

The Intercollegiate Surgical Curriculum

Educating the surgeons of the future

Plastic Surgery

From October 2013
Including Simulation
(Updated 2015, 2016 and 2018)



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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. It was updated again in 2016 to include the Oncoplastic Breast Surgery and Head and Neck TIGs.

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.mcol.ie) (MCol).

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](#) website [here](#). 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)
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) FRCS(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) FRCS(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	<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>Grainger & Allison's Diagnostic Radiology, 5th Edition. Andy Adam (Editor), Adrian Dixon (Editor), Ronald Grainger (Editor), David Allison (Editor)</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>
Common surgical conditions	<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>
Surgical skills	Basic surgical skills course and curriculum
Peri-operative care including critical care	<p>ATLS® course</p> <p>CCrISP course</p> <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>
Surgical care of children	<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> <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>

	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)
Organ transplantation	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)

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.nimda.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 (MCol). 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 MCol 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



Overview and objectives of the Plastic Surgery Curriculum

- The specialty of plastic and reconstructive surgery is that branch of surgery concerned with the restoration of normal form and function. It is a varied specialty involving adults and children and encompassing a wide range of conditions affecting different parts of the body.
- Nowadays most consultants in the UK have a particular area of special interest within plastic surgery although nearly all also take part in an on-call rota dealing with emergency admissions.
- One of the most interesting and fulfilling aspects of the specialty is the frequency with which plastic surgeons work with surgeons from other specialties such as general surgery, trauma and orthopaedic surgery, otolaryngology, and oral and maxillofacial surgery. In these cases the reconstructive techniques that plastic surgeons have at their disposal are particularly useful.
- The specialty is also closely associated with aesthetic surgery where body parts are surgically altered to bring about an improvement in appearance.

Areas of special interest associated with the specialty of plastic surgery include the following:

- Academic Plastic Surgery
- Aesthetic Surgery
- Burns
- Cleft Lip and Palate Surgery
- Complex wound
- Craniofacial surgery
- Ear reconstruction
- Genitourinary reconstruction
- Head and Neck Surgical Oncology
- Hand and Upper Limb Surgery
- Lower limb trauma
- Oncoplastic Breast Surgery
- Pelvic reconstruction
- Skin and soft tissue tumour surgery (incl. sarcoma)
- Vascular anomalies

Implicit in the wide-ranging nature of the specialty is the requirement that a consultant in plastic surgery demonstrates a high level of skill, experience and judgement in carrying out all the roles that his/her job entails. The curriculum and training programmes are designed to produce surgeons competent to take up such consultant appointments in the UK. To be considered fully trained, surgeons must achieve all the requirements of the curriculum through to successful completion.

Aidan Fitzgerald – Chair of the SAC for Plastic Surgery

Vivien Lees - SAC Curriculum Editor for Plastic Surgery

The Purposes of Training in the Specialty of Plastic Surgery

To produce plastic surgeons competent to work as consultant plastic surgeons in the UK.

This includes:

- Competence to manage patients presenting with a wide range of acute and emergency conditions including trauma and burns, diagnosing, assessing and treating or referring on as appropriate.
 - Competence in the management of patients presenting with a range of elective conditions as specified in the core syllabus for the specialty of plastic surgery.
 - Competence to manage an additional range of elective and emergency conditions by virtue of appropriate training and assessment opportunities obtained during training.
 - Professional competences as specified in the syllabus and derived from the Good Medical Practice framework of the General Medical Council of the UK.
-

The Training Pathway in the Specialty of Plastic Surgery

- To acquire the CCT in the specialty of plastic surgery trainees must complete all the requirements of the syllabus. This includes the key topics for each stage and clear demonstration that the specified levels of competence overall have been achieved at the time of final review.
 - The curriculum is designed to provide trainees in the specialty of plastic surgery with a structured training programme that will enable them to progress from the introductory stages of training through to the level required of a surgeon working independently as a consultant in the NHS.
 - The training programme, designed to last an indicative 8 years, includes training in areas of special interest. It is comprised three stages: initial (CT1 and 2); intermediate (ST3 - 6); and final (ST7 and 8).
 - Normally, CT1 and CT2 will comprise a two-year period of generic surgical training where the trainee rotates through several surgical specialties including plastic surgery with each rotation lasting 4-6 months.
 - At the end of this period, trainees will be selected into Plastic Surgery at ST3 through a national recruitment process. From ST3 onwards their training will be solely in the specialty of plastic surgery.
 - Having completed the syllabus, attained the required levels of competence and passed the Intercollegiate Examination, the candidate will be eligible to be awarded a CCT.
 - Increasingly, senior trainees are undertaking training in an area of special interest that crosses specialty boundaries: so-called interface training. These Training Interface Group fellowships, which take between 12 and 24 months to complete and are appointed through advertisement and selection, are taken towards the end of training (in ST7 and 8). Training in such an additional area of special interest will usually result in the deferment of the CCT until this is completed.
 - In addition certain special interest options are available for training within the monospecialty of plastic surgery in the following areas:
 - Aesthetic Surgery (with otorhinolaryngologists, oral and maxillofacial surgeons, breast surgeons, ophthalmic surgeons (4 month training modules)
 - Burns
 - Ear reconstruction
 - Genitourinary reconstruction
 - Head and neck (with exposure to training from otorhinolaryngologists and oral and maxillofacial surgeons)
 - Hand surgery (in combination with orthopaedic surgeons)
 - Cleft lip and palate (in combination with otorhinolaryngologists and oral and maxillofacial surgeons)
 - Craniofacial
 - Lower Limb
 - Oncoplastic Breast surgery (in combination with breast surgeons)
 - Skin Oncology
-

The Scope and Standards of Plastic Surgical Practice at CCT

A major proportion of the workload involves dealing with urgent or emergency cases including:

- Hand trauma.
- Burns and scalds
- Soft tissue injuries involving face, trunk or limbs.

Elective surgery includes the following major areas:

- Head and neck. This includes excisional and reconstructive surgery for congenital and acquired abnormalities, and for malignancy involving the face and mouth.
 - Cleft lip and palate and other craniofacial abnormalities.
 - Breast: including surgery for reconstruction, reduction and augmentation.
 - Hand and upper limb: including congenital and acquired conditions.
 - Skin and soft tissue tumours.
 - Congenital and acquired deformities of the trunk and urogenital system.
 - Aesthetic or cosmetic surgery.
-

The Configuration and Delivery of Plastic Surgical Services

- There are approximately 60 plastic surgery units around the country and these are for the most part situated in teaching hospitals.
 - At present each comprises on average 6-7 consultants together with a number of trainees and other grades in support.
 - Inpatient care, including management of urgent conditions, is carried out in the base hospital for each unit with consultants also providing outpatient clinics and at times day case operating at peripheral hospitals within their catchment area.
 - There are approximately 300 consultants in the UK, which translates into 1: 205,000 population.
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Future Trends in Plastic Surgery

- The specialty is planning to increase consultant numbers and this will be reflected by some increase in recognised training posts.
 - To achieve the recommendation made by the then Senate of Surgery of 1 consultant per 100,000 population for the UK and to allow a consultant delivered service, a doubling of consultant numbers to 600 will be required.
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Key Topics

Key Conditions

Wound Care

- Management of wounds including contaminated, infected wounds and those involving skin loss

Burns

- Assessment, resuscitation and initial management of burns
- Surgical management of burns
- Diagnosis and management of complications of burns including inhalational injury and septic shock

Head & Neck

- Approaches to reconstruction of defects of the ear, eyelid, nose, lip and oral cavity
- Approaches to management of facial palsy
- Management of patients requiring radical or selective neck dissection

Clefts

- Principles of management of baby with cleft lip and palate
- Investigation and management of velopharyngeal incompetence

Breast

- Management of patients requiring breast reconstruction, reduction and augmentation

Hand

- The diagnosis and management of all aspects of hand trauma
- The diagnosis and management of congenital deformities of the hand
- The diagnosis and management of acquired hand conditions

Lower Limb

- The multidisciplinary assessment and management of compound tibial fractures involving skin loss

Skin Tumours

- All aspects of diagnosis and management of malignant skin tumours including surgical reconstruction and management of regional lymph nodes

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- The principles of surgical management of hypospadias

Aesthetic

- The assessment and management of patients requiring aesthetic alterations of body parts including face, eyelids, nose and ears.

General

- Competence in the use of plastic surgery techniques including design and use of z-plasty, pedicled cutaneous and myocutaneous flaps, and free flaps

Core Overview

The purpose of the initial stage (early years) (CT1 - 3) is to allow the trainee to develop the basic and fundamental surgical skills common to all surgical specialties, together with a few surgical skills relevant to Plastic Surgery.

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 Plastic Surgery specialty component of the early years syllabus.
- Professional competences as specified in the syllabus and derived from Good Medical Practice documents of General Medical Council of the UK

By the end of CT2/3, trainees, (including those following an academic pathway), will have acquired to the defined level:

- Generic skills to allow team working and management of Plastic Surgery patients
- The ability to perform as a member of the team caring for surgical patients
- The ability to receive patients as emergencies and review patients in clinics and initiate management and diagnostic processes based on a reasonable differential diagnosis
- The ability to 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
- To be safe and useful assistant in the operating room
- To 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.

SPECIALTY SPECIFIC MODULES

In addition to the knowledge that is of general utility the trainee will attain the knowledge, skills and behaviour as defined in the following Plastic Surgery specific modules of the syllabus:

Module: Hand trauma

- Ability to assess, diagnose and formulate management plan for the majority of hand trauma cases.
- Demonstrate Level 2 competence in performing
 - flexor tendon repair
 - extensor tendon repair
 - K-wire fixation closed metacarpal and phalangeal fractures
 - digital nerve repair
 - Washout of hand infection
 - Revision amputation of digit

Module: Burns

- Demonstrate ability to assess and initiate the management of burns and scalds in children and adults.
- Demonstrate Level 2 competence in assessment of the airway and understanding of respiratory injury
- Demonstrate Level 2 competence in undertaking fluid resuscitation informed by standard protocols
- Demonstrate ability to undertake burns dressing change

Module: Wound management

- Demonstrate ability to assess and initiate treatment for the complex or contaminated wound
- Demonstrate familiarity with BAPRAS/BOA guidelines on management of lower limb trauma
- Ability to assess and advise on treatment of the open tibia with soft tissue loss, major nerve or vessel injury
- Demonstrate Level 3 competence in harvesting of split skin graft
- Demonstrate Level 3 competence in application of vacuum-assisted suction device

Module: Elective plastic surgery

- Have Level 2 competence in the use of general reconstructive techniques including skin grafting, z-plasty, flap elevation and related techniques.
- Demonstrate ability to diagnose and manage skin lesions, including skin malignancy (Level 2).
- Early competence in the use of the operating microscope.
- Demonstrate a broad appreciation of the range of conditions encountered in the elective practice of the specialty (Level1)

Those conditions that present on an urgent or emergency basis necessarily involve some out of hours working. It is expected that there will be appropriate allocation of duties such that the trainee has the opportunity to gain such experience. It is not regarded as sufficient that trainees be taught on day time trauma lists as this will mean loss of exposure to the more complex and challenging cases that are an important part of the trainee's experience.

CORE SURGICAL TRAINING MODULES

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 relevant to surgical practice Imaging: <ul style="list-style-type: none"> • Knowledge of the principles, strengths and weaknesses of various diagnostic and interventional imaging methods 	<p>Course completion certificate</p> <p>MRCS</p>	
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: 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 		<p>Strongly recommended: Life support Critical care</p> <p>Desirable Anatomy Team-Based Human Factors</p>

	<p>replacement therapy</p> <ul style="list-style-type: none"> • 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 • 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 		
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	<ul style="list-style-type: none"> 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 		
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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</p>	<p>Certificate of successful completion of course</p> <p>MRCS</p>	

	and to be able to provide the relevant clinical care as defined in modules assessment and management as defined in Modules 1 and 4.		
Topics	<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: Basic surgical skills Basic laparoscopic skills Fracture treatment</p> <p>Desirable Imaging interpretation</p> <p>Desirable (Cardiothoracic Surgery / Plastic Surgery):</p> <ul style="list-style-type: none"> • Anastomosis • Angiography • Vascular ultrasound • Surgical approaches to fractures
	<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 limb ischaemia • Aneurismal disease • Transient ischaemic attacks • Varicose veins • Leg ulceration 	<p>To include the following conditions</p> <ul style="list-style-type: none"> • Atherosclerotic arterial disease • Embolic and thrombotic arterial disease • Venous insufficiency • Diabetic ulceration 	
	<p>Cardiovascular and pulmonary disease</p>	<p>To include the following conditions</p> <ul style="list-style-type: none"> • Coronary heart disease • Bronchial carcinoma • Obstructive airways disease • Space occupying 	

		lesions of the chest	
	<p>Genitourinary disease Presenting symptoms or syndrome</p> <ul style="list-style-type: none"> • Loin pain • Haematuria • Lower urinary tract symptoms • Urinary retention • Renal failure • Scrotal swellings • Testicular pain 	<p>To include the following conditions</p> <ul style="list-style-type: none"> • Genitourinary malignancy • Urinary calculus disease • Urinary tract infection • Benign prostatic hyperplasia • Obstructive uropathy 	
	<p>Trauma and orthopaedics Presenting symptoms or syndrome</p> <ul style="list-style-type: none"> • Traumatic limb and joint pain and deformity • Chronic limb and joint pain and deformity • Back pain 	<p>To include the following conditions</p> <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 	
	<p>Disease of the Skin, Head and Neck Presenting symptoms or syndrome</p> <ul style="list-style-type: none"> • Lumps in the neck • Epistaxis • Upper airway obstructions 	<p>To include the following conditions</p> <ul style="list-style-type: none"> • Benign and malignant skin lesions • Benign and malignant lesions of the mouth and tongue 	
	<p>Neurology and Neurosurgery Presenting symptoms or syndrome</p> <ul style="list-style-type: none"> • Headache 	<p>To include the following conditions</p> <ul style="list-style-type: none"> • Space occupying lesions from bleeding and 	

	<ul style="list-style-type: none"> • Facial pain • Coma 	tumour		
	<p>Endocrine Presenting symptoms or syndrome</p> <ul style="list-style-type: none"> • Lumps in the neck • Acute endocrine crises 	<p>To include the following conditions</p> <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 		<p>Strongly recommended: Basic surgical skills Tissue handling/suturing</p> <p>Strongly recommended (Paediatric Surgery):</p> <ul style="list-style-type: none"> • Basic suturing and wound management

	<ul style="list-style-type: none"> • 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>t</p> <p>Desirable (Cardiothoracic Surgery / Plastic Surgery):</p> <ul style="list-style-type: none"> • Anastomosis • Endoscopy
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 		

	<ul style="list-style-type: none"> • 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	<p>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).</p> <p>As a trainee develops an interest in a particular speciality then the principles of history taking and examination may be increasingly applied in that context.</p>		<p>Strongly recommended: Life Support Critical Care ATLS / APLS</p> <p>Desirable: Team working Human Factors</p>
Clinical Skills	<p>4 Surgical history and examination (elective and emergency)</p> <p>3 Construct a differential diagnosis</p> <p>3 Plan investigations</p> <p>3 Clinical decision making</p> <p>3 Team working and planning</p> <p>3 Case work up and evaluation; risk management</p> <p>3 Active participation in clinical audit events</p> <p>3 Appropriate prescribing</p> <p>3 Taking consent for intermediate level intervention; emergency and elective</p> <p>3 Written clinical communication skills</p> <p>3 Interactive clinical communication skills: patients</p> <p>3 Interactive clinical communication skills: colleagues</p>		

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 (2000) • Mental Health (Care and Treatment) (Scotland) Act (2003) • Adult Support and Protection (Scotland) Act (2007) 	WBA Course test completion certificate	
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 		<p>Strongly recommended: Basic surgical skills Life Support Critical Care</p> <p>Strongly recommended (Paediatric Surgery):</p> <ul style="list-style-type: none"> • Safe surgery <p>Desirable Human Factors</p>

	<ul style="list-style-type: none"> • 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 		Team-working
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	<ul style="list-style-type: none"> • Metabolic response to injury • 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 		
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	<ul style="list-style-type: none"> • 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 <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 		

	<p>injuries</p> <ul style="list-style-type: none"> • 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</p>		

	<p>nutritional 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>		<p>Strongly recommended (Paediatric Surgery)</p> <p>Desirable</p>

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 • 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>	WBA Course test and certificate	
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>Strongly recommended: Life Support Critical Care Wound management ATLS / APLS</p> <p>Desirable: Team-working Human Factors Trauma management</p>

	<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 • 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 		
<p>Clinical Skills</p>	<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 • 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, 		<p>Strongly recommended: Critical Care Child protection</p> <p>Desirable Team-working</p>

	<p>sexual, neglect, professional)</p> <ul style="list-style-type: none"> • Understanding of one personal role, responsibilities and appropriate referral patterns in child protection • Understanding of the challenges of working in partnership with children and families • Recognise the possibility of abuse or maltreatment • Recognise limitations of own knowledge and experience and seek appropriate expert advice • Urgently consult immediate senior in surgery to enable referral to paediatricians • Keep appropriate written documentation relating to child protection matters • Communicate effectively with those involved with child protection, including children and their families 		
Clinical Skills	<p>3 History and examination of the neonatal surgical patient 3 History and examination of paediatric surgical patient 3 Assessment of respiratory and cardiovascular status 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>		Desirable Team-working Human Factors
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 		Strongly recommended (Paediatric Surgery):
			<ul style="list-style-type: none"> Ethical issues Palliative care Communication

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 		

	<ul style="list-style-type: none">• 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	4 The ability to treat patients who are obese in a supportive and

	<p>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	
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</p> <p>2 Management of surgical patients in the context of their dementia</p> <p>4 A range of techniques and strategies to communicate effectively with people with dementia and their carers/families</p> <p>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	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

Requirement to meet ST3 in Plastic Surgery

In order to meet the job specifications of an ST3 trainee an early years trainee must take a clear role in the Plastic Surgery team, managing clinic and ward based patients under supervision, including the management of acute plastic surgery admissions. They will need to be able to take part in outpatient clinics and see 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 Plastic Surgery during these years. This means spending 6-12 months in Plastic Surgery 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 a Plastic Surgery ward environment, 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 are laid out below and in the depth demonstrated in a text book such as Plastic Surgery by Grabb and Smith (6th Edition) or Fundamentals of Plastic Surgery by McGregor (10th Edition)

1. Assessment and diagnosis of hand trauma cases and including operative management in some cases with appropriate supervision as appropriate
2. Assessment and initial management of burns and scalds in children and adults.
3. Wound management including complex and contaminated wounds and involving both conservative and operative management.
4. Assessment and initial management of cases of lower limb trauma involving compound fractures with soft tissue damage, skin loss, major nerve and/or vessel injury.
5. Diagnosis and management of skin lesions, including skin malignancy.
6. Competence in the use of general plastic surgery techniques in reconstruction including skin grafting, z-plasty, flap elevation and related techniques. Early competence in the use of the operating microscope.
7. Management of common elective plastic surgical procedures.

Early Years training in Plastic Surgery	
Objective	To gain experience in early care of patients with the following: <ul style="list-style-type: none"> • Thermal injury, soft tissue trauma, including hand, limb and facial injuries. • Skin and soft tissue tumours including malignancy • Common elective procedures as laid out in the curriculum
Knowledge	Basic science relevant to management of common emergency and elective plastic surgery conditions including anatomy, physiology, pathology and pharmacology. Knowledge of the principles of allotransplantation Knowledge of relevant imaging techniques. Principles of patient management relevant to common emergency and elective plastic surgical conditions.
Clinical Skills	Ability to systematically undertake examination of the hand and upper limb. Ability to carry out initial assessment and management of burns cases requiring resuscitation. Ability to diagnose common skin tumours including malignancy.
Technical Skills	Exploration of traumatic wounds including hand trauma cases. Repair of divided hand extensor tendon. Repair of divided digital nerve. Repair of divided flexor tendons Split and full thickness skin grafting. Excision of skin and soft tissue lesions. Some ability to use operating microscope.

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.

Specific evidence includes

Assessment type	Subject
DOPS a selection of types and numbers of each type according to learning agreements	Assessment of burn surface area. Exploration, debridement and closure of wound Harvesting split skin graft Harvesting of full thickness skin graft Repair of divided extensor tendon Repair divided digital nerve Excision and closure of simple skin lesions
Case Based Discussion	At least 1 per attachment
mini CEX	Clinical assessment of injured hand Clinical assessment of burns patient
PBAs	Some common plastic surgical procedures
Training Supervisors report	Evidenced by above WPBAs
ARCP for each specified training interval	As per local Deanery specifications
MRCS	Generic syllabus

Intermediate Stage Overview

Entry into ST3 will usually involve a competitive selection process. The current [person specifications](#) for entry into ST3 in Plastic Surgery are shown on the [Modernising Medical Careers website](#). The essential components here 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 Plastic Surgery specific components of the early years training as evidenced by a successful ARCP and completion of the appropriate WPBA.

Overview of model

The Intermediate Years Plastic Surgery Curriculum proposal represents the second phase of providing a detailed description of the range of practice within our specialty. This is a continuation of the work begun with submission and GMC approval of our Final Years Curriculum (August 2012 version). We had stated in the Final Years submission that we would progress on to similar exercise for Intermediate Years.

In line with the Final Years Curriculum we will adopt the same modular structure of study that encompasses the various topic areas specifying the competency requirements of Knowledge, Clinical Skills and Technical Skills. The adoption of the modular curriculum structure has facilitated a much clearer expression of our specialty. The modular format is widely used on other educational platforms including our professional associations' instructional courses and the E-Learning for Health project.

The subject matter of each module is presented in a hierarchical manner; namely Basic, Intermediate or Advanced Levels of complexity. The definition of levels applies to the entirety of the programme and does not vary between Early, Intermediate and Final Years. Thus an advanced competency is the same whether or not it is retained as an item under Intermediate Years or is solely applicable to Final Years.

The means used to determine allocation of content at Intermediate Years level is as follows. The Final Years syllabus was taken as the complete expression of our specialty with the exception of some 'orphan' content that exists on the original intermediate Years syllabus but was not suitable for special interest development at Final Years level. These additional modules have been written and are flagged in the Summary of Modules list that follows. The curriculum development group along with a number of experts within the profession have removed items from the Final Years syllabus including more advanced operative competences etc. to reflect that which we judge all plastic surgeons should know and be able to perform. This is in line with our stated aim to have a curriculum that starts with the competences we required of our consultants that we then map backwards and is in line with the methodology followed to date.

It is an important part of this process that we define the level of what should be achieved within Intermediate Years. We believe that this is the body of knowledge and clinical skills that are tested at the Intercollegiate Specialty Examination in Plastic Surgery; FRCS(Plast). All trainees learn the same things and acquire similar skill sets up to this point. The current level of the examination is defined as the 'Level of the Day 1 Consultant in the generality of the specialty.' One of our major reference points in the current exercise is not to alter what is being expected of trainees at the examination. *The key difference between Intermediate*

Years and Final Years Curriculum is that there is no element of choice for Intermediate Years Curriculum – this is the body of knowledge and skills that we expect all plastic surgeons to acquire during training. We are not planning to change the content of what is examined at the Intercollegiate Specialty Examination.

