may also use specialty level DOPS in higher specialty training.

The DOPS form can be used routinely every time the trainer supervises a trainee carrying out one of the specified procedures, with the aim of making the assessment part of routine surgical training practice. The procedures reflect the index procedures in each specialty syllabus which are routinely carried out in the trainees' workplace.

The assessment involves an assessor observing the trainee perform a practical procedure within the workplace. Assessors do not need to have prior knowledge of the trainee. The assessor's evaluation is recorded on a structured form that enables the assessor to provide verbal developmental feedback to the trainee immediately afterwards. Trainees are encouraged to choose a different assessor for each assessment but one of the assessors must be the current Assigned Educational Supervisor. Most procedures take no longer than 15-20 minutes. The assessor will provide immediate feedback to the trainee after completing the observation and evaluation. Feedback would normally take about 5 minutes.

The DOPS form is completed for the purpose of providing feedback to the trainee. The overall rating on any one assessment can only be completed if the entire procedure is observed. A judgement will be made on completion of the placement about the overall level of performance achieved in each of the assessed surgical procedures

Multi-Source Feedback (MSF)

Surgical trainees work as part of a multi-professional team with other people who have complementary skills. Trainees are expected to understand the range of roles and expertise of team members in order to communicate effectively to achieve high quality service for patients. The MSF, also known as peer and 360° assessment, is a method of assessing professional competence within a team-working environment and providing developmental feedback to the trainee.

Trainees should complete the MSF once a year. The trainee's Assigned Educational Supervisor (AES) may request further assessments if there are areas of concern at any time during training.

The MSF comprises a self-assessment and assessments of a trainee's performance from a range of co-workers. It uses up to 12 raters with a minimum of 8. Raters are chosen by the trainee and will always include the AES and a range of colleagues covering different grades and environments (e.g. ward, theatre, outpatients) but not patients.

The MSF process should be started in time for raters to submit their online assessments and the generation of the trainee's personalised feedback for discussion with the AES before the end of the placement, and for a further MSF to be performed before the end of the training year, if required. The MSF should, therefore, be undertaken:

- in the 3rd month of the first four-month placement in a training year
- in the 5th month of the first six-month placement in a training year
- in the 5th month of a one-year placement

The competences map across to the standards of Good Medical Practice and to the core objectives of the ISCP. The method enables serious concerns, such as those about a trainee's probity and health, to be highlighted in confidence to the AES, enabling appropriate action to be taken.

Feedback is in the form of a peer assessment chart that enables comparison of the self-assessment with the collated views received from co-workers for each of the 16 competences including a global rating, on a 3-point scale. Trainees are not given access to individual assessments, however, raters' written comments are listed verbatim. The AES should meet with the trainee to discuss the feedback on performance in the MSF. The AES makes comments and signs off the trainee's MSF assessment and can also recommend a repeat MSF.

Observation of Teaching (OoT)

The OoT provides formative feedback to trainees as part of the on-going culture of reflective learning that workplace-based assessment seeks to develop. It was adapted from the Teaching Observation Tool developed by the Joint Royal Colleges of Physicians' Training Board (JRCPTB) for use in surgery. It assesses instances of formal teaching delivered by the trainee as and when they arise.

The form is intended for use when teaching by a trainee is directly observed by the assessor. This must be in a formal situation where others are gathered specifically to learn from the speaker, and does not include bedside teaching or other occasions of teaching in the presence of a patient. Assessors may be any surgeon with suitable experience to review the teaching event; it is likely that these will be consultants for trainees in higher specialty levels.

Possible areas for consideration to aid assessment and evaluation are included in the guidance notes below. It should be noted that these are suggestions for when considering comments and observations rather than mandatory competences.

Procedure Based Assessment

The PBA assesses the trainee's technical, operative and professional skills in a range of specialty procedures or parts of procedures during routine surgical practice up to the level of certification. PBAs provide a framework to assess practice and facilitate feedback in order to direct learning. The PBA was originally developed by the Orthopaedic Competence Assessment Project (OCAP) for Trauma and Orthopaedic surgery and was further developed by the Specialty Advisory Committees for surgery for use in all the surgical specialties.

The assessment method uses two principal components:

- A series of competences within 5 domains. Most of the competences are common to all procedures, but a relatively small number of competences within certain domains are specific to a particular procedure.
- A global assessment that is divided into 8 levels of global rating. The highest rating is the ability to perform the procedure to the standard expected of a specialist in practice within the NHS (the level required for certification or equivalent).

The assessment form is supported by a worksheet consisting of descriptors outlining desirable and undesirable behaviours that assist the assessor in deciding whether or not the trainee has reached a satisfactory standard for certification, on the occasion observed, or requires development.

The procedures chosen should be representative of those that the trainee would normally carry out at that training level and will be one of an indicative list of index procedures relevant to the specialty. The trainee generally chooses the timing and makes the arrangements with the assessor. The assessor will normally be the trainee's, Clinical Supervisor or another surgical consultant trainer. One of the assessors must be the trainee's current Assigned Educational Supervisor. Some PBAs may be assessed by senior trainees depending upon their level of training and the complexity of the procedure. Trainees are encouraged to request assessments on as many procedures as possible with a range of different assessors.

Assessors do not need to have prior knowledge of the trainee. The assessor will observe the trainee undertaking the agreed sections of the PBA in the normal course of workplace activity (usually scrubbed). Given the priority of patient care, the assessor must choose the appropriate level of supervision depending on the trainee's stage of training. Trainees will carry out the procedure, explaining what they intend to do throughout. The assessor will provide verbal prompts, if required, and intervene if patient safety is at risk.

The practicalities of Workplace Based Assessment

Introduction

'I have no time to do this'

The clips located here are intended to illustrate the utility and versatility of the work based assessment tools (WPBA). They show that no more than ten minutes are required for any of these tools to be used meaningfully. They can be undertaken as a planned or as an opportunistic exercise. Any interaction with a trainee and trainer can be converted into a learning opportunity and then be evidenced for the benefit of the trainee and trainer as a WPBA.

The primary purpose of workplace-based assessments is for learning through constructive short loop feedback between trainers and their trainees that identifies areas for development. Collectively they are used as part of the Annual Review of Competence Progression (ARCP) which is a summative process. However, individually the tools are designed to develop trainees and are formative assessment tools which can:

- Trigger conversations between trainee and trainer;
- Enable observation and discussion of clinical practice;
- Record good practice and outline areas for development of knowledge, skills, judgement and professional behaviour;
- Formulate action plans for development;
- Enable trainees to analyse pattern recognition.

The tools are **not** intended to:

- Score trainees;
- Summate progress globally;
- Predict future performance;
- Be completed without a face to face feedback conversation.