As part of the Final Years curriculum development a large number of Procedure Based Assessments have been written and uploaded onto ISCP (about 150) and these are now available for use by all trainees (including those on the CESR CP route). The blueprint of PBAs is detailed. No further work needs to be done here but there are some navigability issues that we need to address through ISCP. In addition we have developed the Reflective Case Based Discussion as a tool for use in the Final Years programme. While we do not think this tool is quite right for Intermediate Years, there will be development of reflective learning from an early stage through a reflective diary.

A further need has been identified for development of the Leadership skill set somewhat more clearly in the Intermediate Years. Specifically there is a need to develop all trainees in their ability to work within the multidisciplinary environment as this has become such an important part of the way plastic surgery is now working with other disciplines. The Professional skills themselves are generic and already on ISCP.

The topic areas specified in this syllabus proposal are the same as those in our approved Final Years Curriculum with several single module additions for topics that are currently part of our Intermediate Years syllabus but were not thought to constitute substantive areas of special interest study at Final Years level. These new modules are flagged with *. The sharing of curriculum with other surgical disciplines through the Training Interface Groups (TIGs) has been addressed in the Final Years Curriculum and is not considered further in this submission for the Intermediate Years Curriculum. It is important, however, that the Intermediate Years Curriculum prepared the foundation for trainees to be able to progress careers in their chosen special interests. The topics appear in alphabetical order within the document.

- Aesthetics
- Burns
- Chest wall reconstruction *
- Cleft
- Complex wound
- Craniofacial
- Craniomaxillofacial trauma *
- Ear reconstruction
- Genitourinary reconstruction

- Lower Limb Trauma
- Hand
- Head & Neck
- Oncoplastic Breast
- Pelvic floor reconstruction *
- Sarcoma *
- Skin Surgery
- Vascular anomalies *

Standards for Training

Standards for depth of knowledge

The following methodology is used throughout the surgical curricula 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.
- 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.

Competency Levels within each Module

The current system takes each procedure and describes Levels 1- 4 competencies for the same. As the training years proceed the trainee gets to master more complex procedures. There is increasing understanding within ISCP Management Committee that this may not be the best way to demonstrate progression onto more difficult procedures and in line with our Final Years Curriculum we have specified the syllabus content into areas that are typically easier and those that are inherently more difficult. Thus the Intermediate Years Curriculum will be both modular and hierarchical bringing it into line with that currently adopted for Final Years.

A. Basic level competencies

Within each module there are elemental topics that are designed to act as building blocks from which more complex competences can be achieved.

B. Intermediate level competency

These include a list of the more common topics within each module and most of these competencies will have been achieved within Intermediate Years prior to entry into the Final Years programme.

C. Advanced level competency

This third tier of topics includes the most complex topics in each module. Those items that are specified here are for all Intermediate Years trainees.

For the purposes of assessment at Intermediate Years and the Intercollegiate Specialty Examination in Plastic Surgery; FRCS(Plast). the level of competency deemed appropriate for the end of ST6 is Level 3 for the specified Technical Competences and Procedures and Level 4 for Knowledge and Clinical Skills specified on this part of the syllabus.

Assessment of the Intermediate Years Curriculum

It is recognised that trainees will have already gained some competencies during Early Years that can be recognised and taken forward into the Intermediate Years programme. These existing competencies are currently recognised within the ISCP online learning platform and inform the subsequent Intermediate Years Learning Agreement.

The assessment of the curriculum continues to be by workplace-based assessments, including MSF, CEX, CBD, and PBAs. Evidence from these assessments will be used to inform the ARCP that will form the summative assessment of trainees.

Reflective Diary

Trainees will be introduced to formative reflective learning through the use of a reflective diary (Appendix E). It is not thought that reflection at this level of training should be formally assessed but rather it is thought desirable to encourage reflection that then becomes the subject of formal assessment as currently specified under the Final Years Curriculum.

The content of the Intermediate Years Curriculum is that which is formally assessed at the Intercollegiate Specialty Examination in Plastic Surgery; FRCS(Plast). The examination may currently be sat at the end of Intermediate Years when it is judged that the trainee has achieved the necessary competences specified in the generality of the specialty. Progression into Final Years where the trainee can develop special interests as appropriate is not specifically linked to success in the examination but remains under the direction of the Programme Director. Some trainees will need the full programme time to achieve the examination but can nonetheless have tailored an individual Learning Agreement that allows the trainee to progress through Final Years with appropriate placements balancing the requirements of the generality of the specialty with the need to develop some areas of interest with depth and experience appropriate to consultant practice.

The E-logbook (which all surgeons are now recommended to use) has a highly detailed lexicon for plastic surgery. Advanced search facilities have been developed in collaboration with the Curriculum Development Group of the SAC for Plastic Surgery. It is now possible to search on the basis of the WBA blueprint by topic sections / modules (Intermediate Years Curriculum) as well as by the index groupings of operations (Quality Indicators for CCT). All operative experience gained will be visible, enhancing the Learning Agreement and demonstrating both competence development and progression within the programme.

Aesthetic Surgery Syllabus

The purpose of training in aesthetic surgery is to become competent in the management of aesthetics. Training in aesthetic surgery is an integral part of the wider programme in plastic surgery with existing requirement to achieve competence in order to acquire CCT. Many of the skills attained from aesthetic practice are pertinent to reconstructive practice of the same anatomical areas for which reason numbers of UK-based plastic surgery programmes are funded by deaneries to rotate to the private sector. In addition there is a programme of national fellowships.

Modules:

1. Aesthetic Surgery of the Breast
2. Aesthetic Surgery of Face, Orbit & Neck Rejuvenation
3. Rhinoplasty / Otoplasty
4. Rejuvenation/restoration of the trunk, body contouring, liposuction & fat grafting
5. Non-surgical rejuvenation

Topic	Aesthetic	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 1	Aesthetic Surgery of the Breast	
Objective	<i>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.</i>	
Knowledge	BASIC Should be able to demonstrate knowledge of <ul style="list-style-type: none"> - applied and surgical anatomy of the breast, its blood, nerve supply and function, - development of the breast and congenital deformity and variations of breast form and associated structures, - hormonal control of the breast and its pathology, when deranged, - breast physiology in pregnancy and 	

	<p>lactation,</p> <ul style="list-style-type: none"> - benign pathologies of the breast, - presentation, clinical features of breast cancer, its staging, prognosis and management pathways, - effect of ionizing radiation on the breast and implants, - planning incisions on the breast. - closure and management of breast wounds. - self-perception and self-consciousness in relation to breast conformation and proportion including the social and sexual dimensions, - pathology of deranged self-image. <p>INTERMEDIATE Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - content, structure, physical and biological properties of breast implants, - spectrum of implants available and their applications, - design, principles and applications of tissue expanders, - nature, physiology and behaviour of implant capsules, - management of capsular contractures. - biology, implications, avoidance of and management of implant infection, - various designs and approaches to breast augmentation and their applications. - the issues surrounding breast size and its assessment. - complications of breast augmentation and their management. - various designs and patterns of breast reduction and mastopexy, - complications and management of breast reduction/remodelling. - presentation, management and complications of gynaecomastia. <p>ADVANCED Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - assessment of envelope and volume in relation to breast asymmetry, both developmental and acquired, - classification and management pathways of the tuberous breast, - management pathways and choices 	
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	<ul style="list-style-type: none"> - in breast asymmetry, - impact of breast reconstruction choices on symmetry, - effect of time, ageing and pregnancy on breast asymmetry correction, - various techniques of breast reconstruction, their applications, design and planning, - complications of breast reconstruction, - techniques for nipple reconstruction, including considerations of sequence and timing, - features of dysmorphophobia, - psychosexual dimension in aesthetic breast surgery. 	
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess and undertake non-operative of the management of the acute surgical patient, - take a targeted breast history, - perform patient examination including breast examination with reference to aesthetic considerations. <p>INTERMEDIATE Demonstrate knowledge of the management algorithms for the procedures covered in this section including investigations.</p> <p>ADVANCED Should be able to</p> <ul style="list-style-type: none"> - demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning, - assess and accurately record aesthetic concerns about the breast, - formulate management plans in relation to aesthetic interventions, - clearly explain, consent and counsel potential patients for aesthetic breast surgery, - assess the psychological suitability for aesthetic breast surgery and appropriately refer for expert psychological advice as necessary, - undertake risk benefit analysis of non-pathological based surgery, - deal with disappointment and postoperative dissatisfaction 	
Technical Skills and	<p>BASIC Should be able to perform</p>	Desirable Aesthetic surgery – Breast

Procedures	<ul style="list-style-type: none"> - planning, execution and closing incisions on the breast with reference to aesthetic principles and sub units. - designing and conduction of excision of skin lesions of the breast, - undertaking an aesthetic approach to removal of benign lesions of the breast, - scar revision in aesthetic breast surgery <p>INTERMEDIATE</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> - correction of the inverted nipple (various techniques), - bilateral breast augmentation by various routes, in various planes, - Wise pattern bilateral breast reduction, - vertical pattern bilateral breast reduction, - bilateral mastopexy of periareolar, vertical and Wise patterns, - excision of gynaecomastia, incorporating various forms of liposuction as appropriate. 	
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Topic	Aesthetic	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 2	Aesthetic Surgery of Face, Orbit & Neck Rejuvenation	
Objective	<i>Acquires competence in the diagnosis, aesthetic assessment and safe management of all patients presenting for consideration of avoidance or reversal of the features of physiological aging of the face, brow, neck and orbits.</i>	
Knowledge	<p>BASIC</p> <p>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - psychology of the desire for anti-aging interventions, - features denoting high-risk groups of patients that may present for surgical rejuvenation, - normal facial anatomy and its common variants, including clear 	

	<p>understanding of the blood supply, sensory and motor innervation,</p> <ul style="list-style-type: none"> - facial musculature and the course and distribution of the facial nerve, - the fascial planes of the face and the brow and the pattern of fascial compartments of the brow, face and neck, - anatomy of the eyelids, - cosmetic units of the face, - the effect of sun exposure on the texture and elasticity of the skin and the patterns of aging, - effect of various laser/light treatments on the dermis, - mechanisms of healing of partial thickness injury in facial skin, - formulation and application of chemical peeling agents. <p>INTERMEDIATE Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - accurate assessment and analysis of the pattern of face aging, - injectable fillers available, their uses, contraindications and interactions, - pharmacology of paralytic agents, the different formulations and the muscle groups to which they may be applied, - role of fillers and paralytics in the overall patient management plan, - indications for, and design of, endoscopic and open browlift and foreheadplasty, - fixation methods in brow lift, - indications and contraindications for facelift, - anatomy of the SMAS layer and how it may be modified, - facial fat pads and how they change with time, - variation of designs for facelift incisions, - different methods of facelifting, - different methods of necklifting, - designs and variations of blepharoplasty, upper and lower, - role of submental lipectomy and liposuction, - management of complications of rejuvenation surgery. <p>ADVANCED Should be able to demonstrate</p>	
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	<p>knowledge of</p> <ul style="list-style-type: none"> - applications, indications, limitations and complications of blepharoplasty alone and in combination with other techniques. 	
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess and deliver non-operative management of the acute surgical patient, - take history to include features relevant to the assessment and management of the aesthetic features of the head and neck, - examine the patient to include relevant aesthetic features of the head and neck. <p>INTERMEDIATE Should be able to</p> <ul style="list-style-type: none"> - assessment and analysis of all the features of the aging eyelid - demonstrate knowledge of the management algorithms, combinations and permutations of the rejuvenation procedures covered in this section including appropriate investigations, - record accurate assessment of the pattern of symptoms and physical features. <p>ADVANCED Should be able to</p> <ul style="list-style-type: none"> - demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning, - prepare an overall management plan for a given patient, - assess the psychological suitability for rejuvenation surgery and appropriately refer for expert advice as necessary, - undertake risk benefit analysis of non-pathological based surgery, - counsel and consent a patient for rejuvenation intervention. - define the subgroup of patients that can be managed by nonsurgical intervention, - recognise and counsel the unrealistic patient, - manage the situation whereby a patient's best interests are served by declining to treat that patient, - deal with disappointment and postoperative dissatisfaction. 	

Technical Skills and Procedures	BASIC Should be able to perform	Desirable Aesthetic surgery - Facelift, blepharoplasty
	<ul style="list-style-type: none"> - planning, designing and performing excision of facial skin lesions for aesthetic indications, - selecting and using injectables for fine rhytids, - using paralytics to weaken aging muscle groups, - upper lid blepharoplasty. 	
	INTERMEDIATE Should be able to perform	
	<ul style="list-style-type: none"> - facelift with plication of the SMAS, - MACS lift, - submental lipectomy, - liposuction for the face and neck areas. - pan or regional facial rejuvenation by laser / chemical peel / dermabrasion, 	
	ADVANCED Should be able to perform	
	<ul style="list-style-type: none"> - lower lid blepharoplasty by external or transconjunctival approaches. 	

Topic	Aesthetic	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 3	Rhinoplasty and Otoplasty	
Objective	<i>Competence in the diagnosis, planning and management of all aspects of aesthetic nasal and aesthetic ear surgery.</i>	
Knowledge	BASIC Should demonstrate knowledge of <i>Rhinoplasty</i> <ul style="list-style-type: none"> - anatomy of the nose including detailed description of the bone, cartilage, soft tissue structures, aesthetic units, - blood supply of the nose including ophthalmic artery, facial artery and angular artery as well as nerve supply, - physiological functions of the nose and how these may be affected by nasal surgery, - facial aesthetics including the psychological implications of rhinoplasty surgery, - dysmorphophobia and recognises 	

	<p>clinical features of condition, - local anaesthesia and the use of topical agents such as cocaine.</p> <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - anatomy of the ear including embryology and growth (including nomenclature of different elements of the ear), - blood supply of the ear including branches from external carotid artery, posterior auricular artery and superficial temporal artery, - nerve supply of the ear including auriculotemporal nerve, great auricular nerve, branches of the vagus nerve and lesser occipital nerve. <p>INTERMEDIATE Should demonstrate knowledge of</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - techniques to manage the nasal dorsum including dorsal hump reduction and dorsal augmentation, - different osteotomy techniques including placement of osteotomies, - techniques of endonasal and open approaches, including appropriate selection of surgical technique, - management of the alar cartilages and septum including resection, dome suturing and cartilage grafting techniques, - endonasal and open approaches to rhinoplasty, - techniques for nasal tip adjustment including resection, suturing, control of projection. - management of septal trauma <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - appropriate age-related considerations in respect of timing of otoplasty. cartilage maturation, - non-surgical management including neonatal moulding techniques, - anaesthesia including use of local anaesthesia and appropriate infiltration/blocks, - classification of prominent ears and definitions of cup ear, lop ear and Stahl's deformity, - surgical techniques for prominent ear correction including cartilage scoring e.g. Chongchet and 	
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	<p>suture-only techniques e.g. modified Mustardé,</p> <ul style="list-style-type: none"> - various dressing techniques with their relative merits, - potential complications of prominent ear correction with risk factors for the same, including infection and necrosis of cartilage and skin. <p>ADVANCED Should demonstrate knowledge of</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - complications of rhinoplasty surgery including functional complications, - secondary rhinoplasty techniques with indications for same. <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - the reconstructive techniques available for treatment of significant necrosis or deformity following prominent ear correction. 	
<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - arrange appropriate views for clinical photographic record, - elicit focussed history in respect of the rhinoplasty patient, - examine patient with reference to the nose including preoperative analysis of appearance and function, - recognise the need for psychological assessment and identifies dysmorphophobia. <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - clinically assess the patient with reference to the external ear and demonstrates appropriate communication when dealing with the paediatric patients, - arrange appropriate views for clinical photographic record, - take consent for primary otoplasty modifying communication when dealing with paediatric patient, - recognise the need for psychological assessment and identifies dysmorphophobia. <p>INTERMEDIATE Should demonstrate ability to</p>	

	<p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - clinically assess and analyse nasal defects including issues of balance and proportion., - make a surgical plan for primary rhinoplasty using skills of analysis and judgement - counsel and consent patient for rhinoplasty surgery, - recognise and counsel the unrealistic patient, - explain to patient when rhinoplasty not in best interests of patient. <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - clinically assess and analyse ear deformities including issues of symmetry and proportion, - make a surgical plan for primary otoplasty using skills of analysis and judgement, - counsel and consent patient for otoplasty surgery, - recognise and counsel the unrealistic patient, - explain to patient when otoplasty not in best interests of patient. <p>ADVANCED Should demonstrate ability to</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - examine the patient with reference to the nose including preoperative analysis of appearance and function, - deal with disappointment and postoperative dissatisfaction. <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - deal with postoperative complications, - deal with disappointment and postoperative dissatisfaction, 	
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - application of internal and external nasal splints, - drainage of septal haematoma - harvesting cartilage graft from ear and costochondral junction, - nasal packing for bleeding - infiltrating nose with local anaesthetic and administer topical agents such as cocaine, - osteotomies of nasal bones 	<p>Desirable Aesthetic surgery – rhinoplasty / pinnaplasty</p>

	<p>(various patterns).</p> <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - infiltration of ears with local anaesthesia including greater auricular nerve blocks, - application of prominent ear head dressing. <p>INTERMEDIATE Should demonstrate ability to</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - closed approach to the septum with or without concomitant rhinoplasty - cartilage graft harvest from nasal septum, - adjustment of nasal dorsum including dorsal hump, reduction and dorsal augmentation. <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - primary otoplasty with cartilage-scoring techniques, - primary otoplasty with suture-only techniques, 	
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Topic	Aesthetic	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 4	Rejuvenation/restoration of the trunk, body contouring, liposuction & fat grafting	
Objective	<i>Acquire competence in the assessment, planning correction and management of all aspects of body lifting and contouring</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of the skin and subcutis, - patterns and organisation of the blood and nerve supply of the relevant regions of the skin, - pattern of relaxed skin tension lines over the whole body, - pathogenesis of thromboembolic disease, and the prophylaxis and management of these disorders, - selection of appropriate prophylactic antibiotics. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of bariatric surgery, - metabolic consequences of bariatric surgery, - pathogenesis, effects and management of tissue necrosis, - appropriate placement of incisions for best aesthetic outcome, - complications of skin-tailoring surgery, - principles of liposuction and know of the different devices and their relative risks and benefits, - effects of postoperative changes in body weight and pregnancy in this group of patients, - pathology and principles of fat grafting. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - psychological condition of dysmorphophobia, - condition of monosymptomatic hyperchondriacal psychosis, - psychosexual impacts of body image disorder, - patterns of acquired skin excess, - syndromic abnormalities of skin laxity, 	

	<ul style="list-style-type: none"> - forms of lipodystrophy, its patterns and presentations, - specific complications of the various techniques of liposuction, - techniques, donor sites and morbidity of fat grafting, - the developing research into trophic/non-volumetric effects of fat grafts. 	
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess and deliver non-operative management of the acute surgical patient, - take history to include features relevant to the assessment and management of body contour problems, - examine the patient with reference to patterns of skin excess and laxity to include assessment and documentation of symptomatically displeasing body contours. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - undertake clinical assessment for the perceived deformities covered in this module. - translate presenting complaints into an appropriate plan for potential intervention, - recognise the patient seeking treatment of obesity by body contouring. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - make a surgical plan for the individual patient in respect of conditions covered in this module using skills of analysis and judgement, - assess the psychological suitability for body contouring surgery and appropriately refers for psychological advice as necessary, - perform risk-benefit analysis of non-pathological based surgery, - counsel and consent a patient for an episode of body contouring surgery, - communicate the range of secondary effects of a given operation and suggest adjuvant procedures or alternative 	

	<p>techniques,</p> <ul style="list-style-type: none"> - accurately assess local volume excess and translate that into a plan for liposuction, - recognise lipodystrophies, - recognise local fat deficiencies which will benefit from fat grafting, - recognise and counsel the unrealistic patient, - explain to patient when body contouring surgery not in best interests of patient, - deal with disappointment and postoperative dissatisfaction. 	
Technical Skills and Procedures	<p>BASIC Should be able to undertake</p> <ul style="list-style-type: none"> - wound management and dressing care, - management of the necrotic wound and its defect, - range of wound closure techniques, - application of closed suction drainage. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - various patterns of abdominoplasty. - correction of lax abdominal musculature, - regional liposuction, - scar revision including management of the 'dogear', - fat graft harvest and preparation of fat grafts, - undertakes local lipofilling with fat graft. 	Desirable Aesthetic surgery – abdominoplasty

Topic	Aesthetics	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 5	Non-Surgical rejuvenation	
Objective	<i>Acquire competence in the management of the aesthetic patient using non-surgical enhancement techniques</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy and physiology of skin 	

	<p>including classification of skin types,</p> <ul style="list-style-type: none"> - normal ageing changes of skin including changes related to sun exposure, - range of products and non-surgical techniques available for non-surgical rejuvenation, - the role of these techniques, the indications for use as sole techniques and as adjuncts to other surgical procedures. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - specific patterns of ageing in different parts of the body with emphasis on face, neck and hands, - biology of scarring, pigmentation changes, and their modulation, - factors and conditions that may cause premature ageing including smoking and substance abuse, - mechanism of action, effects and duration of action of the products and techniques used for non-surgical rejuvenation. Specifically, the range of preparations of botulinum toxin, dose schedules and how to achieve complete and partial temporary paralysis of selected muscle groups. - the various filler injection preparations on the market and the literature regarding outcomes of the same (permanent, semi-permanent and temporary fillers). - different types of lasers available for aesthetic enhancement, their potential applications, mechanism of action, treatment schedules and useage. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - racial differences in skin type and the differences in response by skin type to the interventions described in this module, - complications of use of non-surgical techniques including use of hydroxyquinones, botulinum toxin overuse, scarring from chemical peel, laser, 	
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Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - elicit relevant features in patient history including the specific concerns of the patient, - identify and enumerate the features of facial ageing and examines the skin and underlying tissues to demonstrate those features. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - identify evidence of previous treatments including active botulinum toxin, stigmata of laser resurfacing / dermabrasion / microdermabrasion, - formulate management plan for the optimal enhancement of the facial aesthetic patient by non-surgical techniques, - optimize the sequencing of the recommended treatments, - undertake basic functional and psychological assessment of patient's needs, - show ability to take clinical photographs and catalogue within the legislative framework of the Data Protection Act, and offer appropriate explanation to patient regarding the safeguarding and use of their images. 	
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - injection techniques to the facial area - steroid injection for hypertrophic or keloidal scar, - filler injections for facial rhytids or small depressed scars. <p>INTERMEDIATE Should be able to administer</p> <ul style="list-style-type: none"> - botulinum toxin injections to glabella, forehead, periorbital, perioral and cervical areas for targeted muscle paralysis. 	Desirable Injection techniques to facial area

Burns Surgery Syllabus

Syllabus Structure

The syllabus is structured on a modular basis. The modules are based on the published guidelines 'European Practice Guidelines for Burn Care Based by the Copenhagen EBA meeting, September 2002' (EBA March 2003).

The modules are as follows:

1. Classification, primary management and transfer
2. Resuscitation and critical care
3. Early surgery
4. Late surgery
5. Infection and other complications
6. Paediatric burns

In respect of quality indicators for burns surgery:

Unless otherwise specified it is assumed that all topics apply to both adult and paediatric patients and that the specific differences between the two are to be appreciated. Training must include adequate exposure to both.