These assessments can be divided into:

1. Observational tools

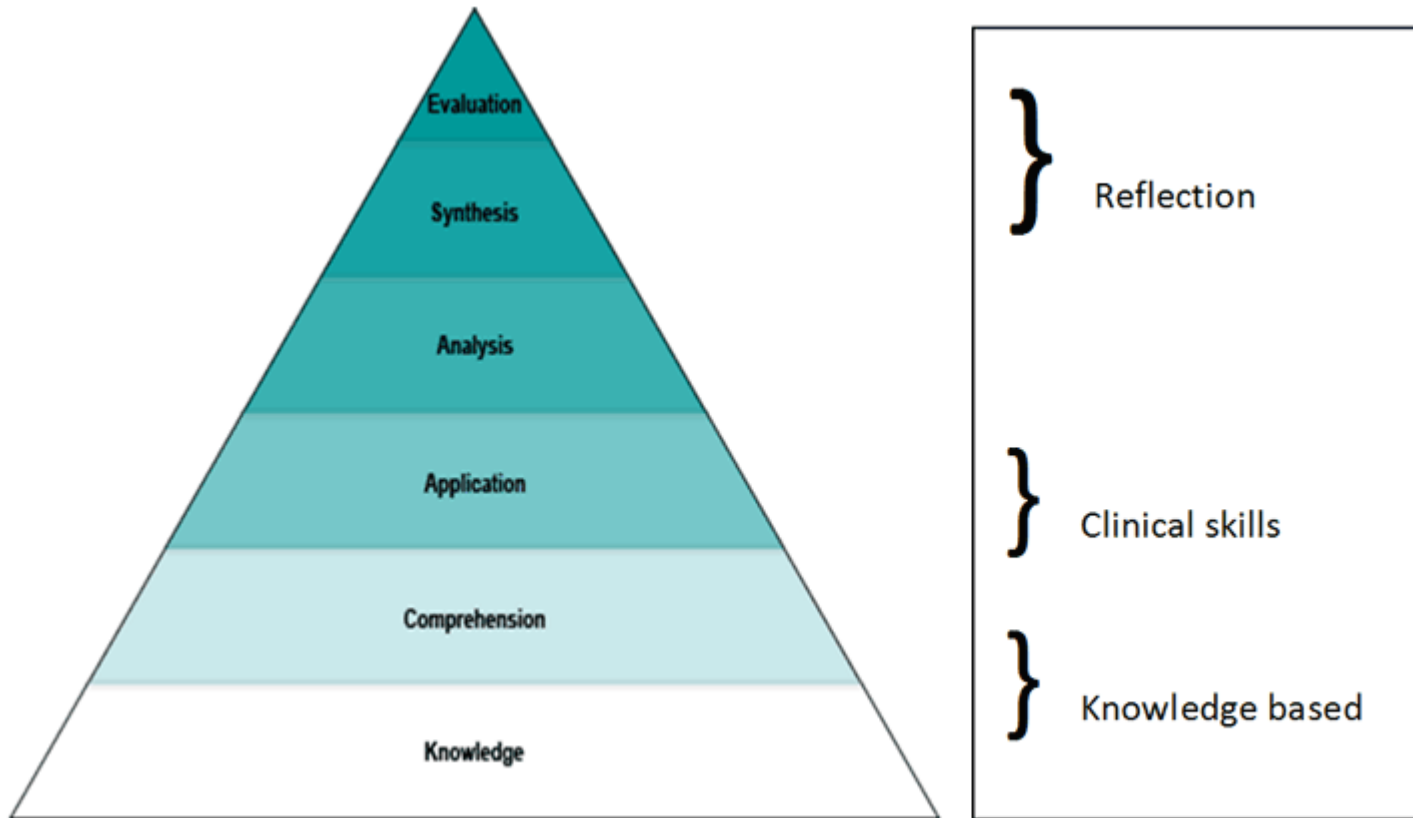
The purpose of the CEX, DOPS and PBA tools is to encourage trainee practice within a supported environment, followed by a developmental conversation (feedback) to identify elements of good practice and areas for development. Such development should be discussed in terms of follow up actions that will extend the trainee's technical proficiency and clinical skills.

2. Discussion tools

The CBD can record any conversation that reviews a trainee's practice or their thoughts about practice. From an office based, time protected tutorial to the short conversation that happens in the theatre coffee room, or even the corridor, a CBD allows trainers to explore the thinking of their trainees, and to share understanding and professional thinking.

CBDs focus on knowledge and understanding and occur at different levels of Bloom's taxonomy (see figure below). A CBD that looks at knowledge addresses the knowledge base of the trainee e.g. a trainee might be asked for the classification of shock. The trainer could take the discussion beyond the classification to look at how that knowledge relates to the understanding of the patient's condition and the symptoms manifested by the patient. Application relates to the use of knowledge and understanding in practice and so the trainee may be asked to consider the possible treatment options for that patient. Analysis and synthesis are higher order levels of the thinking or cognitive function and CBDs that look at a situation reflectively, to break it down and consider what elements helped or hindered patient care, can be invaluable to trainees in reviewing and making sense of their experiences and in extending their critical thinking. At the evaluation level trainees may well be engaging in discussions that relate to service improvement and changes in practice at a group level rather than an individual one.

Blooms Taxonomy



[3. Insight tools](#)

The Multi Source Feedback collects the trainee's self-assessment together with the subjective views of the trainee from a specified range of colleagues (consultants, specialty doctors, senior nurses and other healthcare providers.) The benefit of the MSF lies in the conversation between trainer and trainee to review and discuss the overview of the collated comments.

Practicalities

Trainers are under the pressure of training multiple trainees all at differing levels of competence and therefore with different training needs. EWTR and the constraints of managing a service as well as training require that we use our time smarter rather than working longer hours for both trainees and trainers. One educational opportunity whether in an operating theatre, on call or in a clinic can be developed into a targeted learning opportunity for individual but also multiple trainees.

The following videos will demonstrate how one case can:

1. allow targeted learning for multiple trainees
2. be alongside our normal surgical practice
3. make use of wastage time during our surgical practice
4. produce multiple items of evidence of trainee development for their portfolio

Each scenario demonstrated ensures that:

1. **Although the trainer facilitates the discussion, the recording of the case is undertaken by the trainee**
2. **Each discussion concludes with an action plan that tasks the trainee with further development**

Observational Tools

The purpose of the CEX, DOPS and PBA tools is to encourage trainee practice within a supported environment, followed by a developmental conversation (feedback) to identify elements of good practice and areas for development. Such development should be discussed in terms of follow up actions that will extend the trainee's technical proficiency and clinical skills.

The following clips demonstrate the versatility of surgical practice. An operation can be divided into several stages all of which can be used to develop trainees at differing levels of competence as well as developing teaching and training skills in the more senior trainees. The clips also demonstrate the use of DOPS and PBAs within a surgical team.

PBA/DOPS

Here a consultant is asked to provide feedback to two trainees on their DOPS (insertion of a catheter) and a PBA (laparoscopic port insertion) before the procedure begins and so this is trainee triggered. It is also possible that a list is designated as a training list and therefore all cases can be used in this way. It is important that trainees or trainers request that such tools be used prior to the procedure. DOPS, PBAs and CEXs are all observational tools and so if the observer is not aware that they are required to observe and provide feedback until after the event the quality of the observation and feedback will be compromised. Note that the consultant requested that the forms be available for her to use whilst observing and providing feedback to the trainees. This is to guide her in her evaluation and also to record comments for the trainees to document subsequently on the ISCP web-based forms.

The following clips are the discussions that occur in the coffee room after completing a laparoscopic cholecystectomy for a FY2, CTI and ST3.

Discussion Tools

The CBD can record any conversation that reviews a trainee's practice or their thoughts about practice. From an office based, time protected tutorial to the short conversation that happens in the theatre coffee room, or even the corridor, CBD allows trainers to explore the thinking of their trainees, and to share understanding and professional thinking.

CBDs that look at information are addressing the knowledge base of the trainee. This may be asking trainees for the classification of shock. A trainer could take the discussion beyond the classification to look at how that knowledge relates to the understanding of the patient's condition and the symptoms manifested by the patient. Application relates to the use of knowledge and understanding in practice and so the trainee may be asked to consider the possible treatment options for that patient. Analysis and synthesis are higher order levels of the thinking or cognitive function and CBDs that look at a situation reflectively, to break it down and consider what elements helped or hindered patient care, can be invaluable to trainees in reviewing and making sense of their experiences and in extending their critical thinking. At the evaluation level trainees may well be engaging in discussions that relate to service improvement and changes in practice at a group level rather than an individual one.

In the clips we see three CBDs focusing on the same case. The first looks at the knowledge base underpinning the case. The second looks at the clinical skills used by a CT2 - that is the application of knowledge and understanding. The third one looks at Reflection by the registrar involved in the case.

Overall Summary of case

A 23 year old man had arrived in Accident and Emergency (A&E) after being involved in a road traffic accident (RTA). He had been riding a bike and had been hit from the left hand side by a car, had got up and was shaken but sore. He was brought to A&E by ambulance and triaged by A&E. He was seen three hours later by the A&E SHO and fast tracked to SAU by a surgical CT1 at handover time. The incoming CT2 flagged him up as a case that should be reviewed by the Registrar on call. The CT2 had seen the patient in SAU as he had been transferred. Suspicious of a splenic injury with the clinical findings, he had requested a CT scan. The CT scan was carried out and was not reported for several hours. The patient was stable and so there was no real urgency but was discussed in the corridor with the consultant on call who had been angered by the clinical scenario and requested that the report be made readily available. The ST3 was busy on call and asked the CT2 to chase the report. Finally the scan result was available at 6pm just as the patient deteriorated and the ST3/ST5 was called urgently as blood pressure was falling. The patient needed urgent review and theatre that evening for a splenectomy. The procedure was carried out by an ST5 with consultant supervision.

Insight Tools

The Multi Source Feedback collects the trainee's self-assessment together with subjective views of the trainee from a specified range of colleagues (consultants, specialty doctors, senior nurses and other Health care providers.) The benefit of the MSF lies in the conversation between trainer and trainee to review and discuss the overview of the collated comments.

The Multi Source Feedback (previously known as Mini PAT) tool is used to provide a 360 degree range of feedback across a spectrum of professional domains which are closely related to the GMC duties of a good doctor. Trainees fill in their self-rating form and they ask a range of people for their ratings too, anonymously. When the data are collated electronically the Assigned Educational Supervisor will meet with the trainee to discuss the overview of the data.

The following two clips show two trainees, (played by the same actor) discussing their feedback with their Assigned Educational Supervisor.

In both clips the AES approaches the conversation in a similar way, explaining what she would like to discuss and then looking first at the strengths of the trainee and where these correlate to the strengths perceived by the other raters, before moving on to any developmental areas and finally compiling an action plan for further development.

Examinations

Examinations are held at two key stages: during initial training and towards the end of specialty training.

MRCS

The Membership Examination of the Surgical Royal Colleges of Great Britain and in Ireland (MRCS) is designed for candidates in the generality part of their specialty training. The purpose of the MRCS is to determine that trainees have acquired the knowledge, skills and attributes required for the completion of core training in surgery and, for trainees following the Intercollegiate Surgical Curriculum Programme, to determine their ability to progress to higher specialist training in surgery.

The MRCS examination has two parts: Part A (written paper) and Part B Objective Structured Clinical Examination (OSCE).

Part A (written paper)

Part A of the MRCS is a machine-marked, written examination using multiple-choice Single Best Answer and Extended Matching items. It is a four hour examination consisting of two papers, each of two hours' duration, taken on the same day. The papers cover generic surgical sciences and applied knowledge, including the core knowledge required in all surgical specialties as follows:

- Paper 1 - Applied Basic Science
- Paper 2 - Principles of Surgery-in-General

The marks for both papers are combined to give a total mark for Part A. To achieve a pass the candidate is required to demonstrate a minimum level of knowledge in each of the two papers in addition to achieving or exceeding the pass mark set for the combined total mark for Part A.

Part B (OSCE)

The Part B (OSCE) integrates basic surgical scientific knowledge and its application to clinical surgery. The purpose of the OSCE is to build on the test of knowledge encompassed in the Part A examination and test how candidates integrate their knowledge and apply it in clinically appropriate contexts using a series of stations reflecting elements of day-to-day clinical practice.

Further information can be obtained from www.intercollegiatemrcsexams.org.uk

DO-HNS and MRCS(ENT)

Otolaryngology trainees at CT1/2 level in ENT themed core surgical training posts should undertake Part A of the MRCS and the Part 2 (OSCE) of the Diploma in Otolaryngology – Head and Neck Surgery (DO-HNS) in order to acquire the Intercollegiate MRCS(ENT) Diploma. From August 2013, the MRCS(ENT) examination will be a formal exit requirement from Core Surgical Training for Otolaryngology trainees. It is also a mandatory requirement for entry into higher specialty training in ENT. The DO-HNS examination exists as a separate entity but is not a requirement for ST3 unless paired with the MRCS as explained above.

The purpose of the Diploma in Otolaryngology – Head and Neck Surgery (DO-HNS) is to test the breadth of knowledge, the clinical and communication skills and the professional attributes considered appropriate by the Colleges for a doctor intending to undertake practice within an otolaryngology department in a trainee position. It is also intended to provide a test for those who wish to practise within another medical specialty, but have an interest in the areas where that specialty interacts with the field of otolaryngology. It is also relevant for General Practitioners wishing to offer a service in minor ENT surgery.

FRCS

The Intercollegiate Specialty Examination (FRCS) is a summative assessment in each of the ten surgical specialties. It is a mandatory requirement for certification and entry to the Specialist Register. It forms part of the overall assessment system for UK and Irish surgical trainees who have participated in a formal surgical training programme leading to UK certification or a Certificate of Eligibility for Specialist Registration via the

Combined Programme (CESR CP) or, in the Republic of Ireland, a Certificate of Completion of Specialist Training (CCST).

Section 1 is a written test composed of two Multiple Choice Questions papers; Paper 1: Single Best Answer [SBA] and Paper 2: Extended Matching Items [EMI]. Candidates must meet the required standard in Section 1 in order to gain eligibility to proceed to Section 2.

Section 2 is the clinical component of the examination. It consists of a series of carefully designed and structured interviews on clinical topics, some being scenario-based and some being patient-based. Further information can be obtained from www.intercollegiate.org.uk

Feedback

All the assessments in the curriculum, both those *for* learning and *of* learning, include a feedback element. Workplace based assessments are designed to include immediate feedback for learning as part of two-way dialogue towards improving practice. Formal examinations provide limited feedback as part of the summative process. Assigned Educational Supervisors are able to provide further feedback to each of their trainees through the regular planned educational review and appraisal that features at the beginning, middle and end of each placement. Feedback is based on the evidence contained in the portfolio.

Educational feedback:

- Enhances the validity of the assessment and ensures trainees receive constructive criticism on their performance.
- Is given by skilled clinicians, thereby enhancing the learning process.

Constructive formative feedback should include three elements:

- An outline of the strengths the trainee displayed,
- Suggestions for development,
- Action plan for improvement.

Feedback is complemented by the trainee's reflection on his/her practice with the aim of improving the quality of care.

The Annual Review of Competence Progression (ARCP)

Purpose of the ARCP (adapted from the [Gold Guide](#)):

The ARCP is a formal Deanery/LETB process which scrutinises each surgical trainee's suitability to progress to the next stage of, or complete, the training programme. It follows on from the appraisal process and bases its recommendations on the evidence that has been gathered in the trainee's learning portfolio during the period between ARCP reviews. The ARCP records that the required curriculum competences and experience are being acquired, and that this is at an appropriate rate. It also provides a coherent record of a trainee's progress. The ARCP is not in itself an assessment exercise of clinical or professional competence.

The ARCP should normally be undertaken on at least an annual basis for all trainees in surgical training. Some Deaneries/Local Education and Training Boards (LETBs) plan to arrange two ARCPs each year in the early years of training. An ARCP panel may be convened more frequently if there is a need to deal with progression issues outside the normal schedule.