Topic	BURNS	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 1	Classification, primary management and transfer	
Objective	<i>Acquire competence in the initial management of patients with burns in the emergency department and their transfer to an appropriate burns facility/unit/centre.</i>	
Knowledge	<p>BASIC</p> <p>Should be able to describe in detail the knowledge set contained in the courses:</p> <ul style="list-style-type: none"> ATLS EMSB or ABLIS PALS/APLS <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> -anatomy of the body surface, physiology, pathophysiology of burn injury, - factors influencing burn healing, - blood supply of skin, - the timing and rationale for antibiotic use - timing of initial surgery, - appropriate pre-operative investigations, - classification of burn injury, - resuscitation options, 	

	<ul style="list-style-type: none"> - importance of specialist centres, MDT and interdisciplinary communication, especially with anaesthetic and paediatric colleagues - the role of other members of team including microbiologists, physiotherapy, occupational therapy, - paediatric fluid regimes, - features and management of toxic shock syndrome, - an overview of non-accidental injury. <p>INTERMEDIATE</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - differing roles of burn facilities, units and centres and integration with Major Trauma Centres - pathophysiology of burns and their classification, - management of specific injuries e.g. inhalation, chemical and electrical burns, - non-accidental injury, - various transfer options available for the burn patient, <p>ADVANCED</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - controversies and issues arising as a result of a decision not to resuscitate 	
Clinical Skills	<p>BASIC</p> <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> - elicit burn-related history, - assess and plan the non-operative management of burn injury, - recognise life-threatening injuries, - perform examination to including assessment of severity (extent and depth) of injury, - assess vascular status of limb, - assess the presence of compartment syndrome. <p>INTERMEDIATE</p> <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> - prepare a range of management options for the conditions covered in this module. - work with other agencies in non-accidental injury. 	
Technical	BASIC	Desirable

Skills and Procedures	<p>Should be able to perform</p> <ul style="list-style-type: none"> - assessment of burn area and depth, - adjunctive techniques for depth assessment, - escharotomy and fasciotomy, - application and change of burn dressings. <p>INTERMEDIATE Demonstrate ability to use epidermal substitutes.</p> <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - airway management including performing tracheostomy, - stabilising associated injuries and bleeding. 	Burns treatment
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Topic	BURNS	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 2	Resuscitation and critical care.	
Objective	<i>Acquire competence in the initial resuscitation of a burn patient and ongoing critical care.</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - options for airway management, - pathophysiology of burn shock, - resuscitation regimes, - wound dressings, - pathophysiology of inhalation injury. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of early burn debridement, - principles and management of burns and the relevance to subsequent soft tissue reconstruction, - relevance of pharmacological interventions including antibiotics and inotropes, - management of inhalation injury including bronchoscopy, - metabolic response to the burn injury, - palliative care in respect of the burn patient. 	

	<p>- PHDU practices.</p> <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - microbiology of burns, - nutritional support. 	
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess burn injury, - manage large burn wounds, - apply temporary dressings e.g. negative pressure. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - manage more complex burns, - resuscitate burns with TBSA <40%, - explain the problems associated with the extremes of age and of polytrauma, - prescribe appropriate antibiotics (antibiotic stewardship), 	
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - appropriate pre-washing and prepping burn during dressing change, - escharotomy and fasciotomy, - application of a range of burns dressings e.g. Biobrane, Flamazine. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - elective tracheostomy, - adequate debridement of injured soft tissues to achieve a stable wound approaching elective conditions (including fascial excision), - planning of future soft tissue reconstruction. 	Strongly recommended Burns treatment

Topic	BURNS	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 3	Early surgery	

Objective	<i>Acquires competence in the planning and execution of appropriate early surgery in burns.</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of skin, - classification of burn injury by zones, - benefits and disadvantages of both early excision and conservative management. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - options available for early surgery, - requirements of special sites, - principles of management of more complex injuries, including polytrauma, - planning and prioritising treatment within an MDT setting. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - surgical management of the burn, - principles and use of dermal and epidermal substitutes. 	
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assesses burn injuries and demonstrates recognition of injury patterns. - use simple management techniques including use of appropriate dressings, - prescribe appropriate antibiotics, - plan burn excision and grafting, - use of epidermal substitutes such as Biobrane. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate management algorithms for the common patterns of burn injury, - plan total and staged burn excision and grafting, - apply psychological assessment tools for evaluation of psychological needs (patient questionnaires). 	

Technical Skills and Procedures	BASIC Should be able to perform <ul style="list-style-type: none"> - dressings care, - skin grafts of small to moderate areas. 	Desirable Burns treatment
	INTERMEDIATE Should be able to perform <ul style="list-style-type: none"> - skin grafts of large areas, - plan and raise flaps where grafts are not appropriate, 	
	ADVANCED Should be able to perform <ul style="list-style-type: none"> - resurfacing procedures using temporary skin cover, - resurfacing using skin substitutes, - limb amputations. 	

Topic	BURNS	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 4	Late surgery	
Objective	<i>Acquire competence in later burn management including the planning and execution of reconstructive surgery.</i>	
Knowledge	BASIC Should demonstrate knowledge of <ul style="list-style-type: none"> - anatomy of skin and soft tissues, - pathophysiology of hypertrophic scars and keloids, - principles of scar management, - effect of growth on burn scars, - use of grafts and local flaps. INTERMEDIATE Should demonstrate knowledge of <ul style="list-style-type: none"> - indications for use of skin substitutes, distant flaps and free flaps, - stages of bereavement associated with loss of body image and the clinical and psychological supports that can be put in place to assist the patient cope with that 	

	loss.	
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess burn scars and contractures demonstrating recognition of injury patterns, - use simple management techniques including use of splints and pressure garments, - plan release of burn scars using grafting and local flaps. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate management algorithms for the common patterns of burn scarring, - plan for the use of skin substitutes, distant flaps and free flaps. 	
Technical Skills and Procedures	<p>BASIC Should be able to perform burn scar grafting and local flaps including the Z-plasty and its variations.</p> <p>INTERMEDIATE Should be able to use skin substitutes and distant flaps of small and medium areas.</p>	Desirable Burns treatment

Topic	BURNS
Category	ST3-6 Intermediate Years
Module 5	Infection and other complications
Objective	<i>Acquire competence in the diagnosis and management of burn infections and other complications</i>
Knowledge	<p>BASIC Should demonstrate knowledge of the microbiology of burns.</p> <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - metabolic derangement occurring in the burn patient, - concept and practice of antibiotic stewardship.
Clinical Skills	<p>BASIC Should demonstrate ability to undertake wound assessment.</p>

	<p>INTERMEDIATE</p> <p>Should demonstrate ability for the clinical assessment and management algorithms for the infections and other burn complications.</p>
Technical Skills and Procedures	<p>BASIC</p> <p>Should be able to undertake surgical management of wound infection.</p>

Topic	BURNS
Category	ST3-6 Intermediate Years
Module 6	Paediatric burns
Objective	<i>Acquire competence in the diagnosis and management of paediatric burns and the recognition of the need for multidisciplinary management.</i>
Knowledge	<p>BASIC</p> <p>The knowledge requirements are as per modules 1-5, in the context of the paediatric patient.</p> <p>Should demonstrate knowledge</p> <ul style="list-style-type: none"> - as defined by PALS/APLS, - paediatric fluid regimens, - toxic shock syndrome, - non-accidental injury. <p>INTERMEDIATE.</p> <p>As per modules 1-5, in the context of the paediatric patient.</p> <p>Demonstrates knowledge of PHDU practices.</p>
Clinical Skills	<p>BASIC</p> <p>As per modules 1-5, in the context of the paediatric patient.</p> <p>Works with other agencies in the event of non-accidental injury.</p> <p>INTERMEDIATE</p> <p>As per modules 1-5, in the context of the paediatric patient.</p> <p>Works with the paediatric elements of the MDT.</p> <p>Applies the law in respect of non-accidental injury and communicates with appropriate parties.</p>
Technical Skills and Procedures	<p>BASIC</p> <p>As per modules 1-5, in the context of the paediatric patient.</p> <p>Should be able to apply Biobrane and similar dressings.</p> <p>INTERMEDIATE</p> <p>As per modules 1-5, in the context of the paediatric patient.</p>

Topic	CHEST WALL RECONSTRUCTION
Category	ST3-6 Intermediate Years
Module	Chest wall reconstruction
Objective	<i>Acquire competence in the diagnosis and management of congenital and acquired defects of the chest wall.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - anatomy and physiology of the chest wall and respiratory mechanics - common cardiothoracic procedures, their access (e.g. median sternotomy, lateral thoracotomy) and potential complications (e.g. mediastinitis, empyema, bronchopleural fistula) - indications for skeletal reconstruction in chest wall defects <p>INTERMEDIATE. Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - congenital chest wall deformities e.g. Poland's syndrome, pectus carinatum and pectus excavatum - local and regional flaps utilised in chest wall reconstruction and their anatomy - pathophysiology of median sternotomy breakdown and a classification for median sternotomy wounds <p>ADVANCED: Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - potential impact of chest wall defects on respiratory physiology - strategies for management of noncollapsible chest cavity dead space and bronchopleural fistula - prosthetic materials used in chest wall reconstruction - the effects of radiation on the chest wall and the pathophysiology of osteoradionecrosis - omental flap in chest wall reconstruction - free tissue transfer in chest wall reconstruction - techniques for repair of congenital pectus deformities - techniques for salvage of failed chest reconstruction
Clinical Skills	<p>BASIC Should demonstrate ability to:</p> <ul style="list-style-type: none"> - communicate and plan with other specialties to organise patient care - undertake clinical assessment of a median sternotomy wound - undertake clinical assessment of a chest wall soft tissue tumour <p>INTERMEDIATE Should be able to:</p> <ul style="list-style-type: none"> - formulate a holistic management plan for an individual with a chest wall defect - undertake clinical assessment of a congenital chest wall deformity - consent a patient for chest wall reconstruction, discussing advantages and disadvantages of reconstructive options and detailing possible complications - manage complications of chest wall reconstructive surgery appropriately <p>ADVANCED: Should be able to:</p> <ul style="list-style-type: none"> - clinically assess complex reconstructive cases, including salvage

	<p>reconstruction, and formulate an appropriate multi-disciplinary management plan</p> <ul style="list-style-type: none"> - formulate a care pathway for an individual with a congenital chest wall deformity, including provision of psycho-social care as well as a holistic management plan that considers the aesthetic as well as functional consequences of the condition and subsequent treatment
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to:</p> <ul style="list-style-type: none"> - apply a negative pressure dressing to a chest wall defect - perform skin grafting to a chest wall defect <p>perform a range of local skin flaps for a chest wall defect</p> <p>INTERMEDIATE Should be able to perform:</p> <ul style="list-style-type: none"> - primary debridement of a chest wall wound - pectoralis major and rectus abdominis pedicled muscle flaps for median sternotomy coverage <p>ADVANCED Should be able to perform:</p> <ul style="list-style-type: none"> - fasciocutaneous / musculocutaneous / muscle-only flap reconstruction for thoracic defects (e.g. serratus anterior, trapezius, latissimus dorsi or parascapular flaps). - reconstruction of defect with omental flap (in concert with general surgery colleague)

Cleft Surgery Syllabus

Syllabus Structure

The syllabus is structured on a modular basis.

The modules are as follows:

1. Primary management of cleft lip and nose
2. Secondary repair of cleft lip and nose
3. Primary repair of cleft palate
4. Secondary speech surgery
5. Dento-alveolar defect including alveolar bone grafting
6. Orthognathic Surgery / Working with the Cleft MDT

Topic	CLEFT
Category	ST3-6 Intermediate Years
Module 1	Primary management of cleft lip and nose
Objective	<i>Acquire competence in the management of the unrepaired cleft lip and nose deformity.</i>
Knowledge	<p>BASIC</p> <p>Should be able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> - surgical anatomy, pathological anatomy, embryology and basic genetics of facial clefting and associated anomalies. - past and current and protocols for repair of cleft lip and palate. - content of the Paediatric Intermediate Life Support Course or equivalent course as currently approved by the Resuscitation council of the UK, and ability to resuscitate a child. - criteria that would constitute grounds for admission to Intensive Care Unit. - issues of non-accidental injury and child protection. Know the referral pathways for protection of the 'at-risk' child. <p>INTERMEDIATE</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - the different techniques for cleft lip and nose repair. - timelines and sequence of operative procedures.

<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take care of the pre and post-operative patient/child undergoing cleft surgery including assessment for anaesthetic risk factors, postoperative fluid management, antibiotic prescribing, - manage a naso-pharyngeal airway both in the peri-operative environment, and post-operatively, - take informed consent for the procedures covered in this module, - use the operating microscope, - present cases within the Cleft MDT. <p>INTERMEDIATE Should demonstrate ability to:</p> <ul style="list-style-type: none"> - counsel parents of new patients including those following ante-natal scan diagnosis, - plan appropriate treatment schedule within the context of the cleft MDT. <p>ADVANCED Should demonstrate ability to:</p> <ul style="list-style-type: none"> - formulate a management plan within the MDT as a fully integrated member of the team, - communicate with patients/families, - maintain and demonstrate the skills articulated in APLS/PALS, - recognise signs of non-accidental injury, risk factors, and family pathology.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to mark up a cleft lip repair according to one of the currently accepted techniques.</p> <p>INTERMEDIATE Should be able to mark a cleft lip and nose repair. Should be able to perform some of the muscle dissection and elevation of a vomerine flap</p>

Topic	CLEFT
Category	ST3-6 Intermediate Years
Module 2	Secondary repair of cleft lip and nose
Objective	<i>Acquire competence in the management of the previously repaired cleft lip and nose deformity.</i>
Knowledge	<p>BASIC Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - surgical anatomy, pathological anatomy and physiology of the cleft nose, <p>INTERMEDIATE Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - facial morphology and aesthetics, - surgical approaches to the nose, - rhinoplasty techniques relevant to cleft nose deformity
Clinical Skills	<p>BASIC Should demonstrate ability to correctly elicit patients' concerns and their perceptions of the conditions.</p> <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - assessment lip and nose disability including alveolar fistula. <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> - determine the optimum timing of surgery and decide on priorities for treatment,

Topic	CLEFT
Category	ST3-6 Intermediate Years
Module 3	Primary repair of cleft palate
Objective	<i>Competence in the assessment, surgical management and aftercare of primary cleft palate.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy, embryology and basic genetic of facial clefting and associated anomalies (as for Module 1). - knowledge of sequencing of procedures for cleft palate repair. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomical basis for surgical correction of palatal abnormalities
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take informed consent for the procedures specified in this module, - care skilfully for the pre and post-operative cleft palate patient/child, - use the operating microscope, - manage a naso-pharyngeal airway. <p>INTERMEDIATE Should be able to demonstrate proficiency in managing the child undergoing cleft palate repair of average complexity.</p>
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - marking up a cleft palate repair. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - suturing of the oral layer in patients with cleft lip and palate.

Topic	CLEFT
Category	ST3-6 Intermediate Years
Module 4	Secondary speech surgery
Objective	<i>To develop competence in the management of speech disorders associated with cleft palate and related disorders</i>
Knowledge	<p>BASIC Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - the surgical anatomy, pathological anatomy and physiology of palatal function and abnormalities after cleft closure, including the pathophysiology of velopharyngeal incompetence (VPI). - the feeding mechanisms and relationship of infant feeding patterns to later speech development, - the physiology of the middle ear, Eustachian tube and causes of deafness in the cleft patient, - the clinical and investigative tools for examining speech development, - the place of surgical and orthodontic assistance to treatment of speech disorder <p>INTERMEDIATE Should be able to describe:</p> <ul style="list-style-type: none"> - the range of normal speech development mechanisms and how these are at risk in cleft disorders, - the impact of chronic otitis media on speech skills at school entry - the operations available for the amelioration of speech disorders including VPI.
Clinical Skills	<p>BASIC Should have ability to</p> <ul style="list-style-type: none"> - elicit speech disorders - liaise with Speech Therapists

Topic	CLEFT
Category	ST3-6 Intermediate Years
Module 5	Dento-alveolar defect including alveolar bone grafting
Objective	<i>To develop competence in the management of alveolar defects associated with cleft lip and palate.</i>
Knowledge	<p>BASIC: Should be able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> - the evolution of secondary dentition, - the related investigations and the basis for treatment of the secondary dentition, and - the anatomy of various potential sites for cancellous bone graft harvesting <p>INTERMEDIATE Should be able to describe:</p> <ul style="list-style-type: none"> - options for orthodontic treatment. - indications for pre-surgical orthodontic treatment, - the role of Paediatric Dentists including the basics of oral and dental hygiene, - the methods of assessment of success of bone grafting.
Clinical Skills	<p>BASIC Should be able to make clinical assessment of the secondary dentition.</p>
Technical Skills and Procedures	<p>BASIC Should be able to perform harvest of iliac bone graft.</p> <p>INTERMEDIATE Should be able to perform low scar access when harvesting iliac bone graft.</p>

Topic	CLEFT
Category	ST3-6 Intermediate Years
Module 6	Orthognathic surgery / Working with the Cleft MDT
Objective	<i>To acquire knowledge of the management of residual cleft deformity in adults including principles of orthognathics and related assessment / investigation</i>
Knowledge	<p>BASIC Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - the range of residual deformities that pertain at the cessation of facial growth, - the self-image problems extending into adult life, <p>INTERMEDIATE Should demonstrate understanding of</p> <ul style="list-style-type: none"> - Principals of orthognathics including distraction osteogenesis,

Complex Wound Syllabus

Topic	Complex Wound
Category	ST3-6 Intermediate Years
Objective	<i>Overall competence in the diagnosis and management of the complex wound excluding burn injury</i>
Knowledge	<p>BASIC Should be able to describe:</p> <ul style="list-style-type: none"> - the principles of management of non-burn conditions managed by the burn team (including cold injuries, TENS and purpura fulminans).
Clinical Skills	<p>BASIC Should demonstrate proficiency in</p> <ul style="list-style-type: none"> - clinical assessment of the non-burn injury, - liaison with other specialities - working and communicating within the relevant multidisciplinary team (MDT). <p>INTERMEDIATE Should be able to</p> <ul style="list-style-type: none"> - devise management plans and treatment algorithms for the conditions covered in this module,
Technical Skills and Procedures	<p>BASIC Should be able to stabilise the complex wound patient for safe transfer to specialist centre. Should be able to apply negative pressure dressing.</p> <p>INTERMEDIATE Should be able to perform primary debridement and application of temporary wound dressings in theatre.</p> <p>ADVANCED Should be able to</p> <ul style="list-style-type: none"> - debride complex wound

Craniofacial surgery

Syllabus Structure

The modules are as follows:

1. General Principles
2. Craniosynostosis
3. Tumours
4. Syndromes of tissue deficiency
5. Craniofacial overgrowth syndromes
6. Orbital surgery

Topic	CRANIOFACIAL
Category	ST3-6 Intermediate Years
Module 1	General Principles
Objective	<p><i>Principles of the MDT and the 'Craniofacial Assessment'</i> <i>e.g. Psychology of facial difference and speech and language assessment</i></p> <p><i>Anatomy & Embryology of the craniofacial complex</i> <i>Cephalometrics and facial analysis</i> <i>Trauma</i> <i>Emergency procedures</i> <i>Surgical approaches to the craniofacial complex</i></p>
Knowledge	<p>BASIC Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - embryology of the pharyngeal arch development and syndromes arising from developmental pathology, and should be to demonstrate proficiency in the descriptive anatomy of head and neck - multidisciplinary assessment of 'The Craniofacial Patient' (parameters including visual, audiological, airway, speech, feeding, psychological and neurological), - content of the Paediatric Intermediate Life Support Course or equivalent course as currently approved by the Resuscitation council of the UK. Know how to resuscitate a child, - criteria that would constitute grounds for admission to Intensive Care Unit, - issues of non-accidental injury and child protection, and the referral pathways for protection of the 'at-risk' child. - emergency diagnosis of elevated intracranial pressure (ICP) and/or intracranial haemorrhage <p>INTERMEDIATE Should be able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> - cephalometric characteristics of craniofacial syndromes - technique of intermaxillary fixation <p>ADVANCED Should be able to demonstrate knowledge of:</p>

	<ul style="list-style-type: none"> - anatomy of surgical approaches to craniofacial skeleton and relevant local flaps (temporalis, superficial temporal etc), - impact of disfigurement, the consequences of an altered appearance, what it involves psychologically and socially, and the impact of an individual's body image on their life and that of their family,
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - care for the pre and post-operative patient/child undergoing craniofacial surgery including assessment for anaesthetic risk factors, postoperative fluid management, antibiotic prescribing, - manage the airway both in the peri-operative environment, and post-operatively. - take informed consent for the procedures covered in this module, - present cases within the Craniofacial MDT <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - counsel parents of new patients including those following antenatal scan diagnosis for relevant syndromes.
Technical Skills and Procedures	<p>BASIC Trauma: Should be able perform tracheostomy (emergency and percutaneous) and nasal packing for epistaxis</p>

Topic	CRANIOFACIAL
Category	ST3-6 Intermediate Years
Module 2	Craniosynostosis
Objective	<i>Management of single suture and syndromic craniosynostosis</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - surgical anatomy, pathological anatomy and pathophysiology of craniosynostosis, - common phenotypes and head shapes, and - positional vs synostotic plagiocephaly: torticollis. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - basic clinical genetics of craniosynostosis syndromes, - recognition of different syndromic craniosynostoses (Apert, Crouzon)
Clinical Skills	<p>BASIC Should be able to</p> <ul style="list-style-type: none"> - explain to parents the challenges of these conditions at different stages of life from birth to adolescence, - describe the impact on the family of the birth of a child with a craniofacial anomaly and provide or arrange support.
Technical Skills and Procedures	<p>BASIC Should be able to :</p> <ul style="list-style-type: none"> - close a coronal incision

Topic	CRANIOFACIAL
Category	ST3-6 Intermediate Years
Module 3	Craniofacial tumours in adults and children
Objective	<i>Acquire competence in the management of adults with transcranial tumours (orbital, nasal, frontofacial, skull base) including SCC, BCC, melanoma. Acquire competence in the basic principles of management of children with transcranial tumours</i>
Knowledge	<p>BASIC Should be able to describe common adult tumours eg BCC, SCC, melanoma, and their pathology, natural history and treatment protocols</p> <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - other adult tumours – eg neurofibromatosis, neuroblastoma with their pathology, natural history and treatment protocols, - common paediatric tumours eg neurofibromatosis, fibrous dysplasia, teratomas and their pathology, natural history and treatment protocols, - adjunctive techniques eg interventional radiology and IMRT and chemo-irradiation, - complex craniofacial vascular anomalies and malformations - role of the surgeon in the MDT <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - management of the facial nerve in adult and paediatric tumours with indications for facial nerve sacrifice and rehabilitation
Clinical Skills	<p>BASIC Should be able to present cases to the MDT</p> <p>INTERMEDIATE Should demonstrate ability to diagnose, investigate the conditions covered in this module.</p> <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate treatment plans for the conditions covered in this module - lead decision making in the MDT, - co-ordinate the patient treatment pathway.
Technical Skills and Procedures	<p>BASIC Should be able to perform reconstructive techniques including grafts and local flaps</p> <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - elevation 'workhorse' free flaps including latissimus dorsi and radial forearm flap

Topic	CRANIOFACIAL
Category	ST3-6 Intermediate Years
Module 4	Craniofacial syndromes of tissue deficiency
Objective	<i>Acquire competence in the recognition and principles of management of hemifacial microsomia, Treacher Collins syndrome, mandibular deficiencies - Pierre Robin, Romberg's disease, morphoea, craniofacial clefts & encephalocoeles, Binder's syndrome, holoprosencephaly, arrhinia</i>
Knowledge	<p>BASIC Should demonstrate knowledge of (with their aetiology, developmental pathology & embryology, natural history)</p> <ul style="list-style-type: none"> - hemifacial microsomia (HFM), - Treacher Collins syndrome (TCS), - Romberg's disease, - Morphoea, - Tessier's classification of craniofacial clefts <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - treatment protocols for mandibular deficiencies - Pierre Robin <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - other tissue deficiency syndromes eg Craniofacial clefts & encephalocoeles, - Binder's syndrome, - holoprosencephaly, - arrhinia
Clinical Skills	<p>BASIC Not applicable</p> <p>INTERMEDIATE Should have ability to</p> <ul style="list-style-type: none"> - manage the compromised airway
Technical Skills and Procedures	<p>BASIC Should be able to perform excision of accessory auricles</p> <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - tissue expansion in the head and neck, - tarsorrhaphy techniques, - fat transfer.