The surgical Specialty Advisory Committees (SACs) use the opportunity afforded, through their regional Liaison Member on the panel, to monitor the quality of training being delivered by the programme and/or its components.

Further information on this process can be found in the [Reference Guide to Postgraduate Specialty Training in the UK](#).

Preparation for the ARCP

The trainee's learning portfolio provides the evidence of progress. It is the trainee's responsibility to ensure that the documentary evidence is complete in good time for the ARCP.

The SAC representatives on ARCP Panels will monitor trainees' progress throughout their training to assess whether they are on course to obtain certification or a Certificate of Eligibility for Specialist Registration via a Combine Programme; CESR(CP). Particular attention will be paid in the final two years of training to ensure that any remedial action can be taken, if necessary, to enable individual trainees to successfully complete their training.

The ARCP Panel

Please note that during the time of the panel meeting, members of an ARCP panel will have access to the portfolios of the trainees they review. Panel members are appointed by the Deanery/LETB and are likely to include the following:

- Postgraduate Dean / Associate Director / Associate Dean
- Training Programme Director
- Chair of the Specialty Training Committee
- College/Faculty representatives (e.g. liaison member from the surgical specialty SAC)
- Assigned Educational Supervisors (who have not been directly responsible for the trainee's placements)
- Associate Directors/Deans
- Academic representatives (for academic programmes, who have not been directly responsible for the trainee's placements)
- A representative from an employing authority
- Lay/patient representative
- External trainer
- Representative from an employing organisation

ARCP Outcomes

The ARCP panel will make one of the following recommendations about each trainee based on the evidence put before them:

Satisfactory progress

1. Achieving progress and competences at the expected rate

Unsatisfactory progress

2. Development of specific competences required – additional training time not required
3. Inadequate progress by the trainee – additional training time required
4. Released from training programme with or without specified competences

Insufficient evidence

5. Incomplete evidence presented – additional training time may be required

Recommendation for completion of the training programme (core or higher)

6. Gained all required competences for the programme

(Similar outcomes are made for those in Locum Appointment for Training (LAT) / Fixed-term Specialty Training Appointment (FTSTA) / Out of programme (OOP) and Top-up training).

The training system

Roles and responsibilities

Schools of Surgery/LETBs/Deaneries

Schools of Surgery or their equivalent have been created nationally within each Postgraduate Medical Deanery and/or Local Education and Training Board (LETB) and the Scottish Surgical Specialties Training Board (SSSTB) within NHS Education for Scotland (NES). They provide the structure for educational, corporate and financial governance and co-ordinate the educational, organisational and quality management activities of surgical training programmes. The Schools draw together the representatives and resources of Deaneries/LETBs/SSSTB, JCST, trusts, NHS service providers and other relevant stakeholders in postgraduate medical education and training. They ensure the implementation of curricula and assessment methodologies with associated training requirements for educational supervision. In the Republic of Ireland, these roles are undertaken by the Medical Council, HSE National Doctors Training and Planning (NDTP) and the Royal College of Surgeons in Ireland (RCSI).

Who is Involved in training?

The key roles involved in teaching and learning are Training [Programme director](#) (TPD), [Assigned Educational Supervisor](#) (AES), [Clinical Supervisor](#) (CS), [Assessor](#) and [Trainee](#).

Training Programme Director

The majority of Training Programme Directors (TPDs) manage specialty programmes; there are, however, a number TPDs who manage Core Surgical Training programmes TPD (CST).

TPDs are responsible for:

- Organising, managing and directing the training programmes, ensuring that the programmes meet curriculum requirements;
- Identifying and supporting local faculty (i.e. AES, CS) including organising their induction and training where necessary;
- Overseeing progress of individual trainees through the levels of the curriculum; ensuring that appropriate levels of supervision, training and support are in place;
- Helping the Postgraduate Dean and AES manage trainees who are running into difficulties by identifying remedial placements and resources where required;
- Working with delegated Specialty Advisory Committee (SAC) representatives (SAC Liaison Members) and College representatives (e.g. college tutors) to ensure that programmes deliver the specialty curriculum;
- Ensuring that Deanery/LETB administrative support are knowledgeable about curriculum delivery and are able to work with SACs, trainees and trainers;
- Administering and chairing the Annual Review of Competence Progression meetings (ARCP).

Assigned Educational Supervisor

Educational supervision is a fundamental conduit for delivering teaching and training in the NHS. It takes advantage of the experience, knowledge and skills of expert clinicians / consultant trainers and their familiarity with clinical situations. It ensures interaction between an experienced clinician and a trainee. This is the desired link between the past and the future of surgical practice, to guide and steer the learning process of the trainee. Clinical supervision is also vital to ensure patient safety and the high quality service of trainees. The curriculum requires trainees reaching the end of their training to demonstrate competence in clinical supervision before Certification. The Joint Committee on Surgical Training (JCST) also acknowledges that the process of gaining competence in supervision must start at an early stage in training with trainees supervising more junior trainees. The example set by the educational supervisor is the most powerful influence upon the standards of conduct and practice of a trainee.

In the UK, the GMC's plan for [recognition and approval of trainers](#) will take full effect from 31 July 2016. In addition to the GMC's statutory requirements for approval of GP trainers, postgraduate deans and medical schools will formally recognise medical trainers who are named Assigned Educational Supervisors and named Clinical Supervisors.

The Assigned Educational Supervisor (AES) is responsible for between 1 and 4 trainees at any time. The number will depend on factors such as the size of the unit and the availability of support such as a Clinical Supervisors (CSs) or Clinical Tutors (CTs). The role of the Assigned Educational Supervisor is to:

- Have overall educational and supervisory responsibility for the trainee in a given placement;
- Ensure that an induction to the unit (where appropriate) has been carried out;
- Ensure that the trainee is familiar with the curriculum and assessment system relevant to the level/stage of training and undertakes it according to requirements;
- Ensure that the trainee has appropriate day-to-day supervision appropriate to their stage of training;
- Act as a mentor to the trainee and help with both professional and personal development;
- Agree a Learning Agreement, setting, agreeing, recording and monitoring the content and educational objectives of the placement;
- Discuss the trainee's progress with each trainer with whom a trainee spends a period of training and involve them in the formal report to the annual review process;
- Undertake regular formative/supportive appraisals with the trainee (typically one at the beginning, middle and end of a placement) and ensure that both parties agree to the outcome of these sessions and keep a written record;
- Ensure a record is kept in the portfolio of any serious incidents for concerns and how they have been resolved;
- Regularly inspect the trainee's learning portfolio and ensure that the trainee is making the necessary clinical and educational progress;
- Inform trainees of their progress and encourage trainees to discuss any deficiencies in the training programme, ensuring that records of such discussions are kept;
- Ensure patient safety in relation to trainee performance by the early recognition and management of those doctors in distress or difficulty;
- Keep the Training Programme Director informed of any significant problems that may affect the trainee's training;
- Provide an end of placement AES report for the Annual Review of Competence Progression (ARCP).

In order to become an AES, a trainer must be familiar with the curriculum and have a demonstrated an interest and ability in teaching, training, assessing and appraising. They must have appropriate access to teaching resources and time for training allocated to their job plan (approx. 0.25 PA per trainee). AESs must have undertaken training in a relevant Training the Trainers course/programme offered by an appropriate educational institution and must keep up-to-date with developments in training. They must have access to the support and advice of their senior colleagues regarding any issues related to teaching and training and to keep up-to-date with their own professional development.

Clinical Supervisor

Clinical supervisors (CS) are responsible for delivering teaching and training under the delegated authority of the AES. They:

- Carry out assessments as requested by the AES or the trainee. This will include delivering feedback to the trainee and validating assessments;
- Ensure patient safety in relation to trainee performance;
- Liaise closely with other colleagues, including the AES, regarding the progress and performance of the trainee with whom they are working during the placement;
- Keep the AES informed of any significant problems that may affect the trainee's training;
- Provide regular CS Reports which contribute to the AES's end of placement report for the ARCP.

The training of CSs should be similar to that of the AES.

Assessor

Assessors will carry out a range of assessments and provide feedback to the trainee and the AES, which will support judgements made about a trainee's overall performance. Assessments during training will usually be carried out by clinical supervisors (consultants) and other members of the surgical team, including (for the MSF). Those who are not medically qualified may also be tasked with this role.

Those carrying out assessments must be appropriately qualified in the relevant professional discipline and trained in the methodology of workplace based assessment (WBA). This does not apply to MSF raters.

Trainee

The trainee is required to take responsibility for his/her learning and to be proactive in initiating appointments to plan, undertake and receive feedback on learning opportunities. The trainee is responsible for ensuring that

- a Learning Agreement is carried out in each placement;
- opportunities to discuss progress are identified;
- assessments are undertaken and validated by assessors in good time;
- evidence is systematically recorded in the learning portfolio.

Teaching

The detail of clinical placements will be determined locally by Training Programme Directors (TPD). In order to provide sufficient teaching and learning opportunities, the placements need to be in units that:

- Are able to provide sufficient clinical resource;
- Have sufficient trainer capacity.

The JCST has developed a series of [Quality Indicators \(QIs\)](#) to help identify good and poor quality training placements. The QIs are measured through the JCST trainee survey.

The PDs and AESs define the parameters of practice and monitor the delivery of training to ensure that the trainee has exposure to:

- A sufficient range and number of cases in which to develop the necessary technical skills (according to the stage of training) and professional judgement (to know when to carry out the procedure and when to seek assistance);
- Managing the care of patients in the case of common conditions that are straightforward, patients who display well known variations to common conditions, and patients with ill-defined problems;
- Detailed feedback.

Development of professional practice can be supported by a wide variety of teaching and learning processes, including role modelling, coaching, mentoring, reflection, and the maximising of both formal and informal opportunities for the development of expertise on the job. Learning opportunities need to be related to changing patterns of healthcare delivery.

The training system

Training roles

Training roles will exist, with minor, locally agreed variation, in all Deaneries/LETBs/Schools and are a requirement of the ISCP.

In accordance with GMC and curriculum standards:

- There must be an adequate number of appropriately qualified and experienced staff in place to deliver an effective training programme.
- Trainers must have the time within their job plan to support the role.
- Subject areas of the curriculum must be taught by staff with relevant specialist expertise and knowledge.
- Individuals undertaking educational roles must undergo a formal programme of training and be subject to regular review.
- Training programmes should include practise exercises covering an understanding of the curriculum, workplace-based assessment methodology and how to give constructive feedback. They should also include equality and diversity training.

The main surgical training roles fall into one of two broad categories:

- Those to do with managing individual trainees (i.e. Clinical Supervisor, Assigned Educational Supervisor, Training Programme Director)
- Those to do with managing the system. Included within these roles would be important aspects such as the provision of common learning resources and quality control of the training being provided. Training Programme Directors would fall into this category.

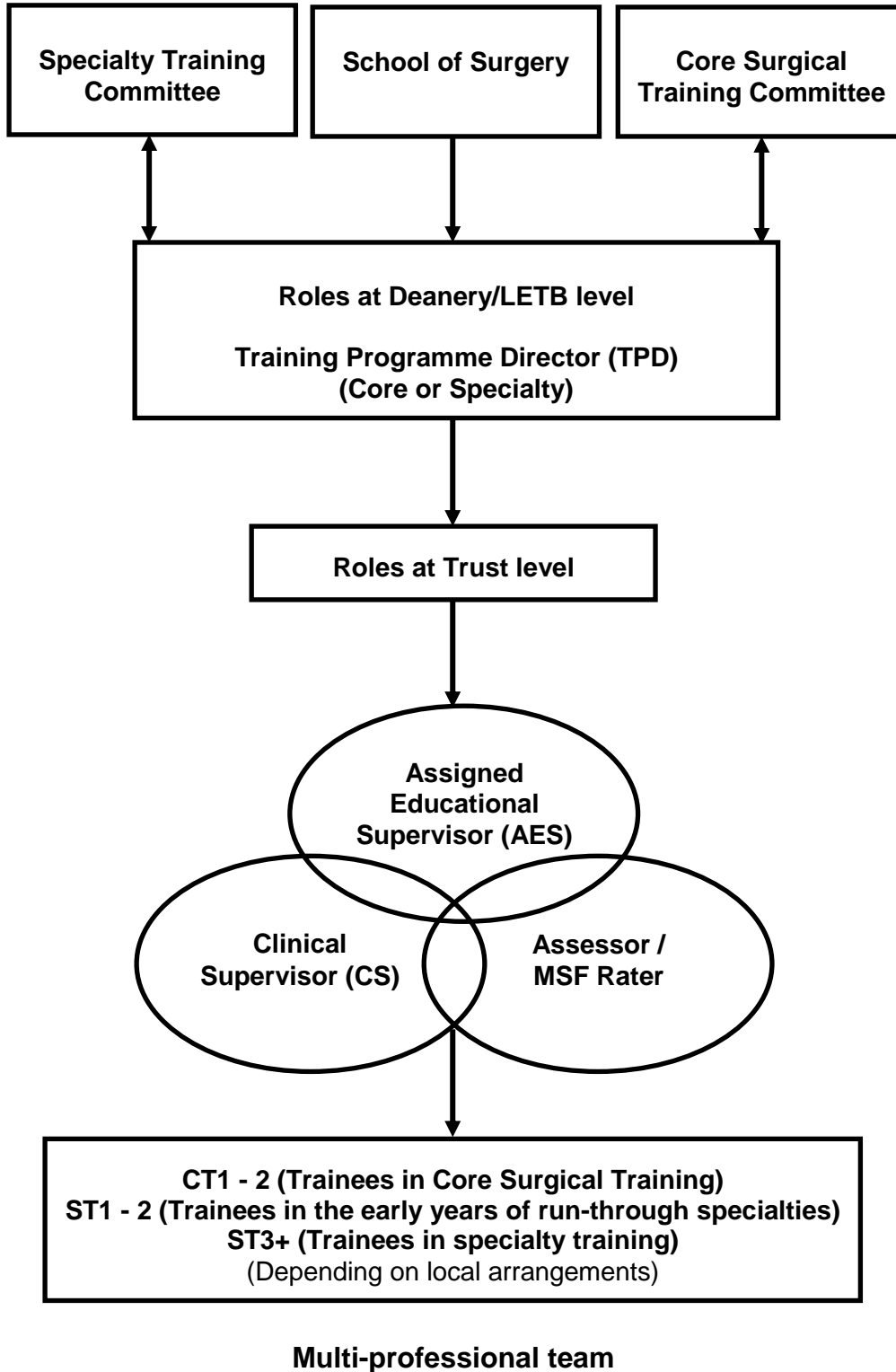
It may be entirely appropriate for a surgeon involved in training to hold more than one role (e.g. Assigned Educational Supervisor, Clinical Supervisor and Assessor) where the workload is manageable and the trainee continues to receive training input from several sources. The role of assessor is not intended to be used as a formal title, but describes a function that will be intrinsic to many of the roles described in the ISCP.