Topic	CRANIOFACIAL
Category	ST3-6 Intermediate Years
Module 5	Craniofacial overgrowth syndromes
Objective	<i>Acquire competence in the management of hemifacial hypertrophy, facial infiltrating lipomatosis, tissue overgrowth secondary to vascular malformations (Beckwith Wiedemann Syndrome, proboscis)</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - hamartomas, teratomas, and dysplasias <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - planes of facial resuspension
Clinical Skills	<p>BASIC Should demonstrate ability to manage patients with reference to</p> <ul style="list-style-type: none"> - maintenance of vital functions including airway, feeding etc

Topic	CRANIOFACIAL
Category	ST3-6 Intermediate Years
Module 6	Orbital surgery
Objective	<i>Acquire competence in the principles of management of hypertelorism, microphthalmos, frontonasal dysplasia, craniofrontonasal dysplasia, orbital malpositions and dystopias, vertical orbital dystopia, late plagiocephaly and hemifacial microsomia.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - applied anatomy of the orbit and contents - examination of the eye and basic vision - eyelid anatomy and eyelid malposition - growth of the orbit - definition of terms eg hypertelorism, dystopia, telecanthus - differential diagnosis/genetics of hypertelorism syndromes - MDT assessment of hypertelorism syndromes <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - medial and lateral canthal fixation methods - orbital Prostheses – types, indications - retrobulbar haemorrhage
Clinical Skills	<p>BASIC Emergencies – see module 1</p>

Topic	CRANIOMAXILLOFACIAL TRAUMA	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module	Craniomaxillofacial trauma	
Objective	<p><i>Acquire competence in the assessment of a patient who has sustained injury and or fractures of the Craniomaxillofacial region. Develop ability to assess an injured patient presenting either acutely or in the outpatient clinic. Be alert for the potential for this class of injuries to occur and impact on the patient's airway, and vision. Awareness of consequences of change in orbital volume. Understand fracture patterns of the mandible, middle third of the face and orbits including multiple fractures. To be able to formulate a differential diagnosis and an investigation and management plan. To be able to treat the patient appropriately up to and including operative intervention if appropriate Understand the principles of surgical management of these injuries. Understand the principles of intermaxillary fixation techniques, principles of plate osteosynthesis and bone healing. Understand the principles of extraoral cranial fixation. Be able to carry out these procedures safely and competently or understand the need to refer to allied disciplines.</i></p>	
Knowledge	<p>BASIC Should demonstrate knowledge of :</p> <ul style="list-style-type: none"> - anatomy of scalp, face, nose, ears, eyelids, orbit and contents - anatomy of craniofacial skeleton and temporomandibular joint (TMJ) - anatomy and physiology of parotid and lacrimal apparatus - bone healing - aetiology of facial trauma - priorities of management - assessment of airway and level of consciousness (Glasgow coma scale) - assessment of head injury 	

	<ul style="list-style-type: none"> - and cranial nerve function - pharmacology and therapeutics of post-operative analgesia <p>INTERMEDIATE Should demonstrate knowledge of :</p> <ul style="list-style-type: none"> - anatomy of trigeminal nerve and infiltration / nerve block anaesthesia - signs and symptoms of fractures of cranium and facial skeleton - signs and symptoms of TMJ dislocation and fracture dislocation - other fracture complexes - classification of fractures of the craniofacial skeleton - appropriate investigations of facial nerve and duct injury - appropriate investigations of lacrimal apparatus injury - significance of dental occlusion - importance of disruption of the canthal ligaments <p>ADVANCED Should demonstrate knowledge of :</p> <ul style="list-style-type: none"> - physiology of nasal cavity, sight and oculomotor function - classification of craniofacial fractures - potential complications of cranial, nasal, orbital, middle-third and mandibular fractures - available open and closed techniques of surgical management including intermaxillary fixation - principles of nerve repair and stenting of ducts - - understanding the benefits and indications of both open and closed treatments - surgical approaches to the orbit - awareness of need for urgent orbital decompression or release of ocular muscles - available techniques/materials for orbital wall reconstruction 	
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	<ul style="list-style-type: none"> - potential complications early / intermediate and late - role of the maxillofacial technician 	
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - undertake general assessment of the traumatised patient - airway management and emergency treatment of facial trauma - assessment and examination of patient with facial trauma - awareness of additional factors affecting timing of surgery <p>INTERMEDIATE Should demonstrate ability to :</p> <ul style="list-style-type: none"> - assess the nasal bones, cartilages and septum - assess the orbits and contents and ears - assess dental occlusion - perform clinical examination of ears, orbit, eyelids and lacrimal apparatus, teeth, oral cavity, facial skeleton and cranial nerves - ability to correctly interpret physical signs - arrange investigations, selection and interpretation of relevant radiographic imaging of craniofacial fractures - manage epistaxis and septal haematoma - formulate a treatment plan and prioritise management - exercise clinical judgment appropriate to injury and patient needs - liaise as appropriate with Ophthalmology, Oral and Maxillofacial and Neurosurgery colleagues where appropriate <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - manage frontal sinus fractures 	

	<ul style="list-style-type: none"> - assess need for removal of damaged teeth/retained roots - prescribe appropriate pain control /prevention of infection - perform local anaesthetic infiltration for pain control / nerve block anaesthesia 	
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - intra/extra-oral soft tissue handling and suturing techniques <p>INTERMEDIATE Should be able to perform :</p> <ul style="list-style-type: none"> - surgical repair of nerve injury under magnification - techniques of intermaxillary fixation - techniques for approach to the orbital walls <p>ADVANCED Should be able to perform :</p> <ul style="list-style-type: none"> - manipulation of nasal bones and septum - nasal packing and splintage - ability to stent and repair duct - techniques for management of displaced canthal ligaments - safe exposure of fracture sites and reduction of fragments - plate handling skills - selection and use of appropriate allograft materials - bone grafting (variety of donor sites) - approach and expose frontal bone fractures 	<p>Desirable Fracture fixation (facial skeleton) Techniques including application plate and screws</p>

Ear Reconstruction

Topic	Ear reconstruction	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module	Ear deformities and ear reconstruction	
Objective	<i>Competence in the diagnosis and principles of management of all aspects of ear deformities and ear reconstruction</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - anatomy and embryology of the external, middle and inner ear, - pathophysiology of skin and cartilage wound healing, soft tissue tumours of the ear including haemangioma, problem scarring including keloid and principles of management of scarring, - various classifications of ear deformities including acquired ear deformities <p>INTERMEDIATE Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - principles of osseointegration, - local and regional flaps around the ear including the scalp, - development of the mandible and syndromes associated with ear deformities, - different techniques of correcting the prominent ear - principles of tissue expansion. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - various techniques of reconstructing microtia, macrotia, complex ear deformities such as constricted ears, sports induced trauma, different techniques of ear reconstruction following partial/total loss, with and without cartilage loss, timing of microtia surgery, - techniques to correct ear lobe deformities. 	
Clinical Skills	<p>BASIC Should demonstrate ability to undertake</p> <ul style="list-style-type: none"> - clinical assessment of the ear and identifying 	

	<p>anatomical variations from the norm.</p> <ul style="list-style-type: none"> - clinical assessment of problem scarring and soft tissue tumours and formulating a plan of management. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - differentiate and classify the various ear deformities and identify the anatomical deficiencies or variations of the ear, - plan surgical procedures for prominent ear, cryptotia, deformities of the ear with minimal loss of the auricular tissue 	
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - excision of simple accessory auricles, cysts and small tumours on the ear with direct closure or skin grafting, intralesional steroid injection, - repair of split earlobes with local flaps, - repair of simple lacerations of the ear with or without cartilage repair, - excision of Darwen's tubercle. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - correction of prominent ear with and without cartilage mutilation. 	<p>Desirable Aesthetic surgery – rhinoplasty / pinnaplasty Autogenous ear reconstruction</p>

Genitourinary Reconstruction

Three modules:

1. Hypospadias and allied conditions.
2. Epispadias, female genital anomalies, ambiguous genitalia and perineal reconstruction.
3. Gender reassignment.

The management of the conditions described in Module 2 & 3 is highly specialised and specific exposure to the skills needed is limited to a few specialist units.

Topic	GENITOURINARY RECONSTRUCTION
Category	ST3-6 Intermediate Years
Module 1	Hypospadias and allied conditions
Objective	<i>Acquire competence in the principles of management of hypospadias and allied conditions including management of the family in addition to all aspects of the surgical management and complications.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - embryology of the external genitalia, endocrinology pathology, anatomy of the male genitalia, - wound healing, - aetiological factors, - investigations, - management of the family. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - classification of hypospadias, - classification of surgical procedures, - surgical techniques available for correction of hypospadias - cause and management of ventral curvature - timing of surgery - management of foreskin - principles of surgical management, post operative management and complications

<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess presence and severity of hypospadias, presence of ventral curvature. - asses whether foreskin is suitable for reconstruction - manage the child/family unit so that all are comfortable with the reconstructive process - discuss the pro/cons of timing of surgery and reasons for operating <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess which operative technique is appropriate for the degree of deformity. - assess the child with foreskin anomaly
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - circumcision. - artificial erection test <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - meatotomy. - trimming of skin envelope following hypospadias repair. - closure of GAP hypospadias repair. - foreskin reconstruction. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - Snodgrass repair – dissection, closure of urethra, raising and inset of waterproofing layer, closure. - Snodgraft repair – dissection, inset of graft, and closure as above. - 2nd stage Bracka – dissection and closure

Topic	GENITOURINARY RECONSTRUCTION
Category	ST3-6 Intermediate Years
Module 2	Epispadias, Anomalies of Female Genitalia, Ambiguous Genitalia and Acquired Perineal Defects
Objective	<i>Acquire competence in the principles of management of epispadias, anomalies of female genitalia, ambiguous genitalia and acquired perineal defects.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of epispadias/bladder extrophy, incidence, aetiology, MDT principles of management. - defects of female genitalia – congenital/acquired. - <u>Congenital</u>. Aims of surgical correction – restoration of urinary / faecal and sexual function. - age at presentation. - <u>Acquired</u> - causes – tumour, infection, trauma, previous DXT, scarring secondary to birth tear / episiotomy. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - epispadias – aims of management, principles of treatment, principles of two main surgical repairs. - female genitalia – congenital absence of vagina (Meyer-Rokitansky Syndrome), incidence, presents with primary amenorrhoea diagnostic test, principles of reconstruction – length, width vagina, durability, sensation. - male genitalia reconstruction in Fournier’s disease, cancer, trauma, vascular malformation, BXO with emphasis on preservation of adequate length, sufficient skin for unrestricted erection, durability and sensation, preservation of erection and adequate urinary stream. - skin – SSG. - scrotum – SSG, Flaps. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - Methods of female reconstruction post acquired defect – local pedicled flaps – lotus, gracillis, SSG, muscle flaps – gracillis myocutaneous flaps, distant flaps – VRAM. - Male reconstruction post acquired defects. - Urethra – 2 stage Bracka with BUMG with or without bladder mucosa grafts. - Glans – glansectomy and quilted thick SSG for reforming glans over existing corpora. - Scrotum – tissue expansion, SSG, flaps – gracillis, Singapore technique.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - arrange appropriate investigations for conditions described in this module, - perineal defects including assessment of patient with Fournier’s and initial management, identification of potential defect following resection of perineal tumour. <p>INTERMEDIATE</p>

	Should be able to plan primary flaps for reconstruction of perineal defect e.g. lotus, gracillis, VRAM
Technical Skills and Procedures	BASIC Should be able to perform <ul style="list-style-type: none"> - SSG, full thickness graft, jumping man, application of topical negative pressure dressing.

Topic	GENITOURINARY RECONSTRUCTION
Category	ST3-6 Intermediate Years
Module 3	Genital Reassignment
Objective	<i>Acquire competence in the principles of management of gender reassignment.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - definition of transsexualism. - aetiology sex ratio - diagnosis of gender dysphoria - MDT. - Requirement for NHS Management: <ol style="list-style-type: none"> 1. Live as other gender for two years 2. Hormones 3. Surgery <p>INTERMEDIATE Should demonstrate knowledge of techniques available for male to female reassignment:</p> <ul style="list-style-type: none"> - penile flap – glans reduced as clitoris, penile skin as flap for vagina, scrotum for labia / clitoral hood – usually two stage - modified McIndoe – SSG or FTSG from penis for vagina. - others – bowel for vagina <p>ADVANCED Should demonstrate knowledge of techniques available for female to male reassignment</p> <ul style="list-style-type: none"> - mastectomy. - phallus construction with internal urethra and ability to become erect, non hair bearing, sensate, size, erectability and arousability by deep pudendal nerve. Specific options for phallus reconstruction <ul style="list-style-type: none"> - random pattern abdominal tube pedicle - groin flap - SIEA flap - gracillis flap - radial forearm flap - urethral reconstruction options, <ul style="list-style-type: none"> - SSG - FTSG - transplantation of urethra - tubed bladder wall - ancillary procedures <ul style="list-style-type: none"> - testicular implants - vaginectomy - facial feminising techniques - breast augmentation

Clinical Skills	<p>BASIC</p> <p>Ability to demonstrate</p> <ul style="list-style-type: none"> - working within an MDT and the ability to assess the psychological state of the patient
Technical Skills and Procedures	<p>BASIC</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> - raising local flaps - assessment of size of prosthesis needed - insertion of testicular prosthesis.

Hand Surgery

Module 1 Skin / Soft tissue / Microsurgery / Dupuytren's Disease

Module 2 Fractures and Joint Injuries including Wrist Instability

Module 3 Osteoarthritis and Inflammatory Arthritis

Module 4 Tendon and tendon-related disorders

Module 5 Nerve and nerve-related disorders

Module 6 The Child's Hand, Vascular Disorders and Tumours

Topic	HAND	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 1	Skin / Soft tissue / Microsurgery / Dupuytren's Disease	
Objective	<i>Acquire competence in the diagnosis and management of soft tissue problems around the hand and upper limb including traumatic loss. Acquire competence in all aspects of care of Dupuytren's disease.</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy, embryology, physiology of skin, blood supply and blood flow, - models of skin blood supply - mechanism of action of pharmacology on the microcirculation, - elements of wound healing, - organisms causing soft tissue infection including, microbiology of infecting organisms, surgical pathology and spread of infection, - surgical and pathological anatomy of Dupuytren's disease in the palm and digits. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - range, indications and principles of operations to treat conditions listed in this module, - post-operative complications and their management, - hand therapy interventions for wound & scar management, reduction of swelling and management of stiffness, - levels of amputation for the upper limb, - principles of microvascular surgery, - principles of replantation including 	

	<p>macroplantation. - sciences of pathogenesis of Dupuytren's disease.</p> <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - recent advances in wound healing including wound healing technology such as vacuum-assisted closure, - ancillary investigations including those pertinent to vascular compromise of limb, life or limb-threatening infections, - techniques to raise vascularised free tissue transfers including lateral arm flap, latissimus dorsi flap, gracilis flap, toe transfer, - management of the mutilating hand injury including rollover injury, gunshot injury, - management of extravasation and high-pressure injection injury to the hand. - management of thermal injury to the hand including local treatment of scald, flame, chemical & electrical burns and frostbite, 	
<p>Clinical Skills</p>	<p>BASIC Should perform</p> <ul style="list-style-type: none"> - assessment and non-operative management of the acute surgical patient including targeted hand-related history and hand examination. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - devise management algorithms for the conditions covered in this section including investigations. <p>ADVANCED Should demonstrate abilities of</p> <ul style="list-style-type: none"> - analysis and diagnostic synthesis, judgement, surgical planning. 	
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - nail bed repair, - different types of skin grafts including split skin/full thickness skin graft, - palmar fasciectomy for Dupuytren's disease, - fasciocutaneous flaps around the forearm. - variety of flap reconstructions, - local flap (transposition, rotation, island), 	<p>Strongly recommended Microsurgery simulation</p> <p>Desirable Flap elevation</p>

	<ul style="list-style-type: none"> - microsurgical techniques - arterial and venous repair – small and medium vessels <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - fingertip reconstruction : heterodigital flap reconstruction including cross-finger flap, thenar flap, Foucher flap, and homodigital neurovascular island flaps - application of mechanical vacuum suction device for appropriate wounds, - debridement of complex wounds, - fasciectomy for MCPJ contracture (Dupuytren’s disease), - fasciectomy with correction of PIPJ contracture. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - planning and execution of flap reconstruction <ul style="list-style-type: none"> - distant flap e.g. groin, posterior interosseous artery flap, radial forearm flap - free tissue transfer – flap elevation, - elevation of variety of free tissue transfers e.g. lateral arm flap, latissimus dorsi muscle flap, second toe transfer etc., - microsurgical techniques <ul style="list-style-type: none"> - microsurgical free tissue transfer - revascularisation digit or upper limb part - fasciectomy for recurrence of Dupuytren’s disease. 	
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Topic	HAND	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 2	Fractures and Joint Injuries including Wrist Instability	
Objective	<i>Acquire competence in the diagnosis and management of all types of fractures of the phalanges, metacarpals, carpus and distal radius. Acquire competence in the diagnosis</i>	

	<i>and management of the unstable wrist including distal radioulnar joint.</i>	
Knowledge	<p>BASIC Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - pathophysiology of fracture healing including non-union and malunion, - principles of operative and non-operative management of hand and wrist fractures, - anatomy of radio-carpal/DRUJ/MCP/PIP/DIP joints and CMC joint of the thumb - ligamentous anatomy of these joints and how it influences treatment - available imaging techniques and their interpretation: <ul style="list-style-type: none"> - plain and stress radiographs of the wrist and hand. - other specific views relevant to particular situations <p>INTERMEDIATE Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of management of fractures and dislocations of bones and joints of hand and wrist including carpus and distal radioulnar joint. 	
Clinical skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess fractures, dislocations and ligamentous injuries of the hand and wrist, - assess the unstable wrist, - manage common fractures of the hand and wrist, - apply a range of plaster splints. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - manage more complex fractures of the hand and wrist, 	
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - closed reduction metacarpal and phalangeal fractures with application splint or cast <p>INTERMEDIATE</p>	<p>Strongly recommended Fracture fixation Techniques including K-wiring and interosseous wiring, application plate and screws, and lag screws</p>

	<p>Should be able to perform</p> <ul style="list-style-type: none"> - closed K-wiring for: <ul style="list-style-type: none"> CMC/PIP joint dislocations phalangeal/metacarpal fractures distal radius fractures (pins & plaster) - open fixation of metacarpal fractures, - repair of ulnar collateral ligament of MCPJ of thumb (Gamekeeper's thumb). <p>ADVANCED</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> - open fixation of phalangeal fractures. 	

Topic	HAND	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 3	Osteoarthritis and Inflammatory Arthritis	
Objective	<i>Acquire competence in the principles of diagnosis and of osteoarthritic joints of the hand and wrist. Acquire competence in the principles of diagnosis and of inflammatory joints of the hand and wrist.</i>	
Knowledge	<p>BASIC</p> <p>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - pathophysiology of osteoarthritis, inflammatory arthritis and septic arthritis including appreciation of patterns of disease - pharmacology for the medical treatment of these disorders - imbalances and deformities associated with inflammatory arthritis - pathomechanics of common rheumatoid hand deformities including: <ul style="list-style-type: none"> distal radioulnar joint subluxation and carpal translocation MCPJ subluxation and ulnar drift digital boutonnière and swan neck thumb deformity and CMC disease - principles of arthroplasty. 	