The ISCP requires adherence to a common nomenclature for the trainers who are working directly with the trainee and these are highlighted on the website. These roles are Training Programme Director (core surgical training or specialty training), Assigned Educational Supervisor, Clinical Supervisor, Trainee and Assessor. This is to support the interactive parts of the website, access levels etc. and it is strongly recommended that Deaneries/LETBs use the titles outlined here in the interests of uniformity.

There is great variation in the number of trainees being managed at the various levels within Deaneries/LETBs/Schools of Surgery. This is particularly the case during the early years of training. For this reason, many Deaneries/LETBs will find that the Training Programme Director roles may have to be subdivided. It is recommended that the suffix or prefix 'deputy' is used in conjunction with the main title rather than devising a completely new title. This will make clear the general area in which the surgeon is working and should help to avoid confusion.

Wherever possible these roles are harmonised with the [Gold Guide](#) but there may be minor variations in nomenclature and tasks that reflect the intercollegiate approach to surgical specialty training.

Training Governance Structure



The Training System

Quality assurance of the training system

The General Medical Council (GMC) has overall responsibility for the quality assurance of medical education and training in the UK, as outlined in its [Quality Improvement Framework](#) (QIF) but it delegates some responsibility in this respect to the Postgraduate Medical Deaneries and/or Local Education and Training Boards (LETBs) and their Schools of Surgery, the Joint Committee on Surgical Training (JCST) and Local Education Providers (LEPs). In the Republic of Ireland, these roles are undertaken by the [Medical Council](#) (MC) and by the Royal College of Surgeons in Ireland (RCSI).

Deaneries and LETBs are responsible for the quality management of training programmes and posts and must implement processes to ensure training within their region meets national standards and is implemented in accordance with the GMC-approved curricula. LEPs deliver training and are responsible for its quality control. In the Republic of Ireland, this is overseen by the MC and the RCSI.

As part of its role in the quality management of surgical training, the JCST has developed its own quality assurance strategy based upon its quality indicators, trainee surveys, Certification Guidelines and the annual specialty report. For more information on the quality assurance of surgical training, please visit the [Quality assurance](#) page on the [JCST website](#).

Quality Indicators

- The JCST, in conjunction with the Schools of Surgery, has developed a series of quality indicators (QIs) in order to assess the quality of surgical training placements in each of the surgical specialties and at core level.
- The QIs, which are measured through the JCST trainee survey, enable good and poor quality training placements to be identified so appropriate action may be taken.

The QIs for each surgical specialty and core surgical training are available to download from the [JCST Quality Indicators](#) page of the JCST website.

JCST trainee survey

- The JCST launched the trainee survey in November 2011, which was developed in conjunction with the Schools of Surgery.
- The survey is run through the ISCP website and trainees are notified through their ISCP account of when they should complete it. This should be towards the end of each placement and prior to their ARCP.
- Confirmation of completion of all relevant surveys will be part of the evidence assessed at the trainees' ARCP.

For more information on the trainee survey, please visit the [JCST Trainee Survey](#) page of the JCST website.

Certification Guidelines

- Each SAC has produced a series of guidelines to identify what trainees applying for Certification will normally be expected to have achieved during their training programme. The guidelines cover such aspects of training as: clinical and operative experience; operative competency; research; quality improvement; and management and leadership.
- Trainees and trainers should use the guidelines to inform decisions about the experiences that trainees need to gain during their 5/6 year programme.
- Trainees will be monitored against the guidelines throughout their training programmes to ensure they are receiving appropriate exposure to all aspects of training.

For more information and to download a copy of the guidelines for each specialty, please visit the [Certification Guidelines](#) page of the JCST website.

Annual Specialty Report

The JCST submits an Annual Specialty Report (ASR) to the GMC to provide both a national overview of the status of surgical training and an update on any major developments.

For more information on the ASR, please visit the GMC [Quality Improvement Framework](#) (QIF) page.

Teaching and Learning

Principles of surgical education

The balance between didactic teaching and learning in clinical practice will change as the trainee progresses through the training programme, with the former decreasing and the latter increasing.

A number of people from a range of professional groups will be involved in teaching. In accordance with GMC standards, subject areas of the curriculum must be taught by staff with relevant specialist expertise and knowledge. Specialist skills and knowledge are usually taught by consultants and more advanced trainees; whereas the more generic aspects of practice can also be taught by the wider multi-disciplinary team. The Assigned Educational Supervisor (AES) is key as he/she agrees with each trainee how he/she can best achieve his or her learning objectives within a placement.

Establishing a learning partnership creates the professional relationship between the teacher (AES, CS or assessor) and the learner (trainee) that is essential to the success of the teaching and learning programme.

The learning partnership is enhanced when:

- The teacher understands:
 - Educational principles, values and practices and has been appropriately trained;
 - The role of professional behaviour, judgement, leadership and team-working in the trainee's learning process;
 - The specialty component of the curriculum;
 - Assessment theory and methods.
- The learner:
 - Understands how to learn in the clinical practice setting, recognising that everything they see and do is educational;
 - Recognises that although observation has a key role to play in learning, action (doing) is essential;
 - Is able to translate theoretical knowledge into surgical practice and link surgical practice with the relevant theoretical context.
 - Uses reflection to improve and develop practice (see self-directed learning);
- There is on-going dialogue in the clinical setting between teacher and the learner;
- There are adequate resources to provide essential equipment and facilities;
- There is adequate time for teaching and learning.

Trainee-led learning

The ISCP encourages a learning partnership between the trainee and AES in which learning is trainee-led and trainer-guided. Trainees are expected to take a proactive approach to learning and development and towards working as a member of a multi-professional team. Trainees are responsible for:

- Utilising opportunities for learning throughout their training;
- Triggering assessments and appraisal meetings with their trainers, identifying areas for observation and feedback throughout placements;
- Maintaining an up to date learning portfolio;
- Undertaking self and peer assessment;
- Undertaking regular reflective practice.

Learning opportunities

There are many learning opportunities available to trainees to enable them to develop their knowledge, clinical and professional judgement, technical and operative ability and conduct as a member of the profession of surgery. The opportunities broadly divide into three areas:

- [Learning from practice](#) otherwise known as learning on-the-job or in the workplace. This can be informal and opportunistic or planned and structured

- [Learning from formal situations](#)
- [Self-directed learning](#)

Learning from practice

The workplace provides learning opportunities on a daily basis for surgical trainees, based on what they see and what they do. Whilst in the workplace, trainees will be involved in supervised clinical practice, primarily in a hospital environment in wards, clinics or theatre. The trainees' role in these contexts will determine the nature of the learning experience.

Learning will start with observation of a trainer (not necessarily a doctor) and will progress to assisting a trainer; the trainer assisting/supervising the trainee and then the trainee managing a case independently but with access to expert help. The level of supervision will decrease and the level of complexity of cases will increase as trainees become proficient in the appropriate technical skills and are able to demonstrate satisfactory professional judgement. Continuous systematic feedback, both formal and informal, and reflection on practice are integral to learning from practice, and will be assisted by assessments for learning (formative assessment methods) such as surgical Direct Observation of Procedural Skills in Surgery (DOPS), Procedure Based Assessment (PBA), Clinical Evaluation Exercise (CEX) and Case Based Discussion (CBD), each of which has been developed for the purpose.