	<p>INTERMEDIATE Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles and detailed management of the common osteoarthritic disorders of the hand and wrist including the basal joint of the thumb, - principles and detailed management of rheumatoid arthritis in the hand and wrist, - aetiology, pathomechanics of deformity in inflammatory arthritides including understanding disease patterns, - place of soft tissue reconstruction, joint fusion, replacement, interposition and excision arthroplasty in the treatment of the rheumatoid hand and wrist, - planning and prioritising treatment within an MDT setting. 	
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess the arthritic patient and recognise the typical patterns of disease, - demonstrate conservative management techniques including splinting, exercises and understanding of occupational therapy assessment and provision of aids to daily living, - undertake external K-wire removal. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - undertake detailed examination of the patient with inflammatory arthritis to demonstrate the features of: distal radioulnar joint subluxation and carpal translocation MCPJ subluxation and ulnar drift digital boutonnière and swan neck thumb deformity and CMCJ disease 	
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - harvesting of iliac bone graft / radius bone graft, <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - arthrodesis of DIPJ / PIPJ/ MCPJ, 	Desirable Injection techniques - soft tissues and joints

	- trapeziectomy plus/minus soft tissue ligamentous reconstruction,	
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Topic	HAND	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 4	Tendon and tendon-related disorders	
Objective	<i>Acquire competence in the diagnosis and management of all aspects of flexor and extensor tendon injuries and associated reconstruction. Detailed knowledge of the hand therapy and rehabilitation regimens for the same.</i>	
Knowledge	<p>BASIC Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - mechanisms of tendon injury and healing, - pathophysiology of related tendon disorders. <p>INTERMEDIATE Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of tendon transfer, - biomechanics of the tendons and tendon sheath / pulleys, - available suture techniques for repair of the divided tendon including multistrand repair, - rehabilitation regimens for flexor and extensor tendon repair. <p>ADVANCED Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - recent advances in basic sciences of tendon injury and repair, - basic science and evidence base informing use of different techniques of tendon repair and rehabilitation regimens, - the role of the intrinsic muscles in facilitating co-ordinated tendon function. 	
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess the injured tendon and other tendon disorders, 	

	<ul style="list-style-type: none"> - select use of relevant specialist imaging techniques such as ultrasound. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess and manage algorithms for the conditions covered in this module, - examine the stiff finger and distinguish flexor/extensor adhesions / primary or secondary joint stiffness. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - undertake detailed assessment of and advise on complex tendon problems including reconstruction - analyse and advise on modifications needed to standard therapy regimens to correct specific problems such as joint contracture. 	
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - extensor tendon repair - flexor tendon repair (Zones III-V) - tendon graft harvest -extensor / flexor synovectomy -trigger digit release <p>INTERMEDIATE Should be able to perform:</p> <ul style="list-style-type: none"> - De Quervain's release - flexor tendon repair (multistrand)(Zones I & II) - flexor or extensor tenolysis - tendon transfer (EI-EPL) - tenodesis (EDC replacement in partial EDC rupture) 	Strongly recommended Hand trauma - Tendon repair (flexor/extensor)

Topic	HAND	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 5	Nerve and nerve-related disorders	
Objective	<i>Acquire competence in the diagnosis and management of all aspects of nerve related disorders including nerve compression, nerve palsy and nerve injuries along with associated reconstructive techniques. Acquire</i>	

	<i>knowledge of the rehabilitation regimens for the same.</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - topographic anatomy of peripheral nerve including brachial plexus, - response of peripheral nerve to injury and repair, - pathophysiology of nerve compressive disorders. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - techniques of nerve repair, - mechanisms of brachial plexus injury, the patterns of injury and outline treatment options, <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - pathophysiology and classification of CRPS and neuropathic pain problems. - pharmacological and non-pharmacological methods for the relief of nerve-related pain problems. 	
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess nerve-related disorders including brachial plexus, - apply relevant specialist imaging techniques such as electrophysiological investigation and ultrasound, - prevent iatrogenic nerve injury. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - clinical assessment and management algorithms for the conditions covered in this module. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess and advise on reanimation of the hand in cases of tendon loss and nerve palsy using specific tendon transfers. 	
Technical Skills and Procedures	<p>BASIC Should be able to perform:</p> <ul style="list-style-type: none"> - peripheral nerve repair including digital nerve - nerve graft harvest - carpal tunnel release - cubital tunnel release (simple decompression) 	Strongly recommended Microsurgical skills - nerve repair techniques

	<p>INTERMEDIATE</p> <p>Should be able to perform:</p> <ul style="list-style-type: none"> - nerve grafting for segmental nerve defect 	
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Topic	HAND
Category	ST3-6 Intermediate Years
Module 6	The Child's Hand, Vascular Disorders and Tumours
Objective	<p><i>Acquire overall competence in the diagnosis and management of children's hand problems with emphasis on congenital hand conditions.</i></p> <p><i>Acquire competence in the management of vascular disorders and neoplastic conditions of the upper limb in both children and adults. Demonstrate knowledge of the aetiology, classification, risk factors and surgical management of these conditions.</i></p>
Knowledge	<p>BASIC</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of management of children's hand disorders including classification, reconstructive principles and timing of operations for congenital difference, - embryology of the upper limb and the mechanisms of malformation, - patterns of normal growth and development, - management of vascular injury including compartment syndrome, - principles of management of soft tissue and bony tumours particularly the more common swellings found around the hand., - principles of management of upper limb tumours with reference to surgical oncology including biopsy techniques, excision margins, management of regional lymph nodes, formal amputations. <p>INTERMEDIATE</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - the following conditions of the Child's Hand: trigger digits, polydactyly including thumb duplication, simple syndactyly, epiphyseal injury (Salter Harris) - management of vascular insufficiency syndromes, - haemangiomas and vascular malformations, - management of soft tissue and bony tumours including formal amputations, reconstructions, - principles of management of skin cancer occurring in the upper limb and management of the regional lymph nodes. <p>ADVANCED</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - the following conditions of the Child's Hand: complex syndactyly (e.g. Apert's hand) radial dysplasia (radial club hand), thumb hypoplasia - constriction band syndrome - Volkmann's ischaemic contracture

<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess and deliver non-operative management of the Child's Hand disorder, - in respect of cancer diagnoses demonstrates the skill set necessary to advise a patient of such diagnosis. - work and communicate within the relevant multidisciplinary team (MDT) <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - apply a working knowledge of the management algorithms to the conditions covered in this module. <p>ADVANCED Should demonstrate</p> <ul style="list-style-type: none"> - skills of analysis and diagnostic synthesis, judgement, and surgical planning. - in respect of the Child's Hand, the ability to advise regarding timing of reconstruction and effect of growth on reconstructive surgery previously performed, - in respect of vascular disorders shows the ability to advise regarding conservative, non-surgical and surgical treatment options.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - surgery for uncomplicated traumatic conditions of the Child's Hand, - excision of small superficial vascular malformations, - ganglion excision (dorsal wrist, volar wrist, DIPJ) - safe biopsy for suspected tumours of the upper limb <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - trigger thumb/finger release simple syndactyly separation correction of duplicate thumb correction of polydactyly - fasciotomies for compartment syndrome, - axillary lymphadenectomy

Head & Neck Surgery

The modules are as follows:

1. Basic Sciences
2. Skin related neoplasia of the head & neck
3. Non-skin related neoplasia of the head & neck
4. Reconstruction of the head & neck
5. Reconstruction of specific head & neck sites
6. Facial Reanimation

Topic	Head & Neck Surgery
Category	ST3-6 Intermediate Years
Module 1	<p>Basic Sciences – embryology, development, anatomy and physiology</p> <p>Head & Neck assessment – examination, investigations including imaging and biopsy techniques.</p>
Objective	<p><i>To understand the development, anatomy and physiology of the head and neck in relation to its surgery</i></p> <p><i>Competence in the diagnosis, use of imaging and management of head and neck disorders</i></p>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - embryology of head & neck. - topographical and segmental anatomy of the head & neck. - vascular, neuronal and lymphatic supply / drainage of the head & neck. - appropriate use of diagnostic imaging - aesthetic units of the face and neck <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - range, indications and principles of surgical options for surgical ablation of tumours of the head & neck. - range, indications and principles of surgical options for soft tissue defect reconstruction of the head & neck. - range, indications and principles of surgical options for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips) - concepts and limitations of diagnostic techniques - aetiology and assessment of facial palsy - assessment of facial aesthetics - role and use of the head & neck MDT <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - factors determining appropriate surgical ablation techniques - factors determining decision making in choice of flaps and tissue for

	<ul style="list-style-type: none"> - soft tissue defect reconstruction - factors determining decision making in choice of flaps and tissue for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips). - indications and principles of surgical options and non-operative techniques in facial reanimation.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take a focused head & neck history related to any head & neck symptom - assess and non-operatively manage acute injury - recognise life-threatening injuries of the airway and major blood vessels - undertake competent examination of the head & neck. - undertake competent examination of cervical lymph nodes. - record diagnostic findings accurately - organise discussion of cases at head & neck MDT meetings. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - interpret significance of cytological and histological biopsy reports - interpret CT and MRI scans of the head and neck.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - airway management with the skill detailed in ATLS - circulatory support with the skills detailed in ATLS - free-hand and ultrasound guided lesion FNA of the head & neck - free-hand and ultrasound guided core biopsy of the head & neck <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - surgical incision / excision biopsy of intra-oral lesions

Topic	Head & Neck Surgery	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 2	Skin-related neoplasia of the head & neck	
Objective	<i>Competence in the diagnosis, assessment and management of all types of skin related cancer of the head and neck.</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - epidemiology - histological classification (BCC / SCC / Melanoma / adnexal) - staging of skin cancer - prognostic factors (tumour and patient-related) and 	

	<p>implications for patient treatment recommendations</p> <ul style="list-style-type: none"> - principles of screening programmes within a population. - NICE guidelines in treatment of non-melanoma skin cancers - understanding the MDT - knowledge of reconstructive options <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - indications for non-surgical treatment - adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies particularly for melanoma. - cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis - palliative treatment options for skin cancer. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - association between specific high risk benign skin conditions with associated increased skin cancer risk 	
<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focused skin-related history, eliciting factors associated with benign and malignant skin neoplasia - undertake competent head & neck examination - examine for head & neck lymphadenopathy - initiate appropriate investigations - undertake pre-op. skin prep and draping and prescribe antibiotic prophylaxis - work effectively within the skin cancer multidisciplinary team. 	

	<p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess and manage patients presenting with locally advanced disease - interpret CT, MRI & PET scans, - recognise where further pathology or imaging studies may be required and request these appropriately, - develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues. <p>ADVANCED Should demonstrate skills of</p> <ul style="list-style-type: none"> - communication of a cancer diagnosis with patients. 	
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - incision biopsy of lesion - excision biopsy of lesion - FNA / core sample of lymph node - Lymph node sampling [in centres where SNB not available] - local flap reconstruction (rotation / transposition / advancement) - split and full thickness skin grafts. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - sentinel lymph node biopsy, dual modality and blue dye only - selective / modified radical neck dissection. 	Desirable Skin cancer excision and reconstruction

Topic	Head & Neck Surgery
Category	ST3-6 Intermediate Years
Module 3	Non skin-related neoplasia of the head & neck
Objective	<i>Competence in the diagnosis, assessment and management of all types of non-</i>

	<i>skin related cancer of the head and neck.</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - epidemiology - types of cancer – oral cavity, nasopharynx, oropharynx, larynx, - reconstructive options - TNM Staging of skin cancer - prognostic factors (tumour and patient related) and implications for patient treatment recommendations - cancer network guidelines in treatment of non-skin cancers of the head & neck - understanding the MDT 	
	<p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - indications for non-surgical treatment - adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies. - cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis. - palliative treatment options for head & neck cancer. - hospice care 	
	<p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - specific high risk benign skin conditions with associated increased skin cancer risk 	
Clinical Skills	<p>BASIC Should to be able to</p> <ul style="list-style-type: none"> - take focused history related to non-skin tumours of the head & neck eliciting relevant factors, - undertake competent head & neck examination particularly of oral cavity, pharynx and larynx - undertake competent examination of head & neck lymphadenopathy - initiate appropriate investigations - work effectively within the head and neck cancer multidisciplinary team. 	
	<p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess and manage patients presenting with locally advanced disease, - interpret CT, MRI & PET scans, - develop and record management plan for the patient and discuss 	

	<p>rationale for management of common scenarios with patients and colleagues.</p> <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - discuss a cancer diagnosis with patients. 	
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - incision biopsy of lesion (oral cavity / pharynx / larynx) - excision biopsy of lesion (oral cavity / pharynx / larynx) - FNA / core sample of cervical / parotid lymph node - local flap reconstruction (rotation / transposition / advancement) - examination under anaesthesia <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - selective / modified radical neck dissection - regional flaps 	

Topic	Head & Neck Surgery	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 4	Techniques for reconstruction of the head & neck	
Objective	<i>Acquire competence in the planning, execution and management of appropriate soft tissue reconstruction of head & neck defects.</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - classification of flaps (random versus axial / muscle flap - Mathes and Nahai classification / type of tissue being transferred) - factors affecting outcome in flap surgery (patient related, operative, adjuvant therapy related), - principles of flap surgery (replace "like with like", reconstructive units, back-up plan and "life boat", donor site considerations) 	

	<ul style="list-style-type: none"> - principles of microsurgery - anatomy of perforators and angiosomes – relevant to planning of local, regional and distal flaps - anatomy of local, regional and free flaps suitable for head & neck reconstruction - advantages and disadvantages of local, regional and free flaps in the head & neck - appropriate use of local, regional and free flaps in the head & neck <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - relevant surgical anatomy and neurovascular supply of flaps used in head & neck reconstruction - complications of autologous tissue reconstruction including donor site morbidity - post-operative flap monitoring techniques - airway management of the head & neck - planning and prioritising treatment within the head & neck MDT setting. 	
<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focused history eliciting factors important for decisions regarding suitability / type of reconstruction - clinically assess the soft tissue defect - keep contemporaneous and appropriate record, - demonstrate simple management techniques including use of appropriate dressings - plan both local and free flaps appropriately for defect - co-ordinate soft tissue reconstruction in conjunction with ablative team <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - counsel patient regarding 	

	<p>advantages and disadvantages of reconstruction - specifically setting realistic expectations, reconstruction as a process, template in-patient stay and complications,</p> <ul style="list-style-type: none"> - take informed consent and participate in joint decision-making. - manage patients in post-operative period, - manage complications of surgery applicable to the clinic setting. - use psychological assessment tools for evaluation of psychological needs (patient questionnaires). 	
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - exposure of vessels - positioning of patient on operating table - protection of pressure areas - prevention of nerve injuries / neurapraxia - skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis. - selection / arrangement of appropriate level of post-operative care. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - pre-operative marking of patient - harvesting vein graft <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - microvascular anastomoses 	<p>Strongly recommended Microsurgery skills</p> <p>Desirable Flap elevation</p>

Topic	Head & Neck Surgery	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 5	Reconstruction of specific head and neck sites	

Objective	<i>Acquire competence in the planning, execution, management and reconstruction of specific head and neck sub-units including eyelids, nose, lips, ears and scalp.</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of tissues suitable for planning of local, regional and distal flaps to specific sites in the head & neck, - vascular anatomy relevant to planning of local, regional and distal flaps to specific sites in the head & neck, - recognise the appropriate use, advantages and disadvantages of local, regional and free flaps in reconstruction of specific sites in the head & neck - factors affecting outcome in flap surgery (patient-related, operative, adjuvant therapy-related). <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - airway management of the head & neck - ability to interpret angiographic abnormalities when planning reconstruction of specific sites in the head and neck, - pre-operative investigations for specific flaps, - complications of autologous tissue reconstruction including donor site morbidity, - post-operative flap monitoring techniques, - planning and prioritising treatment within the head & neck MDT setting. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - assessment of outcome, - effects of radiotherapy 	
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focused history eliciting factors important for decisions regarding suitability / type of reconstruction for a specific head and neck site - clinically assess specific head and neck defects - keep contemporaneous and appropriate records 	

	<ul style="list-style-type: none"> - effect simple wound management techniques including use of appropriate dressings - plan both local, regional and free flaps appropriate for specific defect - demonstrate soft tissue reconstruction in conjunction with ablative team <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - discuss advantages and disadvantages of reconstruction - specifically setting of realistic expectation, reconstruction as a process, template in-patient stay and complications, - take informed consent and joint decision making, - manage complications of surgery in pre, peri and post-operative phases. 	
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - exposure of vessels, - positioning of patient on operating table, - protection of pressure areas, - prevention of nerve injuries / neurapraxia, - skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis regimens - selection / arrangement of appropriate post-operative care <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - pre-operative marking of patient, <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - microvascular anastomoses. 	<p>Strongly recommended Microsurgery skills</p> <p>Desirable Flap elevation Forehead flap reconstruction</p>

Topic	Head & Neck Surgery	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 6	Facial Reanimation	
Objective	<i>Competence in the diagnosis of facial palsy and management by both static and dynamic procedures as well as</i>	

	<i>non-surgical treatments.</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - epidemiology, - anatomy of the facial nerve, - aetiological causes of facial palsy, - prognostic factors and implications for patient treatment recommendations, - range of reconstructive options <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - non-surgical treatments (Botox, biofeedback, electrical stimulation of facial musculature), - static sling procedures (tendon, fascia, artificial), - dynamic sling procedures (temporalis, masseter), - principles of facial nerve reconstruction (direct suturing, nerve grafting, cross facial nerve grafting). <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - free muscle transfer techniques (cross facial nerve grafting, gracilis, pectoralis minor, rectus abdominis), - reconstructive aesthetic techniques (endoscopic browlift, facelift, upper & lower blepharoplasties), 	
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focused facial nerve related history eliciting factors localising site of injury, - undertake competent facial nerve examination , - initiate appropriate investigations (CT, MRI, EMG, nerve conduction studies). <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - interpret CT, MRI, EMG & nerve conduction studies, - develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues. 	

	<p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - undertake analysis and diagnostic synthesis, judgement and surgical planning pertinent to facial palsy, 	
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - exploration, protection and identification of facial nerve branches, - direct repair of facial nerve, - nerve grafting of facial nerve 	<p>Strongly recommended Microsurgery skills</p> <p>Desirable Nerve graft harvest</p>

Lower Limb Trauma

The modules are as follows:

1. Assessment and primary management lower limb injuries
2. Debridement, stabilisation and compartment syndrome.
3. Soft tissue reconstruction
4. Vascular injuries and amputation
5. Complications
6. Paediatric injuries and outcome measures

Topic	LOWER LIMB
Category	ST3-6 Intermediate Years
Module 1	Assessment and primary management lower limb injuries
Objective	<i>Acquire competence in the initial combined management of patients with open lower limb fractures in the emergency department.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - resuscitation principles as defined by ATLS. - applied anatomy, physiology, pathology and mechanisms of limb injury, blood supply of skin, fat and muscle, - angiosomes of lower limb - classification of open fractures, including Gustilo classification, - factors influencing fracture healing, - timing and rationale for antibiotic use and timing of initial debridement., - appropriate pre-operative investigations. - role of other members of team including microbiologists, physiotherapy, occupational therapy, - importance of specialist centres, MDT and interdisciplinary communication, especially with orthopaedic colleagues, <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - pathophysiology of degloving injuries and their classification. - management of specific injuries e.g. crush and degloving, - range, indications and principles of surgical options for soft tissue reconstruction: direct closure, skin graft, local and free flaps, - options of bone fixation, including internal versus external fixation. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - role of major trauma centres, - management of multiply injured patient, - factors determining decision making in choice of flaps and tissue for soft tissue reconstruction.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take a focused history for lower limb injury, - clinically assess and undertake non-operative management of acute injury,

	<ul style="list-style-type: none"> - recognise life-threatening injuries, - examine to including assessment of severity of injury, - assess vascular status, - assess for the presence of compartment syndrome. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - examine neurological status of limb, - apply the management algorithms pertinent to the conditions covered in this module. <p>ADVANCED Should be able to demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning pertaining to lower limb injury.</p>
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - application of appropriate dressings in emergency room, - reduction of fracture in emergency department, - application of a plaster cast. <p>INTERMEDIATE Should be able to measure compartment pressures and interpret results.</p> <p>ADVANCED Should be able to stabilise associated injuries and bleeding.</p>

Topic	LOWER LIMB
Category	ST3-6 Intermediate Years
Module 2	Debridement, stabilisation and compartment syndrome.
Objective	<i>Acquire competence in the debridement, stabilisation and assessment of wounds and the ability to make a surgical plan for future management. Management of compartment syndrome.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of fracture management, - anatomy of lower limb, - on-table imaging techniques and their interpretation, - safe access incisions, - the importance of tissue sampling, - temporary wound dressings, - pathophysiology of compartment syndrome. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of perforators, - principles and management of fractures and the relevance to subsequent soft tissue reconstruction, - monitoring and interpretation of results of raised compartment pressures <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of bone debridement.

Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess fractures clinically, - manage wounds in various locations on the lower limb, - apply plaster splints, - apply temporary dressings – negative pressure and antibiotic bead pouch, - measure compartment pressures. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - manage more complex fractures, - formulate treatment plan for degloving injuries, especially multiplanar degloving. <p>ADVANCED Should demonstrate ability to recognise those injuries that would benefit from primary amputation.</p>
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - appropriate pre-wash and prep, - systematic wound debridement under tourniquet control, - wound extension along fasciotomy lines, - application of temporary dressing. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - identification of tissues that can be preserved, - adequately debride injured soft tissues to achieve a stable wound approaching elective conditions, - release four muscle compartments in leg in cases of compartment syndrome, - intraoperative planning of future soft tissue reconstruction in conjunction with orthopaedic team and ensure appropriate bone fixation to facilitate this. <p>ADVANCED Should be able to perform amputation of non-salvageable limbs</p>

Topic	LOWER LIMB	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 3	Soft tissue reconstruction	
Objective	<i>Acquire competence in the planning and execution of appropriate soft tissue cover of open tibial fractures</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of perforators and angiosomes – relevant to planning of local flaps, - zone of injury 	

	<ul style="list-style-type: none"> - anatomy of free flaps suitable for lower limb reconstruction with the advantages and disadvantages of each, and the appropriate use of each option. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - options available for fracture fixation and tailoring soft tissue management accordingly, - planning and prioritising treatment within an MDT setting. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of circular frames and bone transport, - controversies of fasciocutaneous versus muscle flaps for soft tissue coverage of open fractures. 	
<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess soft tissue defects demonstrating recognition of injury patterns, - use simple management techniques including use of appropriate dressings, - use appropriate antibiotics at definitive wound closure, - plan both local and free flap reconstruction appropriately for defect, - co-ordinate soft tissue reconstruction in conjunction with orthopaedic team. <p>INTERMEDIATE Should be able to</p> <ul style="list-style-type: none"> - plan management algorithms for the common injuries covered in this module, - plan logical step-by-step planning of complex cases in conjunction with orthopaedic surgeons. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - plan management algorithms for the injuries covered in this module including complex injuries, - plan management and reconstruction for the more complex soft tissue defect in patients requiring distraction lengthening of the skeleton. 	

Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - direct closure, - skin graft, - temporary dressings – negative pressure and antibiotic bead pouch.. 	<p>Strongly recommended Microsurgery skills</p> <p>Desirable Flap elevation Nerve / vein / bone graft harvest</p>
	<p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - nerve repair (direct), - planning and raising appropriate fasciocutaneous flaps, both proximally and distally-based, - raising gastrocnemius muscle flap for proximal third/knee defects, - performing most steps in the raising and anastomosing of free flaps, - harvesting of vein graft, - exposure of recipient vessels in leg. 	
	<p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - raising and anastomosing ALT, LD and radial forearm free flaps under supervision, - nerve repair using sural nerve graft. 	

Topic	LOWER LIMB	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 4	Vascular injuries and amputation	
Objective	<p><i>Acquire competence in the diagnosis and management of all vascular injuries to the lower limb.</i></p> <p><i>Acquire competence in the recognition and management of patients requiring early and delayed amputations.</i></p> <p><i>Acquire understanding of the impact of amputation level on subsequent rehabilitation and detailed knowledge of the rehabilitation regimens for patients requiring amputation.</i></p>	
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of vasculature, including well-known variations e.g. peronea magna, - response of vessels to injury and repair, 	

	<ul style="list-style-type: none"> - primary management of vascular injuries and the devascularised limb, - appropriate use of investigations, - timing of surgery for acutely ischaemic limb, - indications for amputation and the levels, - rehabilitation of amputation patients. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - role of vascular shunts, - role of angiography, - techniques of vessel repair. 	
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - control bleeding. - interpret angiograms. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess and prepare management algorithms for the conditions covered in this module, - counsel a patient for limb amputation. 	Desirable Vein graft harvest
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - exposure of vessels, - insertion of shunts, - harvesting vein graft, - application of skin graft to amputation stump if required. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - vein graft for vascular injury, - uncomplicated transtibial amputation. 	

Topic	LOWER LIMB
Category	ST3-6 Intermediate Years
Module 5	Complications
Objective	<i>Acquire competence in the diagnosis and management of both bone and soft tissue complications and recognition of the need for multidisciplinary management.</i>
Knowledge	BASIC Should demonstrate knowledge of

	<ul style="list-style-type: none"> - consequences of infection following trauma and surgery, - complications of free flap surgery, - complications following the use of local flaps, - those complications which require referral to specialist centres. <p>INTERMEDIATE Should demonstrate knowledge of the management of all complications following soft tissue reconstruction including recognition of skeletal complications.</p> <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - basic science and evidence-base underpinning the management of complications, - orthopaedic principles of managing delayed union and non-union
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - undertake clinical assessment of complications and in particular recognise a compromised free or local flap, in conjunction with general patient parameters. - use relevant adjunctive techniques such as ultrasound. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - use a range of free flap monitoring techniques.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - washout of haematoma/collection. - application of leeches to flap tip with venous congestion. - simple debridement of non-viable flap and appropriate application of temporary dressing. <p>INTERMEDIATE Should be able to take back free flap to theatre with consultant assistance.</p> <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - salvage or amputation of limb following flap failure, - bone debridement in conjunction with orthopaedic surgeons. - raising flaps to assist orthopaedic team for skeletal revision surgery including cancellous bone graft

Topic	LOWER LIMB
Category	ST3-6 Intermediate Years
Module 6	Paediatric injuries
Objective	<i>Acquire competence in the diagnosis and management of children with lower limb injuries.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of management of children's injuries – skeletal and soft tissue – and appreciate differences from adults,

	<p>- normal growth and development, in particular the importance of growth plates,</p> <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - management of open lower limb injuries in children. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - management of paediatric lower limb injuries and the specific bone and soft tissue considerations needed with regard to growth, - controversies regarding paediatric open lower limb injuries,
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess the injured child, - communicate and liaise with parents, - work and communicate within the relevant multidisciplinary team (MDT), - recognise non-accidental injury. <p>INTERMEDIATE Should demonstrate ability to plan management algorithms for the paediatric patient with lower limb injury.</p> <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - use skills of analysis and diagnostic synthesis, judgement, and surgical planning.
Technical Skills and Procedures	<p>BASIC Should be able to stabilise the child with lower limb injury for safe transfer to specialist centre.</p> <p>INTERMEDIATE Should be able to perform primary debridement and application of temporary wound dressings in theatre.</p>

Oncoplastic Breast Syllabus

Modules:

1. Basic Sciences & Breast assessment
2. Breast cancer
3. Benign breast conditions
4. Reconstruction implant-based techniques
5. Reconstruction with autologous tissues
6. Aesthetic breast surgery

Topic	ONCOPLASTIC BREAST
Category	ST3-6 intermediate Years
Module 1	Basic Sciences – including embryology, development, anatomy, physiology and genetics, stem cell biology, biology of scarring and wound healing. Management of abnormal scars Breast assessment – examination, investigations : including imaging and biopsy techniques.
Objective	<i>Acquire competence in basic sciences pertinent to the breast and competence in clinical diagnosis and investigation</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - topographical and segmental anatomy of the breast, vascular neural and lymphatic supply / drainage of breast, anatomy of chest wall, abdomen and axilla, - lymphatic system physiology, - embryology of breast, - endocrine physiology and endocrine effects on the breast at puberty, pregnancy, lactation, menopause and in mastalgia, - effect of hormonal therapeutics on the breast (OCP, HRT, selective estrogen-receptor modulators & aromatase inhibitors) <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - developmental abnormalities - accessory nipples, accessory breast tissue - concept and limitations of triple assessment <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - breast aesthetics (including breast measurements), breast asymmetry, breast hyperplasia, hypoplastic breast syndromes including Poland's syndrome, chest wall deformities, associated limb abnormalities
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take a focused breast history related to any breast symptom, - examine the breast and axilla, - request component investigations of triple assessment, and ensure that results are discussed at breast MDT - accurately record diagnostic findings.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - free-hand and ultrasound guided lesion FNA

	<ul style="list-style-type: none"> - free-hand core biopsy, - punch biopsy of skin / nipple. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - surgical excision biopsy.

Topic	ONCOPLASTIC BREAST
Category	ST3-6 Intermediate Years
Module 2	Breast Cancer
Objective	<i>Acquire competence in the diagnosis, assessment and management of all types of breast cancer. Includes management of premalignant conditions of the breast and screening for breast cancer.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - epidemiology, histological classification and sub-types of invasive disease and DCIS, - staging of breast cancer (UICC – TNM) , - prognostic factors (tumour and patient-related) and implications for patient treatment recommendations Breast cancer MDT dataset. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - indications for primary medical therapy, - rationale for neo-adjuvant chemotherapy / endocrine therapy including evidence and limitations, - indications and contraindications for mastectomy and BCS and appropriate selection of axillary surgery (SLNB versus ALND), - oncoplastic techniques (therapeutic mammoplasty / IBR/SSM & NSM), - complications of surgery and their management, - adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies (NICE clinical guidelines 80 & 81), specifically common regimes, indications, complications and side effects and supporting evidence, - cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis, - palliative treatment options for breast cancer.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take a focussed breast history including presenting complaint, family history, elicit risk factors and identify co-morbidities important in treatment planning, - examine the breast, nodal basins and relevant distant sites where metastasis suspected, - initiate appropriate initial investigations as part of triple assessment, - recognise the importance of, and work effectively within, the breast multidisciplinary team. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - recognise uncommon presentations of breast cancer (Pagets disease, inflammatory carcinoma), - assess and manage patients presenting with locally advanced disease,

	<ul style="list-style-type: none"> - recognise where further mammographic views or MRI may be required and request these appropriately, - develop and record management plan for the patient and discuss rationale for management of common scenarios with patients in conjunction with dedicated Breast Care Nurse.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - appropriate pre-op skin prep and draping and antibiotic prophylaxis, - palpable excision biopsy, palpable wide local excision, - sentinel lymph node biopsy, dual modality and blue dye only, - node sample in centres where SNB not employed, - simple mastectomy <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - axillary lymph node dissection (level 3) both primary and delayed.

Topic	ONCOPLASTIC BREAST
Category	ST3-6 Intermediate Years
Module 3	Benign breast conditions
Objective	<i>Acquire competence in the diagnosis and management of benign breast conditions.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - pathophysiology and presentation of mastalgia, fibroadenoma, breast cysts, papilloma, benign nipple discharge, duct ectasia, periductal mastitis, mammary duct fistula and breast sepsis (lactational and non-lactational) including microbiology - Phylloides tumour, - gynaecomastia, - involutional change of the breast.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focussed breast history, eliciting factors associated with benign breast disease, - examine breast and axilla - examine systems associated with benign breast disease (endocrine, abdominal), - initiate appropriate investigations / triple assessment where indicated <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate management plan of benign breast pathology included in this module, - interpret investigation findings and understand how they differ from findings in malignant disease.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - free hand aspiration / surgical drainage of breast abscess, - aspiration of cyst,

	<p>- benign lump excision.</p> <p>INTERMEDIATE Should be able to perform</p> <p>- nipple eversion techniques.</p>
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Topic	ONCOPLASTIC BREAST
Category	ST3-6 Intermediate Years
Module 4	Reconstruction – Implant based techniques
Objective	<i>Acquire competence in implant based reconstruction including indications, technique and management of complications</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - indications and contraindications to implant based reconstruction, - surgical anatomy of implant / expander based reconstructive procedures, - alloplastic materials and tissue interface, - dermal xenografts. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - advantages and disadvantages in comparison to autologous based reconstruction, - range of devices available, - implant infection and management, - implant extrusion, - capsular contracture, - aetiology, classification, role of DXT and management, - historical development and controversies. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - staged procedures – single and two stage: advantages and disadvantages, - adjunctive biological technologies, - outcome of implant based reconstruction, - relevant literature
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess suitability for implant based reconstruction and alternatives, - identify pre-operative factors which can be optimized prior to surgery (smoking, systemic disease). <p>INTERMEDIATE Should demonstrate ability to consent patients describing full range of potential complications, and set realistic expectations.</p> <p>ADVANCED Should demonstrate ability to select appropriate implants / expanders for patients, recognise post-operative complications and formulate associated management plans.</p>
Technical Skills and	<p>BASIC Should be able to</p>

Procedures	<ul style="list-style-type: none"> - orient devices and prepare appropriately, - explain issues regarding antibiotics, drains, changing gloves, - use electric operating tables, - protect pressure areas, - prevent nerve injuries / neurapraxia. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - creation and closure of sub-pectoral pocket
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Topic	ONCOPLASTIC BREAST
Category	ST3-6 Intermediate Years
Module 5	Reconstruction – Autologous tissue based techniques
Objective	<i>Acquire competence in autologous tissue based breast reconstruction including indications, technique and management of complications.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - classification of flaps (random versus axial / muscle flap - Mathes and Nahai / type of tissue being transferred) - factors affecting outcome in flap surgery (patient related, operative, adjuvant therapy related), - principles of flap surgery (replace “like with like”, reconstructive units, back-up plan and “life boat”, donor site considerations), - principles of microsurgery. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - relevant surgical anatomy and neurovascular supply of flaps used in breast reconstruction (LD, Abdominal wall, I/S GAP, TUG, TDAP), - concept of angiosomes, specifically in reconstructions using abdominal free flaps, - indications and contraindications for IBR and DBR – pre-operative factors to be considered in decision making, - tissue effects of DXT. - psychological impact of IBR and DBR, - advantages and disadvantages in comparison with implant based reconstruction, - pre-operative investigations for specific flaps, - complications of autologous tissue reconstruction including donor site morbidity. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - long term outcomes of breast reconstruction - assessment of outcome (clinical / PROMs), - reconstruction in prophylactic surgery, - partial breast reconstruction, - nipple reconstruction techniques, - flap salvage and options following failure, - lipomodelling in reconstruction (indications, complications and controversies – stem cells, mammographic follow-up).
Clinical	BASIC

<p>Skills</p>	<p>Should demonstrate ability to</p> <ul style="list-style-type: none"> - take history eliciting factors important for decisions regarding suitability / type of autologous reconstruction, - maintain clear documentation in the notes in the post-operative period. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess suitability for IBR vs DBR, - discuss advantages and disadvantages of reconstruction - specifically setting of realistic expectation, reconstruction as a process, template in-patient stay and complications, - describe importance of informed consent and joint decision making, - manage complications of surgery in clinic (wound, seroma), - manage patients appropriately in post-operative period. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - identify patients not suitable for autologous reconstruction (physical and psychological contraindications), - undertake appropriate post-operative assessment of (free) flaps, - plan algorithms for managing complications.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - positioning of patient on operating tissue, - protection of pressure areas, - prevention of nerve injuries / neurapraxia, - skin preparation, draping and antibiotic prophylaxis, - selection / arrangement of appropriate level of post-operative care, - use of electric operating tables. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - pre-operative marking of patient , - raising pedicled autologous flaps including latissimus dorsi. - in-setting of flap. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - preoperative marking up of patient, - nipple reconstruction techniques (nipple sharing procedures, local flaps, tattooing), - raising pedicled autologous TRAM or DIEP flap, - free-flap techniques, - microvascular anastomoses, - lipomodelling for correction of resectional defects, - lipomodelling in breast reconstruction.

Topic	Aesthetic	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 6	Aesthetic Surgery of the Breast	
Objective	<i>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.</i>	
Knowledge	<p>BASIC Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - applied and surgical anatomy of the breast, its blood, nerve supply and function, - development of the breast and congenital deformity and variations of breast form and associated structures, - hormonal control of the breast and its pathology, when deranged, - breast physiology in pregnancy and lactation, - benign pathologies of the breast, - presentation, clinical features of breast cancer, its staging, prognosis and management pathways, - effect of ionizing radiation on the breast and implants, - planning incisions on the breast. - closure and management of breast wounds. - self-perception and self-consciousness in relation to breast conformation and proportion including the social and sexual dimensions, - pathology of deranged self-image. <p>INTERMEDIATE Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - content, structure, physical and biological properties of breast implants, - spectrum of implants available and their applications, 	

	<ul style="list-style-type: none"> - design, principles and applications of tissue expanders, - nature, physiology and behaviour of implant capsules, - management of capsular contractures. - biology, implications, avoidance of and management of implant infection, - various designs and approaches to breast augmentation and their applications. - issues surrounding breast size and its assessment. - complications of breast augmentation and their management. - various designs and patterns of breast reduction and mastopexy, - complications and management of breast reduction/remodelling. - presentation, management and complications of gynaecomastia. <p>ADVANCED Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - assessment of envelope and volume in relation to breast asymmetry, both developmental and acquired, - classification and management pathways of the tuberous breast, - management pathways and choices in breast asymmetry, - impact of breast reconstruction choices on symmetry, - effect of time, ageing and pregnancy on breast asymmetry correction, - various techniques of breast reconstruction, their applications, design and planning, - complications of breast reconstruction, - techniques for nipple reconstruction, including considerations of sequence and timing, - features of dysmorphophobia, - psychosexual dimension in aesthetic breast surgery. 	
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<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess and undertake non-operative of the management of the acute surgical patient, - take a targeted breast history, - perform patient examination including breast examination with reference to aesthetic considerations. <p>INTERMEDIATE Demonstrate knowledge of the management algorithms for the procedures covered in this section including investigations.</p> <p>ADVANCED Should be able to</p> <ul style="list-style-type: none"> - demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning, - assess and accurately record aesthetic concerns about the breast, - formulate management plans in relation to aesthetic interventions, - clearly explain, consent and counsel potential patients for aesthetic breast surgery, - assess the psychological suitability for aesthetic breast surgery and appropriately refer for expert psychological advice as necessary, - undertake risk benefit analysis of non-pathological based surgery, - deal with disappointment and postoperative dissatisfaction 	
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - planning, execution and closing incisions on the breast with reference to aesthetic principles and sub units. - designing and conduction of excision of skin lesions of the breast, - undertaking an aesthetic approach to removal of benign lesions of the breast, - scar revision in aesthetic breast surgery <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - correction of the inverted nipple (various techniques), - bilateral breast augmentation by various routes, in various planes, 	<p>Desirable Aesthetic surgery – Breast</p>

	<ul style="list-style-type: none"> - Wise pattern bilateral breast reduction, - vertical pattern bilateral breast reduction, - bilateral mastopexy of periareolar, vertical and Wise patterns, - excision of gynaecomastia, incorporating various forms of liposuction as appropriate. 	
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Topic	PELVIC RECONSTRUCTION	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module	Pelvic reconstruction	
Objective	<i>Acquire competence in the principles of management including reconstruction of the pelvic defect.</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - types and basic management of various types of pelvic/genito-urethral malignancy. - effects of gender on defect - principle of management of malignancy of pelvic origin - role of the MDT - range of flaps and techniques available for reconstruction <p>INTERMEDIATE Should demonstrate knowledge of techniques available for pelvic defect reconstruction including:</p> <ul style="list-style-type: none"> - assessment of the nature of the commoner partial defects and the most appropriate flaps - assessment of total perineal defect and the main types of flap. - pros and cons of various flaps for various defects <p>ADVANCED Should demonstrate knowledge of techniques available for specific aspects of pelvic and perineal reconstruction such as:</p> <ul style="list-style-type: none"> - penile amputation for 	

	<p>carcinoma.</p> <ul style="list-style-type: none"> - vulval reconstruction with fasciocutaneous flaps - coverage of exposed testis following Fourniers - urethral reconstruction options following malignancy or - trauma, including flap, FTSG, transplantation of urethra, tubed bladder wall 	
<p>Clinical Skills</p>	<p>BASIC Ability to demonstrate</p> <ul style="list-style-type: none"> - working within an MDT and the ability to assess the psychological state of the patient and possible size/nature of the defect prior to resection. <p>INTERMEDIATE Ability to demonstrate</p> <ul style="list-style-type: none"> - the skills to arrange patient-centered care with patient as partner in the process (depending on age of patient), providing realistic information and guiding patient decision-making regarding choices available and timing of those treatments. <p>ADVANCED Ability to manage and lead</p> <ul style="list-style-type: none"> - multi-disciplinary teams in respect of provision of psycho-social care. Be able to arrange the care pathway that supports an individual and his/her family to successfully adjust to disfigurement and functional problems through giving the individual and family specific life-skills. These include the patient being provided with information about their condition and its treatment, developing a positive outlook/belief system, learning to cope with their feelings, exchanging experiences with others who've "been there" and social skills training to manage other people's reactions. 	

<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - raising local flaps - use of quilted SSG for penile amputation - raise and deal with donor site for SSG and FTSG including BUMG. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - elevation of complex flaps including, Lotus flap, Singapore flap, Inferiorly based TRAM and VRAM, SIEA flap and gracillis flap. <p>ADVANCED Should be able to perform specific operations for perineal reconstruction such as:</p> <ul style="list-style-type: none"> - penile amputation for carcinoma - urethral reconstruction for stricture or trauma - vaginal reconstruction following malignancy 	<p>Desirable Flap elevation</p>

Skin Surgery Syllabus

The modules are as follows:

1. Basic Sciences, anatomy, physiology of the skin microcirculation, and pathology
2. Melanoma and non-melanoma skin cancers-primary treatment –Multidisciplinary discussion, surgical treatment and margins of excision, sentinel node biopsy, non-surgical treatment options
3. Melanoma and non-melanoma skin cancer-secondary treatments
4. Reconstructive techniques
5. Scars, wounds and Aesthetic skin problems
6. Multidisciplinary team workings, non-surgical treatments and follow up regimes

Topic	Skin Surgery
Category	ST3-6 Intermediate Years
Module 1	Basic Sciences – embryology, development, anatomy and physiology Skin assessment – examination, investigations including imaging and biopsy techniques.
Objective	<i>Acquire competence in the development, anatomy and physiology of the skin in relation to its surgery Acquire competence in the diagnosis, use of imaging and management of suspicious skin lesions</i>

Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of the skin-epidermal and dermal layers and appendigeal structures, - embryology of the skin, - histopathological appearance of skin, - anatomy of the body surface, in particular the head and neck, hands, nails and feet, - vascular, neuronal and lymphatic supply / drainage of the head & neck, trunk and limbs, blood supply of the skin, - diagnostic imaging of skin neoplasia X-rays, CT, MRI, US, PET-CT, and imaging assisted diagnostic biopsy, - standard skin stains used for histology, - origin of stains used and for what purpose - immunocytochemistry and cytogenetic techniques , - common benign skin disorders-hidradenitis suppurativa, epidermal cysts, lipomas, vascular and congenital malformations, - melanocytic naevi including giant, actinic lesions and epidermal/dermal lesions etc., risks of malignant transformation in chronic lesions, giant melanocytic naevi and Marjolin's ulcers, - specific history and diagnostic features (clinical and non-clinical) of benign skin lesions (pigmented and non-pigmented), dysplastic naevi, lentigo maligna, melanoma and non-melanoma skin cancers (basal cell carcinoma and squamous cell carcinoma), dermatofibroma, keratoacanthoma, pilomatrixoma, actinic keratoses, Bowen's disease, - clinical features of dermatitis artefacta, folliculitis, pyogenic granuloma, inflammatory skin conditions (hidradenitis and acne vulgaris), fungal skin lesions, lentigines, angiomata, - difference between telangiectasia and spider naevi, - chronic wounds and pressure sores. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of special sites, the pelvis, epitrochlear and popliteal fossa, the triangular space of the back, the axilla, head and neck lymph node basins, - anatomy and access for diagnostic biopsies when required, - concepts and limitations of diagnostic techniques, dermoscopy, mapping biopsies, frozen sections, - range, indications and principles of surgical options for surgical ablation of tumours of the skin, - staged histological clearance - sentinel node biopsy, - the role of the skin MDT, - diagnosis of lesions at difficult sites, subungual, large facial lesions, mucosal lesions, metastatic lesions, - the range of dressings for open skin lesions/wounds. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy in particular for block dissections of the axilla, inguinal, iliac and ilioinguinal regions, - functional and surgical anatomy of the face, head and neck, - the surgical options for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips), the trunk, the upper lower and lower limb, - the range of dressings available for complex wounds/ulcers.
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<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focused skin history related to any skin lesion and skin symptoms, - use the magnifying glass, lighting, dermoscopy - plan non-operative management of small open wounds, - use non-operative methods of hemostasis in the acutely bleeding wound/ulcer, - examine of the head & neck, upper limb, lower limb, abdomen and pelvis, - assess lesions on the face, head and neck, hand, arm, trunk and lower limb, - examine regional lymph nodes, - organise discussion of cases at clinical meetings, - accurately record diagnostic findings, - use the current minimum dataset for skin cancers, - use current databases and audit and peer review tools according to published requirements and guidelines. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess the chronic ulcer/wounds, - interpret, CT, PET-CT and MRI scans, - interpret and discuss cytological and histological biopsy reports. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - interpret any scans performed in particular PET, PET-CT and lymphoscintigraphy, - assess and formulate management plan for the large complex wound, - formulate appropriate and timely management, investigations, treatment and follow up plan for a patient in respect of all types of benign and malignant skin lesions
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - free-hand and ultrasound guided lesion biopsy - FNA of suspected lesions, punch biopsy, - harvesting of cells for cytological examination for fungus or malignancy, - aspiration of seromas or cystic skin lesions, - excision biopsy of undiagnosed skin lesions smaller than 1cm in size including those suspicious for malignancy and direct closure techniques, - application of the appropriate dressings in open wounds, - application of the appropriate dressings in infected skin wounds <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - surgical incision / excision biopsy of lesions at difficult sites (any size if periorbital, nasal, sole of the foot or hands and larger lesions on the pretibial region), - biopsy of subungual lesions, - use of staged histological clearance - application of a negative pressure dressing. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - sentinel lymph node biopsy to include interpretation of result - surgical incision / excision biopsy of large suspicious skin lesions (greater than 1cm in size) including large facial lesions,

Topic	Skin Surgery	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 2	Primary treatment of Skin-related neoplasia	
Objective	<i>Acquire competence in the diagnosis, assessment and management of all types of primary skin-related neoplasia.</i>	

Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - epidemiology , - histological classification (basal cell carcinoma / squamous cell carcinoma / Melanoma / Merkel cell/ porocarcinoma/ adnexal and pre-cancerous lesions, - potential differential diagnosis skin lesions, - staging of skin cancer (SCC and melanoma), (histological classifications, TMN, AJCC and current), - prognostic factors (tumour and patient related) and implications for patient treatment recommendations - implications of the occupational, family history, sun exposure history and immunosuppression, - genetic counselling and referral indications, - margins of excision for different histological types of basal cell carcinomas, Squamous cell carcinomas, Bowen's disease, in-situ disease, dermatofibroma and benign dysplastic skin lesions. - peer review and NICE guidelines in treatment of melanoma and non-melanoma skin cancers (melanoma, SCC, Sarcoma, Bowen's, actinic keratoses, Kaposi's sarcoma and BCC's) in particular margin recommendations, - the role of the MDT, - peer review and MDM documentation, 	
	<p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - margins of excision of different stages of melanoma, porocarcinoma, Merkel Cell carcinoma, Dermatofibroma sarcoma Protuberans, fibrosarcoma and suprafascial sarcoma, - indications for non-surgical treatment (Photodynamic therapy-PDT, Cryotherapy, laser and topical therapies) - indications for sentinel lymph node biopsy and other prognostic investigations, - adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies particularly for melanoma, - cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis, - palliative treatment options for skin cancer. 	
	<p>ADVANCED</p>	

Clinical Skills

BASIC

Should demonstrate ability to

- take focused skin related history,
- elicit factors associated with benign and malignant skin neoplasia such as familial factors, sun exposure and mechanism of sun damage and skin types,
- examine head & neck and truncal lymph node basins,
- initiate appropriate investigations, use diagnostic techniques of clinical features, the diagnostic templates eg. ABCDE (asymmetry, borders, colour, diameter and evolving),
- undertake dermoscopy and methods of recording lesion e.g. photography, diagrams for medicolegal and follow up reasons,
- work effectively within the skin cancer and allied speciality multidisciplinary teams, (eg head and neck MDM).

INTERMEDIATE

Should demonstrate ability to

- assess and manage patients presenting with locally advanced disease,
- recognise pathological features of common skin cancers –BCC, SCC and melanoma.
- interpret lymphoscintigraphy, CT, MRI & PET scans,
- recognise where further pathology or radiology may be required and request these appropriately,
- develop and record management plan in line with peer review requirements and discuss rationale for management of common scenarios with patients and colleagues,
- communicate skilfully.