Trainees are required to keep a surgical logbook to support the assessment of operative skills, using corresponding supervision levels:

Assisting (A):

The trainer completes the procedure from start to finish
 The trainee performs the approach and closure of the wound
 The trainer performs the key components of the procedure

Supervised - trainer scrubbed (S-TS):

The trainee performs key components of the procedure (as defined in the relevant PBA) with the trainer scrubbed

Supervised - trainer unscrubbed (S-TU):

The trainee completes the procedure from start to finish
 The trainer is unscrubbed and is:
 - in the operating theatre throughout
 - in the operating theatre suite and regularly enters the operating theatre during the procedure (70% of the duration of the procedure)

Performed (P):

The trainee completes the procedure from start to finish
 The trainer is present for <70% of the duration of the procedure
 The trainer is not in the operating theatre and is:
 - scrubbed in the adjacent operating theatre
 - not in the operating suite but is in the hospital

Training more junior trainee (T):

A non-consultant grade surgeon training a junior trainee

Observed (O):

Procedure observed by an unscrubbed trainee

In the Workplace – Informal

Surgical learning is largely experiential in its nature with any interaction in the workplace having the potential to become a learning episode. The curriculum encourages trainees to manage their learning and to reflect on practice. Trainees are encouraged to take advantage of clinical cases, audit and the opportunities to shadow peers and consultants.

In the Workplace - Planned and Structured

Theatre (training) lists

Training lists on selected patients enable trainees to develop their surgical skills and experience under supervision. The lists can be carried out in a range of settings, including day case theatres, main theatres endoscopy suites and minor injuries units.

Each surgical procedure can be considered an integrated learning experience and the formative workplace assessments provide feedback to the trainee on all aspects of their performance, from pre-operative planning and preparation, to the procedure itself and subsequent post-operative management.

The syllabus is designed to ensure that teaching is systematic and based on progression. The level of supervision will decrease and the level of complexity of cases will increase as trainees become proficient in the appropriate technical skills and are able to demonstrate satisfactory professional judgement. By Certification time trainees will have acquired the skills and judgement necessary to provide holistic care for patients normally presenting to their specialty and referral to other specialists as appropriate. Feedback on progress is facilitated by the DOPS and PBA.

Clinics (Out Patients)

Trainees build on clinical examination skills developed during the Foundation Programme. There is a progression from observing expert clinical practice in clinics to assessing patients themselves, under direct observation initially and then independently, and presenting their findings to the trainer. Trainees will assess new patients and will review/follow up existing patients.

Feedback on performance will be obtained primarily from the CEX and CBD workplace assessments together with informal feedback from trainers and reflective practice.

Ward Rounds (In Patient)

As in the other areas, trainees will have the opportunity to take responsibility for the care of in-patients appropriate to their level of training and need for supervision. The objective is to develop surgeons as effective communicators both with patients and with other members of the team. This will involve taking consent, adhering to protocols, pre-operative planning and preparation and post-operative management.

Progress will be assessed by MSF, CBD, CEX, DOPS and PBA.

Learning from formal situations

Work based practice is supplemented by an educational programme of courses, local postgraduate teaching sessions arranged by the Specialty Training Committees (STCs) or Schools of Surgery and regional, national and international meetings. Courses have a role at all levels, for example basic surgical skills courses using skills centres and specialty skills programmes. These focus on developing specific skills using models, tissue in skills labs and deceased donors as appropriate and are delivered by the colleges, specialty associations and locally by Deaneries/LETBs.

It is recognised that there is a clear and increasingly prominent role for off the job learning through specific intensive courses to meet specific learning goals. Trainees must show evidence that they have gained competence in the management of trauma through a valid certificate of the Advanced Trauma Life Support (ATLS®), Advanced Paediatric Life Support (APLS) or equivalent, at the completion of core training. In the following specialties, trainees need to show that this certificate of competence is being maintained up to Certification.

- Neurosurgery
- Oral and Maxillofacial Surgery
- Paediatric Surgery (APLS)
- Plastic Surgery
- Trauma and Orthopaedic Surgery

Learning from simulation

Simulation in this context means any reproduction or approximation of a real event, process, or set of conditions or problems e.g. taking a history in clinic, performing a procedure or managing post-operative care. Trainees have the opportunity of learning in the same way as they would in the real situation but in a patient-safe environment. Simulation can be used for the development of both individuals and teams.

Simulation training is often classified as either high or low fidelity. The fidelity of simulation refers to how accurately or closely the simulation resembles the situation being reproduced. The realism of the simulation may reflect the environment in which simulation takes place, the instruments used or the emotional and behavioural features of the real situation. Simulation training does not necessarily depend on the use of expensive equipment or complex environments e.g. it may only require a suturing aid or a role play.

Simulation training has several purposes:

- supporting learning and keeping up to date;
- addressing specific learning needs;
- situational awareness of human factors which can influence people and their behaviour;
- enabling the refining or exploration of practice in a patient-safe environment;
- promoting the development of excellence;
- improving patient care.

The use of simulation in surgical training should be regarded as part of a blended approach to managing teaching and learning concurrent with supervised clinical practice. The use of simulation on its own cannot replace supervised clinical practice and experience or authorise a doctor to practice unsupervised.

Provision of feedback and performance debriefing are integral and essential parts of simulation-based training. Feedback can be assisted by workplace-based assessments and recorded in the learning portfolio. Simulation training should broadly follow the same pattern of learning opportunities offering insight into the development of technical skills, team-working, leadership, judgement and professionalism.

Self-directed learning

Self-directed learning is encouraged. Trainees are encouraged to establish study groups, journal clubs and conduct peer review; there will be opportunities for trainees to learn with peers at a local level through postgraduate teaching and discussion sessions; and nationally with examination preparation courses. Trainees are expected to undertake personal study in addition to formal and informal teaching. This will include using study materials and publications and reflective practice. Trainees are expected to use the developmental feedback they get from their trainers in appraisal meetings and from assessments to focus further research and practice.

Reflective practice is a very important part of self-directed learning and is a vital component of continuing professional development. It is an educational exercise that enables trainees to explore with rigour, the complexities and underpinning elements of their actions in surgical practice in order to refine and improve them.

Reflection in the oral form is very much an activity that surgeons engage in already and find it useful and developmental. Writing reflectively adds more to the oral process by deepening the understanding of surgeons about their practice. Written reflection offers different benefits to oral reflection which include: a record for later review, a reference point to demonstrate development and a starting point for shared discussion.

Some of this time will be taken as study leave. In addition there are the web based learning resources which are on the ISCP website and speciality association websites.

Supervision

In accordance with the requirements of [Good Medical Practice](#), the ultimate responsibility for the quality of patient care and the quality of training lies with the supervisor. Supervision is designed to ensure the safety of the patient by encouraging safe and effective practice and professional conduct. The level of supervision will change in line with the trainee's progression through the stages of the curriculum, enabling trainees to develop independent learning. Those involved in the supervision of trainees must undertake appropriate training.

Trainees must be placed in approved posts that meet the required training and educational standards. Individual trusts must take responsibility for ensuring that clinical governance and health and safety standards are met.

Clinical Supervisors and other trainers must have the relevant qualifications, experience and training to undertake the role. There is an expectation that supervision and feedback are part of the on-going relationship between trainees and their trainers and assessors, and that it will take place informally on a daily basis.

The syllabus content details the level of knowledge, clinical, technical/operative and professional skills expected of a trainee at any given stage of training. The surgical logbook provides a record of the trainee's operative experience and supervision levels corresponding to the operative levels of: *Observed (O)*; *Assisting (A)*; *Supervised - trainer scrubbed (S-TS)*; *Supervised - trainer unscrubbed (S-TU)*; *Performed (P)* and *Training a more junior trainee (T)*.

Trainees must work at a level commensurate with their experience and competence, and this should be explicitly set down by the Assigned Educational Supervisor in the Learning Agreement. There is a gradual reduction in the level of supervision required until the level of competence for independent practice is acquired.