ADVANCED

Should demonstrate ability to

- interpret FNA/USS and distinguish a primary pigmented lesion from a primary melanoma or a metastatic melanoma.
- formulate management plan using skills of analysis, diagnostic synthesis and judgement,
- discuss complex treatment scenarios with patients including discussion of all options,
- take informed consent detailing advantages and disadvantages of proposed treatment,
- discuss a cancer diagnosis with patients,
- advanced communication skills, breaking bad news, giving prognostic information to the patient

Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - excision biopsy of lesion and incision biopsy of skin lesions- when indicated, - Fine Needle Aspiration-FNA / core sample of lymph nodes, - wider excision of skin tumours with the advised margins on the trunk, leg and arm, - local flap reconstruction (rotation / transposition / advancement), - optimum placement of incisions allowing for possible secondary surgery and future block dissections, - explain the rationale for use of split and full thickness skin grafts and artificial skin replacements, - pre-op skin prep and draping and antibiotic and venous thromboembolism prophylaxis, - node sample in centres where sentinel lymph node biopsy is not employed. 	<p>Desirable Skin cancer excision and reconstruction</p>
	<p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - wider excision of lesions with the advised margin on the skin of the head and neck, face, genitalia and hand, - head and neck, truncal and limb sentinel lymph node biopsy, - level I, II and III axillary dissections and inguinal block dissection, - regional flaps – various including rotational, advancement, axial pattern. 	
	<p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - pelvic or head and neck block dissection, - reconstruction with regional and distant flaps, - free flap surgery, - reconstruction of aesthetic units (nose / eyelids / ears / lips) and special sites – nose, digits, eyes, genitalia and ears, - oculoplastic techniques 	

Topic	Skin Surgery
Category	ST3-6 Intermediate Years

Module 3	Treatment of recurrent and chronic skin tumours
Objective	<i>Acquire competence in the diagnosis, assessment, investigation and management of all types of recurrent and metastatic skin cancers.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - epidemiology and genetics of skin, - basic understanding of familial syndromes, - genes/oncogenes associated with skin cancer, - margins of excision for metastatic lesions including national guidance, - types of cancer – recurrences, new primaries, related malignancies, - immunosuppressed patients, - syndromic patients, ie, Gorlin's, Cowden's, polyposis coli, melanosis, xeroderma pigmentosum, giant melanocytic naevi, skin conditions in immunocompromised patients, - TNM Staging of skin cancer, - prognostic factors (tumour and patient related) and implications for patient treatment recommendations, - rationale and types of imaging for prognostic and staging information, - biopsies, FNA, USS, X-Ray, CT, MRI, PET-CT, SPECT-CT and SNB, - cancer network guidelines in treatment of recurrent skin cancers, - functioning of the MDT, <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - indications for non-surgical treatment, - anatomy and techniques for excision and closure of block dissections, - adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies, - Staged Histological Clearance (SHC), isolated limb infusions, ECT, isolated limb perfusion, CO2 laser ablation and minimally invasive techniques including laparoscopic and robotic surgery, - cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis, - palliative treatment options for the skin cancer patient, - management of the complex wound, - hospice care

<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focused skin related history, - elicit factors associated with malignant non-skin related neoplasia, - examine skin of entire body surface for additional primary tumors, - examine all sites for regional lymphadenopathy, - initiate appropriate investigations, - work effectively within the skin cancer multidisciplinary team, - manage the non-operative aspects of the chronic wound including pressure sores <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - interpret CT, MRI & PET scans, - assess and manage patients presenting with locally advanced disease, - recognise where further pathology or radiology may be required and request these appropriately, - develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate management plan using skills of analysis and diagnostic synthesis, judgement in particular for the patient with multiple co-morbidities, - discuss a skin cancer diagnosis and prognosis with patients, - communicate skilfully with patients and with other members of the clinical team,
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - incision biopsy of lesions, - excision biopsy of lesions, - FNA / core sample of lymph nodes, - undertaking local flap reconstruction (rotation / transposition / advancement). <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - cervical sentinel lymph node biopsy - regional lymph node dissections of the axilla and groin, - regional flaps, pedicled reconstructions - use of dermal substitutes for wound resurfacing <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - free flap surgery, - reconstruction of aesthetic units (nose / eyelids / ears / lips), - mapping biopsy techniques Staged Histological Clearance (SHC).

Topic	Skin Surgery	
Category	ST3-6 Intermediate Years	Areas in which simulation should be used to develop relevant skills
Module 4	Reconstructive techniques for skin surgery	

Objective	<i>Acquire competence in the planning, execution and management of appropriate soft tissue reconstruction of skin defects.</i>	
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of perforators and angiosomes – relevant to planning of local, regional and distal flaps, - anatomy of local, regional and free flaps suitable for head & neck reconstruction, - classification of flaps (random v axial / muscle flap - Mathes and Nahai / type of tissue being transferred), - advantages and disadvantages of local, regional and free flaps in the patient post skin tumour excision, - use of local, regional and free flaps in the head & neck/upper limb/leg/chest and trunk, - factors affecting outcome in flap surgery (patient related, operative, adjuvant therapy related), - principles of flap surgery (replace “like with like”, reconstructive units, back-up plan and “life boat”, donor site considerations), - principles of microsurgery <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - indications for preoperative investigations for specific flaps, - post-operative flap monitoring techniques, - complications of autologous tissue reconstruction including donor site morbidity, - use of common skin substitutes <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - factors determining decision making in choice of flaps and tissue for soft tissue defect reconstruction, - factors determining decision making in choice of flaps and tissue for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips), factors determining appropriate surgical ablation techniques, - range, indications and principles of surgical options and non-operative techniques, - assessment of outcome, - flap salvage and options following failure. 	

Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess the soft tissue defect, - take history, eliciting factors important for decisions regarding suitability / type of reconstruction, - perform contemporaneous and appropriate record keeping. - manage uncomplicated wounds using a range of dressings, - plan both local and free flaps resurfacing of soft tissue defects, - co-ordinate soft tissue reconstruction in conjunction with ablative team, - manage the patient following Staged Histological Clearance (SHC). <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - discuss advantages and disadvantages of reconstructive options with patients specifically setting realistic expectations, advising on reconstruction as a process, and detailing possible complications, - take informed consent from patients and participate in joint decision making, - arrange appropriate level of post-operative care. - manage complications of surgery appropriately in post-operative period and in the clinic, - use of common skin substitutes <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess complex reconstructive requirements and formulate appropriate management plan, - interpret investigations as part of formulating management plan. 	
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Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - positioning of patient on operating table., - protection of pressure areas, - prevention of nerve injuries / neurapraxia, - pre-operative marking of patient, skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis, - split skin grafting, full thickness skin grafting - range of local flaps 	Strongly recommended Microsurgery skills
	<p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - reconstruction of the scalp and management of chronic scalp wounds and the unstable scalp, - raising pedicled autologous flaps, - in-setting of flap, - harvesting chondrocutaneous, cartilage, composite grafts and vein grafts, - use of common skin substitutes 	
	<p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - 3D reconstruction of specialised structures, - reconstruction of the periorbital structures/ear and nose, - microvascular anastomoses, 	

Topic	Skin Surgery
Category	ST3-6 Intermediate Years
Module 5	Scarring, wounds and other surgical conditions of the skin
Objective	<i>Acquire competence in the management of the patient with the longer term outcomes of benign and malignant skin conditions / post surgical scarring and chronic wounds</i>

<p>Knowledge</p>	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - skin anatomy, - aetiology and related benign conditions, - hypertrophic scars, keloids, dermatofibroma, epidermal cysts, lentiginos, actinic keratoses, xanthelasmata, lipomas, - history and examination of the skin. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - dermoscopy and imaging techniques of the skin, - Marjolin’s ulcer, pilomatrixoma, DFSP, hidradenitis suppuritiva, acne scarring, inflammatory skin conditions. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - consequences of nerve resection and other functional deficits after resection of tumour, - lymphoedema, - complex wounds, - psychological and social issues that can affect the skin cancer patient,
<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess the skin using dermoscope, - recognise infection, induration, lymphoedema, seroma, post radiotherapy recurrence in complex scars. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess surgical scar and deploy non-operative techniques for scar improvement, - injection techniques for scar improvement, - manage functional and psychological effects of post cancer resection surgery, <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - make decisions and analyse the options for aesthetic improvement in the surgically-scarred cancer patient including advance communications skills.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - debulking of keloids, - excision of benign lesions, - shave excisions, - laser ablation of skin lesions, - incision and curettage for active hidradenitis suppuritiva. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - botulinum toxin and filler injections, - scar release, - z-plasty, - reconstruction post excision of scars, - surgical options of laser, - excision or sclerotherapy for vascular malformations, - fat grafting.

Topic	Skin Surgery
Category	ST3-6 Intermediate Years
Module 6	Multidisciplinary team workings, allied professionals, palliative care and follow up regimes, trials, research and national guidelines
Objective	<i>Acquire competence working as a member of the multidisciplinary team, knowledge of and ability to consider appropriate referral to other professionals. A full understanding of NICE Improving outcomes guidance and Peer review. An understanding of research and audit in local, national and international settings</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - national guidelines (NICE) for the diagnosis, treatment and follow up of BCC, SCC's, Bowen's, Melanoma, dermatofibrosarcoma protuberans and suprafascial sarcoma, - surgical and non surgical options. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - management of the patient with recurrent disease (surgical, non-surgical and radiotherapy options), - stages of bereavement that can be associated with loss of body image and the clinical and psychological supports that can be put in place to assist the patient cope with that loss.
Clinical Skills	<p>BASIC Should demonstrate ability in using communication and referral pathways to specialist MDM's</p> <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - interpret lymphoscintigraphy, CT, MRI, PET, FNA, USS and pathology minimum dataset, - develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues, - apply psychological assessment tools for evaluation of psychological needs (patient questionnaires).
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - excision of small skin recurrences / <i>in transit</i> metastases, - recording surgical procedures, - handling of surgical specimens, - orientation and appropriate carriage medium for skin specimens, - performing FNA.

Topic	Vascular anomalies
Category	ST3-6 Intermediate Years
Module	Vascular Anomalies
Objective	<i>Competence in the assessment, surgical management and aftercare of vascular anomalies.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - classification and natural history of the common types of vascular anomalies including haemangiomas and vascular malformations affecting different vessels - diagnostic criteria of main types of vascular anomalies including ability to distinguish high and low flow lesions as originally described by Mulliken <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - abnormalities and syndromes associated with haemangiomas (eg PHACE syndrome, Kasabach-Merritt syndrome, Maffucci's syndrome) and vascular malformations (eg Sturge-Weber, Klippel-Trenaunay, Parkes-Weber, Hereditary Haemorrhagic Telangiectasia) - indications for radiological investigations and safety issues pertaining to those investigations including MRI, CT and angiography - pharmacological interventions that are or have been used in the treatment of haemangiomas eg corticosteroids (systemic and intralesional), propranolol and possible side effects - principles of management of vascular tumours and malformations - problems related to multiple lesions eg haemangiomas including visceral or venous malformations - different types of laser treatment for vascular malformations eg pulsed dye laser and long pulse Neodymium:YAG laser including the role of topical cooling - role of the MDT in management of Vascular Anomalies <p>ADVANCED Should demonstrate knowledge of :</p> <ul style="list-style-type: none"> - difficult to classify lesions eg glomangiomas, rapidly involuting congenital haemangiomas, non-involuting congenital haemangiomas, tufted haemangiomas and haemangioendotheliomas - appearance of different vascular lesions on ultrasound, MRI, CT and angiography - different radiological procedures used for the treatment of vascular anomalies, eg sclerotherapy for venous malformations and lymphatic malformations and embolization of arteriovenous malformations and their potential complications - techniques of surgical excision of difficult lesions such as arteriovenous malformations in conjunction with embolization and problems of surgical treatment in eg Klippel-Trenaunay syndrome and the importance of preserving venous drainage

<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to:</p> <ul style="list-style-type: none"> - correctly diagnose the main types of haemangiomas and vascular anomalies on history and physical signs - advise patients and parents on the natural history of haemangiomas and different vascular anomalies including prognosis of these lesions <p>INTERMEDIATE Should demonstrate ability to:</p> <ul style="list-style-type: none"> - utilise investigations to confirm diagnosis, - demonstrate extent of a vascular anomaly, - formulate a treatment plan utilising medical and non-invasive methods of management in an appropriate and effective way, - liaise as needed with other specialities eg radiology, dermatology, ophthalmology ENT <p>ADVANCED Should demonstrate ability to:</p> <ul style="list-style-type: none"> - plan appropriate interventional treatments - advise patients and parents on outcomes and complications of radiological, laser-based and surgical interventions with particular reference to critical anatomical sites including orbit, perioral and parotid areas
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to</p> <ul style="list-style-type: none"> - use a hand held Doppler for diagnostic purposes. <p>INTERMEDIATE Should be able to perform :</p> <ul style="list-style-type: none"> - debulking of infantile haemangioma - excision of small vascular malformation - injection of steroids into infantile haemangioma

Final including Special Interest Stage

Overview of the final stage

The Final Years Plastic Surgery curriculum proposal intends to provide a detailed description of the range of practice within our specialty. We plan to introduce a modular structure of study that encompasses the areas of special interest and delivers the acquisition of competency based on Knowledge, Clinical Skills and Technical Skills. The adoption of a modular curriculum structure facilitates a clear expression of our specialty and is widely used on other educational platforms. The subject matter of each module is presented in a hierarchical manner; namely Basic, Intermediate or Advanced Levels of complexity.

Plastic Surgery encompasses Aesthetic Surgery*, Burns, Cleft*, Complex Wound, Craniofacial, Ear Reconstruction, Genitourinary Reconstruction, Hand*, Head & Neck*, Lower Limb, Oncoplastic Breast*, Skin Oncology, (*Indicates an existing Training Interface Group fellowship arrangement with other specialties). For each special interest area we have specified a series of topics. Modules that detail the pertinent Learning Objectives, Knowledge, Clinical Skills and Technical and Practical Skills. Each area also has a blueprint of Work Based Assessments mapped to the Modules and to the Basic, Intermediate and Advanced Levels. Current Final Years work is virtually all specified at Level 4 and we will keep that as the level of attainment throughout.

Basic level competencies have normally been achieved in the Early and Intermediate Years. At least part of the Intermediate Level has been covered in ST3-6 and the Final Years programme builds on this with the trainee selecting from the Advanced level modules according to interest, opportunity and service requirements in consultation with the trainee's Programme Director. Trainees are not expected to acquire all the Advanced level skills in a particular syllabus but will choose specific modules to pursue at Advanced Level according to interest, opportunity and service need.

The special interest areas together represent a total expression of our specialty and it is important for non-plastic surgeons reading this document to appreciate that there is no area of more general plastic surgery practice that is not otherwise covered under one of the syllabus proposals. Aesthetic surgery, Cleft surgery, Hand Surgery, Head & Neck surgery and Oncoplastic Breast surgery represent areas of practice that we share with surgical partners in other disciplines. Training Interface Groups (TIGs) exist for these special interest areas with opportunity for trainees from Plastic Surgery to work alongside other surgical groups. Although this document, as written, is stated for Plastic Surgery it has been devised with the total expression of these interface disciplines in mind. Convergence of curricula with our various surgical partners is one of our stated aims over time and we offer our model as contribution to those future discussions.

The special interest syllabus proposals appear in alphabetical order within the document

following the example detailed for Hand Surgery.

- Aesthetic Surgery (TIG)
- Burns
- Cleft (TIG)
- Complex wound
- Craniofacial
- Ear reconstruction
- Genitourinary reconstruction
- Hand (TIG)
- Lower Limb Trauma
- Head & Neck (TIG)
- Lower Limb
- Oncoplastic Breast (TIG)
- Skin Oncology

Standards for Training

Standards for depth of knowledge

The following methodology is used throughout the surgical curricula 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
- 5. 2: knows basic concepts
- 6. 3: knows generally
- 7. 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.

- 5. 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).

- 6. 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.

- 7. 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.
- 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.

Competency Levels within each Module

The current system takes each procedure and describe Levels 1- 4 competencies for the same. As the training years proceed the trainee gets to master more complex procedures.

The current proposal is to vary this by recognising that some parts of practice are inherently more difficult than others and that some more complex procedures are mastered from simpler competences in a hierarchical manner.

A. Basic level competencies

Within each module there are elemental topics that are designed to act as building blocks from which more complex competences can be achieved.

All of these are compulsory in each module and level 4 competency will be achieved by all trainees

B. Intermediate level competency

These include a list of the more common topics within each module and most of these competencies will have been achieved within Intermediate Years prior to entry into the Final Years programme.

All trainees in Interface Fellowships will achieve level 4 competency in these topics in every module, while trainees in a mono-specialty training post will obtain level 4 competence in these topics for 3 or 4 modules.

C. Advanced level competency

This third tier of topics includes the most complex topics in each module. Recognising that trainees will already be specialising at this level and will have varying opportunities related to the particular interests of their consultants there is then a third tier of procedures in each module from which a selection should be undertaken i.e. not every trainee would do every procedure from these lists but would be expected to select a number of procedures from 2 (monospecialty) or 3 (interface) modules.

Training Pathways in Final Years

The Final Years trainee has several options in respect of developing further expertise in an area of special interest (see also Appendix A for fuller description of Training Pathways).

Plastic Surgeon with Special Interest:

Either

Training Interface Group fellowship (preCCT)(also open to trainees from related surgical disciplines) (typically 1 year fellowship)

It is envisaged that trainees undertaking an Interface Advanced Training Post (ATP) will achieve:

- Basic and Intermediate competencies in **all** modules
- Advanced competencies in up to 3 modules.

Or

Monospecialty trainee (plastic surgery departments only)

It is envisaged that trainees undertaking a Monospecialty Advanced Training Post (ATP) will achieve:

- Basic competencies in all the modules,
- Intermediate competencies in 4 modules
- Advanced competencies in 2 modules.

Plastic Surgeon in General

The trainee wishing to maintain a more general practice may do so and develop their competences through selection of up to 6 modules from the wider syllabus as specified under Appendix A.

Assessment of the Final Years Curriculum

It is recognised that trainees will have already gained some competencies during Early and Intermediate years that can be recognised within this Final Years programme. These existing Level 4 competencies can be migrated into the Final Years Learning Agreement and do not need to be repeated.

The assessment of the curriculum will be by workplace-based assessments, including MSF, CBD and PBAs. It will include reflective learning exercises that will count towards the total of Work Based Assessments. Evidence from these assessments will be used to inform the ARCP that will form the summative assessment of trainees. Further details are specified in Appendix B.

At this time there is no expectation that a formal test of knowledge be included for trainees in Final Years beyond the Intercollegiate Specialty Examination in Plastic Surgery; FRCS(Plast).

Relationship to Early and Intermediate Years training

Special interest areas already exist in the Intermediate Years Curriculum. The Intermediate Years curriculum is not specifically modular so this proposal is distinct from what currently exists.

A range of competences identified as Basic and Intermediate will already have been achieved during Early and Intermediate Years training. These can be identified and mapped to a grid or blueprint (Appendix C) at the commencement of Final Years training. The particular range of competences will vary between trainees. Part of the Final Years programme will be to extend the range of competences as well as achieving depth in designated modules.

The detailed lexicon of the E-logbook that has recently become the only version for trainees (soon for consultants) will be developed with advanced search facilities. Again, it will be possible to import earlier experiences in training into the Final Years blueprint enhancing the Learning Agreement and giving clear visibility of experience, competence and development by both syllabus and module.

Syllabus Structure

This syllabus is structured on a modular basis. The modules are based on those originally used by FESSH, the BSSH Instructional Courses and the BSSH Postgraduate Diploma in Hand Surgery (BSSH/UoM).

The modules are as follows:

1. Skin and soft tissue (including microsurgery and Dupuytren's disease)
2. Fractures and joint injuries (including wrist instability)
3. Osteoarthritis and inflammatory arthritis
4. Tendon
5. Nerve
6. The child's hand, vascular anomalies and tumours of the hand

Within each module, there are three levels of topics, reflecting progressive complexity. These levels are entitled Basic, Intermediate and Advanced.

It is envisaged that trainees in the Interface Hand Fellowships will achieve:

- Level 4 competence in all basic topics in every module
- Level 4 competence in all intermediate topics in every module
- Level 4 competence of all advanced topics in 3 modules

These individuals will be capable of working as interface consultants e.g. plastic surgeon working in an orthopaedic department etc.

Final Years trainees who train in a mono-specialty and who wish to specialise in hand surgery will be expected to achieve:

- Level 4 competence in all basic topics in every module
- Level 4 competence in all intermediate topics in 3 modules
- Level 4 competence of all advanced topics in 2 modules

Hand Surgery

Module 1 Skin / Soft tissue / Microsurgery / Dupuytren's Disease

Module 2 Fractures and Joint Injuries including Wrist Instability

Module 3 Osteoarthritis and Inflammatory Arthritis

Module 4 Tendon and tendon-related disorders

Module 5 Nerve and nerve-related disorders

Module 6 The Child's Hand, Vascular Disorders and Tumours

Topic	HAND
Category	ST7/8 Final Years and TIG Fellows
Module 1	Skin / Soft tissue / Microsurgery / Dupuytren's Disease
Objective	<i>Acquire competence in the diagnosis and management of soft tissue problems around the hand and upper limb including traumatic loss. Acquire competence in all aspects of care of Dupuytren's disease.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - anatomy, embryology, physiology of skin, blood supply and blood flow, - models of skin blood supply - mechanism of action of pharmacology on the microcirculation, - elements of wound healing, - organisms causing soft tissue infection including, microbiology of infecting organisms, surgical pathology and spread of infection, - surgical and pathological anatomy of Dupuytren's disease in the palm and digits. <p>INTERMEDIATE Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - range, indications and principles of operations to treat conditions listed in this module, - post-operative complications and their management, - hand therapy interventions for wound & scar management, reduction of swelling and management of stiffness, - levels of amputation for the upper limb, - principles of microvascular surgery, - principles of replantation including macroreplantation. - sciences of pathogenesis of Dupuytren's disease. <p>ADVANCED Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - recent advances in wound healing including wound healing technology such as vacuum-assisted closure, - ancillary investigations including those pertinent to vascular compromise of limb, life or limb-threatening infections, techniques to raise vascularised free tissue transfers including lateral arm flap, latissimus dorsi flap, gracilis flap, toe transfer, - management of the mutilating hand injury including rollover

	<p>injury, gunshot injury,</p> <ul style="list-style-type: none"> - management of extravasation and high-pressure injection injury to the hand. - management of thermal injury to the hand including local treatment of scald, flame, chemical & electrical burns and frostbite,
Clinical Skills	<p>BASIC Should perform :</p> <ul style="list-style-type: none"> - assessment and non-operative management of the acute surgical patient including targeted hand-related history and hand examination. <p>INTERMEDIATE Should demonstrate ability to :</p> <ul style="list-style-type: none"> - devise management algorithms for the conditions covered in this section including investigations. - <p>ADVANCED Should demonstrate abilities of :</p> <ul style="list-style-type: none"> - analysis and diagnostic synthesis, judgement, surgical planning.
Technical Skills and Procedures	<p>BASIC Should be able to perform :</p> <ul style="list-style-type: none"> - nail bed repair, - different types of skin grafts including split skin/full thickness skin graft, - palmar fasciectomy for Dupuytren's disease, - fasciocutaneous flaps around the forearm. - variety of flap reconstructions, - local flap (transposition, rotation, island), - microsurgical techniques including simulation-based exercises - arterial and venous repair – small and medium vessels <p>INTERMEDIATE Should be able to perform :</p> <ul style="list-style-type: none"> - fingertip reconstruction : heterodigital flap reconstruction including cross-finger flap, thenar flap, Foucher flap, and homodigital neurovascular island flaps - application of mechanical vacuum suction device for appropriate wounds, - debridement of complex wounds, - fasciectomy for MCPJ contracture (Dupuytren's disease), - fasciectomy with correction of PIPJ contracture. <p>ADVANCED Should be able to perform :</p> <ul style="list-style-type: none"> - planning and execution of flap reconstruction - distant flap e.g. groin, posterior interosseous artery flap, radial forearm flap - free tissue transfer – flap elevation, - elevation of variety of free tissue transfers e.g. lateral arm flap, latissimus dorsi muscle flap, second toe transfer etc., - includes cadaver based flap elevation as part of simulation exercises - microsurgical techniques