In keeping with Good Medical Practice and [Good Clinical Care](#), trainees have a responsibility to recognise and work within the limits of their professional competence and to consult with colleagues as appropriate. The development of good judgement in clinical practice is a key requirement of the curriculum. The content of the curriculum dealing with professional behaviour emphasises the responsibilities of the trainee to place the well-being and safety of patients above all other considerations. Throughout the curriculum, great emphasis is laid on the development of good judgement and this includes the ability to judge when to seek assistance and advice. Appropriate consultation with trainers and colleagues for advice and direct help is carefully monitored and assessed.

The Learning Agreement

The Learning Agreement is a written statement of the mutually agreed learning goals and strategies negotiated between a trainee (learner) and the trainee's Assigned Educational Supervisor (AES). It is agreed at the initial objective setting meeting and covers the period of the placement. The agreement is based on the learning needs of the individual trainee undertaking the learning as well as the formal requirements of the curriculum. The web-based Learning Agreement form is accessed through the secure area of the website and is completed on-line. The AES and trainee complete the Learning Agreement together and are guided by the Training Programme Director's (TPD's) Global Objective. A blank Learning Agreement Form (for illustrative purposes only) is available in the [Help](#) area of the website.

Training Programme Director's (TPD's) Global Objective

The TPD's global objective is a statement which the TPD can set for the trainee's training year, informing placement objectives. The broad global objectives, derived from the syllabuses, are included in the Learning Agreement and highlight what the trainee should achieve during a period that may encompass several placements. They normally cover the period between the annual reviews.

The global objective for early years training would normally cover the following components:

- Run-through programmes: the common surgical syllabus, specialty-specific competences in the chosen specialty and professional behaviour and leadership skills for the stage.
- Themed programmes: the common surgical syllabus, specialty-specific competences in a number of complementary specialties and professional behaviour and leadership skills for the stage.
- Un-themed, broad-based programmes: the common surgical syllabus, sampling of specialty-specific competences in a number of specialties (topping up in specific specialties later in the stage) and professional behaviour and leadership skills for the stage.

For those wishing to pursue an academic surgical career, a proportion of competences might emphasise additional academic pursuits including research and teaching.

Together, the global and placement objectives are the means used by the TPD, AES and trainee to ensure curriculum coverage.

The content of the Learning Agreement will be influenced by the:

- Requirements set by the surgical specialty in its syllabus for the stage of training;
- Learner's previous experience;
- Learner's knowledge and skills;
- Learner's personal aspirations set down in a Personal Development Plan;
- Local circumstances of the placement.

Although the Learning Agreement is a statement of expected outcomes there is equal emphasis on learning opportunities and how the outcomes can be met. Trainees use it to keep track of which objectives have been completed and which have not; AESs use it to set down the educational strategies that are suited to the experiential learning appropriate to the placement, to monitor progress and make a summative report to the annual review. TPDs use it to oversee the process and to ensure that the correct training is delivered appropriate to the achievement of learning outcomes.

Each stage in the process allows the trainee and the AES to make individual comments on the training and appraisal process and to sign it off. The trainee also has the right of appeal to the TPD through the process. The trainee will meet the AES at the start of each placement to agree the learning and development plan and at mid-point and end of placement to review and report on progress. The frequency of meetings can be increased if required. The Learning Agreement provides a mechanism for the trainee and AES to meet and discuss feedback and guidance.

Stages in the Learning Agreement

There are three stages to the Learning Agreement that should be completed in sequence: [Objective Setting](#); [Interim Review](#); and [Final Review](#).

In the Objective Setting stage, the trainee and the AES:

- Agree the learning objectives for the placement according to the trainee's needs and the learning that can be delivered in the placement and with reference to the TPD's global objective;
- Identify learning opportunities in the workplace such as in theatre, ward, clinic and simulated settings;
- Agree on the workplace-based assessments that can be undertaken to obtain formative feedback and demonstrate progress matched to areas of the syllabus e.g. DOPS for central venous line insertion;
- Identify the resources required so that the trainee can achieve his/her learning objectives, for example, time in clinic and theatre, equipment, reflective practice, trainers;
- Identify formal learning opportunities, activities or events in the educational programme, that the trainee should attend e.g. seminars, presentations, peer reviews.
- Consider the examinations the trainee is required to take whilst in the placement and courses the trainee plans to attend.
- Consider opportunities for audit and quality improvement activities, research and other projects.

Once these aspects have been agreed, the trainee and the AES sign off the Learning Agreement.

Although the objective setting stage of the Learning Agreement is the agreed plan for the placement, it can be modified during training if circumstances change and this can be recorded during the interim or final review.

Interim Review occurs at the mid-point of the placement. This stage is encouraged even for 4-month placements to check that progress is in line with the placement objectives. In the event that difficulties are being experienced, focussed training and repeat assessments should be initiated. The objectives for progress and further action plans agreed at the meeting are recorded on the Interim Review form and are signed off by the trainee and AES.

Final Review occurs towards the end of the placement. The trainee and AES review what the trainee has learned in the placement against the placement objectives set down in the Learning Agreement. Evidence would typically include the following:

- Workplace-based assessments and feedback (these should occur frequently with a range of assessors)
- Surgical logbook
- Audit and quality improvement
- Courses and seminars
- Examinations
- Meetings and conferences
- Patient feedback
- Presentations and posters
- Projects
- Publications
- Reflective practice (includes self MSF, reflective CBD, reflections in the journal and workplace-based assessment)
- Research
- Teaching

Each tool captures elements of judgment in action and maps to standards of [Good Medical Practice](#). Over the training period they reveal the trainee's particular strengths, areas for development and progress.

Assigned Educational Supervisor's Report: The AES is responsible for synthesising the portfolio evidence at the end of the placement. The process of judging the evidence also involves the Trainee's Clinical Supervisors. The AES's evidence-based report is written in terms of the trainee's progress and specific learning outcomes and is facilitated by the learning portfolio. The report will be a key document for the Annual Review of Competence Progression (ARCP).

The TPD takes a holistic view of progress over the whole training period.

The Learning Portfolio

The trainee's portfolio has been designed to store evidence of the trainee's competence and fitness to practise. It serves as a repository of evidence that a trainee is progressing and meeting all the requirements of the curriculum. The portfolio is the vehicle used by the Annual Review of Competence Progression (ARCP) to recommend the trainee's continuing training or Certification.

The portfolio is organised into discrete sections, each designed to help trainees along the training pathway. The main sections of the portfolio include the Learning Agreement from each placement, reports from the trainee's Assigned Educational Supervisor (AES) and Clinical Supervisors (CSs); workplace-based assessment (WBA), a summary of the surgical logbook, other evidence of workplace activity and the ARCP.

The trainee is solely responsible for the contents of the portfolio both in terms of quality and veracity. Submission of information known to be false, if discovered, will have very serious consequences. All entries to the portfolio must respect the confidentiality of colleagues and patients and should not contain names or numbers to identify patients or staff. Portfolio evidence must be collected and documented systematically by the trainee as they progress through each placement.

Trainees must record all assessments that are conducted during the training period. WBA is considered to be formative and those that are of a less than satisfactory standard, if reflected upon appropriately, need not necessarily be seen as negative because they provide developmental feedback to drive learning and so improve practice. Where assessments have been unsatisfactory they should be repeated after focussed training until successful. The portfolio should enable the AES at the end of placement to assess the trainee in the round.

As part of their professional obligations, trainees are also required to sign an educational contract which defines, in terms of education and training, their relationships, duties and obligations. It also makes explicit the basic framework the trainee can expect from each placement and what is expected by the AES in return. Statements of health and probity statement are also obligatory because doctors must have integrity and honesty and must take care of their own health and well-being so as not to put patients at risk.