	<ul style="list-style-type: none"> - microsurgical free tissue transfer - revascularisation digit or upper limb part - replantation of digit or upper limb segment - fasciectomy for recurrence of Dupuytren's disease, - dermofasciectomy for Dupuytren's disease.
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Topic	HAND
Category	ST7/8 Final Years and TIG Fellows
Module 2	Fractures and Joint Injuries including Wrist Instability
Objective	<p><i>Acquire competence in the diagnosis and management of all types of fractures of the phalanges, metacarpals, carpus and distal radius.</i></p> <p><i>Acquire competence in the diagnosis and management of the unstable wrist including distal radioulnar joint.</i></p>
Knowledge	<p>BASIC Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - pathophysiology of fracture healing including non-union and malunion, - principles of operative and non-operative management of hand and wrist fractures, - detailed anatomy of: <ul style="list-style-type: none"> - radio-carpal/DRUJ/MCP/PIP/DIP joints and CMC joint of the thumb - ligamentous anatomy of these joints and how it influences treatment - available imaging techniques and their interpretation: <ul style="list-style-type: none"> - plain and stress radiographs of the wrist and hand. - other specific views relevant to particular situations - role of: MRI/bone scan / ultrasound / arthrography / arthroscopy for investigating the hand and wrist <p>INTERMEDIATE Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - detailed management of fractures and dislocations of bones and joints of hand and wrist including carpus and distal radioulnar joint, - normal biomechanics of the osseoligamentous structures of the hand and wrist. <p>ADVANCED Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - detailed wrist anatomy, - pathophysiology of wrist instability / recognised patterns of instability and their clinical presentation, - investigations for complex joint disorders and wrist instability, - appropriate interventions for wrist instability through knowledge of indications, - indications for diagnostic and therapeutic wrist arthroscopy.
Clinical skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess fractures, dislocations and ligamentous injuries of the hand and wrist, - assess the unstable wrist,

	<ul style="list-style-type: none"> - manage common fractures of the hand and wrist, - apply a range of plaster splints. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - manage more complex fractures of the hand and wrist, - manage distal radius and scaphoid fractures by standard techniques. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess and manage complex fractures of the distal radius and scaphoid, - manage ligamentous injury of the carpus and distal radioulnar joint, - manage malunion and non-union of fractures of the phalanges, carpus and distal radius.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - simulation-based exercises of the techniques for fracture fixation: closed reduction with application splint or cast, K-wiring and interosseous wiring, plate and screws, and lag screw. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - closed K-wiring for: <ul style="list-style-type: none"> CMC/PIP joint dislocations phalangeal/metacarpal fractures distal radius fractures (pins & plaster) - open fixation of metacarpal fractures, - open fixation of uncomplicated distal radius fractures, - repair of ulnar collateral ligament of MCPJ of thumb (Gamekeeper's thumb), - application of external fixator to upper limb. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - open fixation of phalangeal fractures, - operative treatment of intra-articular fractures of the PIP joint, - open fixation of complex distal radius fractures, - scaphoid fracture fixation (acute and for non-union), - vascularised bone grafting for scaphoid non-union, - operative stabilisation of acute carpal disruptions, ligament stabilisation procedures for chronic problems of the, scapholunate, lunotriquetral CMC joints and midcarpal instability, - bone transport, and <p>Should be able to use bone substitutes.</p>

Topic	HAND
Category	ST7/8 Final Years and TIG Fellows
Module 3	Osteoarthritis and Inflammatory Arthritis
Objective	<i>Acquire competence in the diagnosis and management of all aspects of management of osteoarthritic joints of the hand and wrist. Acquire competence in the diagnosis and management of all aspects of management of inflammatory arthritis of the hand and wrist.</i>
Knowledge	<p>BASIC Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - pathophysiology of osteoarthritis, inflammatory arthritis and septic arthritis including appreciation of patterns of disease. - imbalances and deformities associated with inflammatory arthritis - pathomechanics of common rheumatoid hand deformities including: <ul style="list-style-type: none"> distal radioulnar joint subluxation and carpal translocation MCPJ subluxation and ulnar drift digital boutonnière and swan neck thumb deformity and CMC disease - principles of arthroplasty. <p>INTERMEDIATE Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles and detailed management of the common osteoarthritic disorders of the hand and wrist including the basal joint of the thumb, - principles and detailed management of rheumatoid arthritis in the hand and wrist, - aetiology, pathomechanics of deformity in inflammatory arthritides including understanding disease patterns, - biomechanics of small joint replacement, - place of soft tissue reconstruction, joint fusion, replacement, interposition and excision arthroplasty in the treatment of the rheumatoid hand and wrist, - planning and prioritising treatment within an MDT setting. <p>ADVANCED Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles and detailed management of more complex and osteoarthritic disorders of the hand including secondary osteoarthritis, - surgical and non-surgical management of the wrist, tendons, small joints and imbalance disorders (swan neck and boutonnière) occurring in rheumatoid arthritis, - pathology, mechanisms of deformity and management of other inflammatory conditions (non-rheumatoid) affecting the hand and wrist, - management of Kienböck's disease and Madelung's deformity.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess the arthritic patient and recognise the typical patterns of disease, - demonstrate conservative management techniques including splinting, exercises and understanding of occupational therapy assessment and provision of aids to daily living, - undertake external K-wire removal. <p>INTERMEDIATE Should demonstrate ability to</p>

	<ul style="list-style-type: none"> - undertake detailed examination of the patient with inflammatory arthritis to demonstrate the features of: <ul style="list-style-type: none"> distal radioulnar joint subluxation and carpal translocation MCPJ subluxation and ulnar drift digital boutonnière and swan neck thumb deformity and CMCJ disease - diagnose pathology through local anaesthetic joint injection techniques, - undertake treatment by joint injection, - includes simulation-based exercises for joint injection techniques <p>ADVANCED</p> <p>Should demonstrate knowledge of detailed management algorithms for the conditions covered in this module including complex conditions.</p>
Technical Skills and Procedures	<p>BASIC</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> - harvesting of iliac bone graft / radius bone graft, - simulation-based exercises of wrist arthroscopy <p>INTERMEDIATE</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> - arthrodesis of DIPJ / PIPJ/ MCPJ, - trapeziectomy plus/minus soft tissue ligamentous reconstruction, - total wrist arthrodesis - Darrachs procedure - Suave-Kapandje procedure - diagnostic wrist arthroscopy <p>ADVANCED</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> - therapeutic wrist arthroscopy e.g. TFCC debridement - limited arthrodesis including STT, 4-corner, radiolunate - variety of procedures for rheumatoid arthritis including MCPJ arthroplasty e.g. Swanson silicone spacer replacement, surface replacement arthroplasty, soft tissue arthroplasty with ligament reconstruction for instability, soft tissue correction for swan neck/boutonnière deformities - joint replacement arthroplasty: PIP / CMCJ / Wrist / DRUJ

Topic	HAND
Category	ST7/8 Final Years and TIG Fellows
Module 4	Tendon and tendon-related disorders
Objective	<i>Acquire competence in the diagnosis and management of all aspects of flexor and extensor tendon injuries and associated reconstruction. Detailed knowledge of the hand therapy and rehabilitation regimens for the same.</i>
Knowledge	<p>BASIC</p> <p>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - mechanisms of tendon injury and healing, - pathophysiology of related tendon disorders. <p>INTERMEDIATE</p>

	<p>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none">- principles of tendon transfer,- biomechanics of the tendons and tendon sheath / pulleys,- available suture techniques for repair of the divided tendon including multistrand repair,- rehabilitation regimens for flexor and extensor tendon repair. <p>ADVANCED</p> <p>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none">- recent advances in basic sciences of tendon injury and repair,- basic science and evidence base informing use of different techniques of tendon repair and rehabilitation regimens,- the role of the intrinsic muscles in facilitating co-ordinated tendon function.
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Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess the injured tendon and other tendon disorders, - select use of relevant specialist imaging techniques such as ultrasound. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess and manage algorithms for the conditions covered in this module, - examine the stiff finger and distinguish flexor/extensor adhesions / primary or secondary joint stiffness. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - undertake detailed assessment of and advise on complex tendon problems including reconstruction and reanimation of the hand in cases of tendon loss and nerve palsy using individualised tendon transfers, - analyse and advise on modifications needed to standard therapy regimens to correct specific problems such as joint contracture.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - extensor tendon repair - flexor tendon repair (Zones III-V) - tendon graft harvest -extensor / flexor synovectomy -trigger digit release <p>Includes simulation-based exercises related to tendon surgery</p> <p>INTERMEDIATE Should be able to perform:</p> <ul style="list-style-type: none"> - De Quervain's release - flexor tendon repair (multistrand)(Zones I & II) - flexor or extensor tenolysis - tendon transfer (EI-EPL) - tenodesis (EDC replacement in partial EDC rupture) <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - late reconstruction of flexor and extensor tendons: - tendon grafting 1 and 2-stage - tendon transfer <ul style="list-style-type: none"> - radial nerve set - opponensplasty for opposition - intrinsic replacement for claw hand - adductorplasty for key pinch

Topic	HAND
Category	ST7/8 Final Years and TIG Fellows
Module 5	Nerve and nerve-related disorders

Objective	<i>Acquires competence in the diagnosis and management of all aspects of nerve related disorders including nerve compression, nerve palsy and nerve injuries along with associated reconstructive techniques. Acquires detailed knowledge of the rehabilitation regimens for the same.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - topographic anatomy of peripheral nerve including brachial plexus, - response of peripheral nerve to injury and repair, - pathophysiology of nerve compressive disorders. - appropriate outcome assessment instruments. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - techniques of nerve repair, - mechanisms of brachial plexus injury, the patterns of injury and outline treatment options, - pathophysiology and classification of CRPS and neuropathic pain problems. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - appropriate use of nerve grafts and other conduits, - techniques of nerve reconstruction, neurotisation, and muscle transfers for reanimation of the upper limb, - principles of management and classification systems pertinent to cerebral palsy and tetraplegia, - pharmacological and non-pharmacological methods for the relief of nerve-related pain problems.

<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess nerve-related disorders including brachial plexus, - apply relevant specialist imaging techniques such as electrophysiological investigation and ultrasound, - prevent iatrogenic nerve injury. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - clinical assessment and management algorithms for the conditions covered in this module. - assessment of nerve function using specific equipment used in rehabilitation and assessment (such as Semmes Weinstein filaments). <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess brachial plexus and obstetrical brachial plexus injury including acute and interval treatment, - clinically assess the spastic and tetraplegic upper limb. - define the management algorithm of the iatrogenic nerve injury.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform:</p> <ul style="list-style-type: none"> - peripheral nerve repair including digital nerve including simulation-based exercises for microsurgical peripheral nerve repair - nerve graft harvest - carpal tunnel release - cubital tunnel release (simple decompression) <p>INTERMEDIATE Should be able to perform:</p> <ul style="list-style-type: none"> - nerve decompression : cubital tunnel release (transposition / medial epicondylectomy), revision carpal tunnel release - nerve grafting for segmental nerve defect <p>ADVANCED Should be able to perform:</p> <ul style="list-style-type: none"> - nerve decompression <ul style="list-style-type: none"> ulna nerve in Guyon's canal submuscular transposition of ulna nerve (cubital tunnel) radial nerve in radial tunnel median nerve in pronator tunnel - transposition of neuroma - wrist denervation - brachial plexus exploration (including OBP) <ul style="list-style-type: none"> nerve grafting neurotisation intercostal nerve grafting muscle transfer for reanimation

Topic	HAND
Category	ST7/8 Final Years and TIG Fellows
Module 6	The Child's Hand, Vascular Disorders and Tumours

Objective	<p><i>Acquire overall competence in the diagnosis and management of children's hand problems with emphasis on congenital hand conditions.</i></p> <p><i>Acquire competence in the management of vascular disorders and neoplastic conditions of the upper limb in both children and adults.</i></p> <p><i>Demonstrate knowledge of the aetiology, classification, risk factors and surgical management of these conditions.</i></p>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of management of children's hand disorders including classification, reconstructive principles and timing of operations for congenital difference, - embryology of the upper limb and the mechanisms of malformation, - patterns of normal growth and development, - management of vascular injury including compartment syndrome, - principles of management of soft tissue and bony tumours particularly the more common swellings found around the hand., - management of upper limb tumours with reference to surgical oncology including biopsy techniques, excision margins, management of regional lymph nodes, formal amputations. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - the following conditions of the Child's Hand: trigger digits, polydactyly including thumb duplication, simple syndactyly, epiphyseal injury (Salter Harris) - management of vascular insufficiency syndromes, - haemangiomas and vascular malformations, - management of soft tissue and bony tumours including formal amputations, reconstructions, - principles of management of skin cancer occurring in the upper limb and management of the regional lymph nodes. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - the following conditions of the Child's Hand: <ul style="list-style-type: none"> complex syndactyly (e.g. Apert's hand) radial dysplasia (radial club hand), ulnar dysplasia thumb hypoplasia upper limb malformations in arthrogryposis Madelung's deformity Constriction band syndrome cerebral palsy, spasticity use of prosthetics - vascular lesions including vascular malformations, - management of acute and chronic vascular insufficiency syndromes including compartment syndrome / Volkmann's ischaemic contracture. - classification systems and histopathology relevant to neoplasms of the upper limb including skin cancer, sarcoma and bone tumours, - modalities of treatment including non-surgical and surgical options, - surgical margins for the commoner tumours, - options for reconstruction of the surgically excised defect, - adjuvant treatments used in combination with surgery for malignant

	neoplasms.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess and deliver non-operative management of the Child's Hand disorder, - in respect of cancer diagnoses demonstrates the skill set necessary to advise a patient of such diagnosis. - work and communicate within the relevant multidisciplinary team (MDT) <p>INTERMEDIATE Should demonstrate ability to apply a working knowledge of the management algorithms to the conditions covered in this module.</p> <p>ADVANCED Should demonstrate</p> <ul style="list-style-type: none"> - skills of analysis and diagnostic synthesis, judgement, and surgical planning. - in respect of the Child's Hand, the ability to advise regarding timing of reconstruction and effect of growth on reconstructive surgery previously performed, - in respect of vascular disorders shows the ability to advise regarding conservative, non-surgical and surgical treatment options, - in respect of neoplastic conditions of the upper limb the shows the ability to provide detailed advice on the treatment pathway, including interpretation of specialist imaging, within the context of the relevant MDT.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - surgery for uncomplicated traumatic conditions of the Child's Hand, - excision of small superficial vascular malformations, - ganglion excision (dorsal wrist, volar wrist, DIPJ) - safe biopsy for suspected tumours of the upper limb <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - trigger thumb/finger release simple syndactyly separation correction of duplicate thumb correction of polydactyly - reconstruction of vascular defects by vein grafting, - excision of vascular malformations involving multiple tissue layers, - fasciotomies for compartment syndrome, - excision of giant cell tumour of tendon sheath, - excision/curettage enchondroma, - removal of swellings from nerves e.g. Schwannoma - excision of other benign tumours of bone and soft tissue. <p>ADVANCED Should be able to perform:</p> <ul style="list-style-type: none"> - complex syndactyly correction - radialisation radial club hand - application external distraction devices for radial club hand - pollicisation - cleft hand correction - recreation of first web space (various conditions) <p>- excision of major vascular malformations and reconstruction resultant</p>

	defects - excision of malignant tumours of bone and soft tissue including compartmentectomy and reconstruction of resultant defects. - axillary lymphadenectomy

Aesthetic Surgery Overview

Aesthetic Surgery is a special interest area within Plastic Surgery. Training has been provided within Plastic Surgery, historically. Training opportunities, within the NHS, are diminishing with the increasing eradication of aesthetic surgery from the NHS by purchasing Authorities. Specific measures to train specialists need to be taken in order to ensure competence on award of CCT and protect patients.

In addition to Plastic Surgeons other specialties have practiced Aesthetic Surgery in the past and will continue to do so. Training opportunities within each specialty have been variable and not subject to a cohesive structure creating issues of quality assessment. This is clearly an anomaly, which must be addressed.

One of the problems in designing training is that different surgeons from different specialties will benefit from different skill sets appropriate to each specialty's needs. Currently trainees are, in general, trained within their parent specialty without exposure to the other disciplines. This is a disadvantage, particularly to those who are not trained comprehensively in Plastic Surgery.

There is currently no real framework for aesthetic training and this syllabus should start to address this issue.

Allied Disciplines:

- OMFS – Module 2, 3, 5
- Otolaryngology – Modules 3, 5
- Breast Surgery – Module 1
- Ophthalmology – part of Module 2
- Dermatology – part of Module 5

Purpose and Structure of Training in Aesthetic Surgery

The purpose of training in aesthetic surgery is to become competent in the management of aesthetics.

Candidates for training in aesthetic surgery should have:

Successfully completed the Intercollegiate Specialty Examination in Plastic Surgery; FRCS(Plast).

Declared an interest in aesthetic surgery which has been supported by their Program Director

Training in aesthetic surgery is part and parcel of the wider programme in plastic surgery with specific fellowships usually taking place towards the end of surgical training and prior to CCT. Many of the skills attained from aesthetic practice are pertinent to reconstructive practice of the same anatomical areas for which reason numbers of UK-based plastic surgery programmes are funded by deaneries to rotate to the private sector. Other programmes encourage *ad doc* attendance at aesthetic surgery sessions. Most trainees by the end of Intermediate Years will therefore have the equivalent of 6 months aesthetic practice. Trainees eligible for fellowships including the TIG fellowships in Reconstructive and Cosmetic Surgery will usually be in ST7 and ST8. The duration of such fellowships is typically between 3 and 6 months depending on the level of competencies previously attained.

Modules:

1. Aesthetic Surgery of the Breast
2. Aesthetic Surgery of Face, Orbit & Neck Rejuvenation
3. Rhinoplasty and Otoplasty
4. Rejuvenation/restoration of the trunk, body contouring, liposuction & fat grafting
5. Non-surgical rejuvenation

Aesthetic Surgery Modules

Topic	AESTHETIC
Category	ST7/8 Final Years and TIG Fellows
Module 1	Aesthetic Surgery of the Breast
Objective	<i>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.</i>
Knowledge	<p>BASIC Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - applied and surgical anatomy of the breast, its blood, nerve supply and function, - development of the breast and congenital deformity and variations of breast form and associated structures, - hormonal control of the breast and its pathology, when deranged, - breast physiology in pregnancy and lactation, - benign pathologies of the breast, - presentation, clinical features of breast cancer, its staging, prognosis and management pathways, - effect of ionizing radiation on the breast and implants, - planning incisions on the breast. - closure and management of breast wounds. - self-perception and self-consciousness in relation to breast conformation and proportion including the social and sexual dimensions, - pathology of deranged self-image. <p>INTERMEDIATE Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - content, structure, physical and biological properties of breast implants, - spectrum of implants available and their applications, - design, principles and applications of tissue expanders, - nature, physiology and behaviour of implant capsules, - management of capsular contractures. - biology, implications, avoidance of and management of implant infection, - various designs and approaches to breast augmentation and their applications. - the issues surrounding breast size and its assessment. - complications of breast augmentation and their management. - various designs and patterns of breast reduction and mastopexy, - complications and management of breast reduction/remodelling. - presentation, management and complications of gynaecomastia. <p>ADVANCED Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - assessment of envelope and volume in relation to breast asymmetry, both developmental and acquired, - classification and management pathways of the tuberous breast, - management pathways and choices in breast asymmetry, - impact of breast reconstruction choices on symmetry, - effect of time, ageing and pregnancy on breast asymmetry correction, - various techniques of breast reconstruction, their applications, design and planning,

	<ul style="list-style-type: none"> - complications of breast reconstruction, - techniques for salvage of failed breast surgery, - techniques for nipple reconstruction, including considerations of sequence and timing, - features of dysmorphophobia, - psychosexual dimension in aesthetic breast surgery.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess and undertake non-operative of the management of the acute surgical patient, - take a targeted breast history, - perform patient examination including breast examination with reference to aesthetic considerations. <p>INTERMEDIATE Demonstrate knowledge of the management algorithms for the procedures covered in this section including investigations.</p> <p>ADVANCED Should be able to</p> <ul style="list-style-type: none"> - demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning, - assess and accurately record aesthetic concerns about the breast, - formulate management plans in relation to aesthetic interventions, - clearly explain, consent and counsel potential patients for aesthetic breast surgery, - assess the psychological suitability for aesthetic breast surgery and appropriately refer for expert psychological advice as necessary, - undertake risk benefit analysis of non-pathological based surgery, - deal with disappointment and postoperative dissatisfaction
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - planning, execution and closing incisions on the breast with reference to aesthetic principles and sub units. - designing and conduction of excision of skin lesions of the breast, - undertaking an aesthetic approach to removal of benign lesions of the breast, - scar revision in aesthetic breast surgery <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - correction of the inverted nipple (various techniques), - bilateral breast augmentation by various routes, in various planes, - Wise pattern bilateral breast reduction, - vertical pattern bilateral breast reduction, - bilateral mastopexy of periareolar, vertical and Wise patterns, - excision of gynaecomastia, incorporating various forms of liposuction as appropriate. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - correction of the spectrum of nipple deformities, - unilateral or differential breast augmentation to attain symmetry, - unilateral or asymmetric breast reduction in pattern or volume to attain symmetry, - synchronous mastopexy and breast augmentation in several patterns, - correction of tuberous breast by combinations of mastopexy, augmentation or tissue expansion,

	<ul style="list-style-type: none"> - unilateral or differential mastopexy in pattern or extent to attain symmetry. - revision procedures following previous aesthetic surgery of the breast. - aesthetic surgery of the breast as above in patients with previous breast cancer or irradiation. - fat grafting for minor deformities of the breast.
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Topic	AESTHETIC
Category	ST7/8 Final Years and TIG Fellows
Module 2	Aesthetic Surgery of Face, Orbit & Neck Rejuvenation
Objective	<i>Acquires competence in the diagnosis, aesthetic assessment and safe management of all patients presenting for consideration of avoidance or reversal of the features of physiological aging of the face, brow, neck and orbits.</i>
Knowledge	<p>BASIC Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - psychology of the desire for anti-aging interventions, - features denoting high-risk groups of patients that may present for surgical rejuvenation, - normal facial anatomy and its common variants, including clear understanding of the blood supply, sensory and motor innervation, - facial musculature and the course and distribution of the facial nerve, - the fascial planes of the face and the brow and the pattern of fascial compartments of the brow, face and neck, - anatomy of the eyelids, - cosmetic units of the face, - the effect of sun exposure on the texture and elasticity of the skin and the patterns of aging, - effect of various laser/light treatments on the dermis, - mechanisms of healing of partial thickness injury in facial skin, - formulation and application of chemical peeling agents. <p>INTERMEDIATE Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - accurate assessment and analysis of the pattern of face aging, - injectable fillers available, their uses, contraindications and interactions, - complications of various fillers and their management, - pharmacology of paralytic agents, the different formulations and the muscle groups to which they may be applied, - role of fillers and paralytics in the overall patient management plan, - indications for, and design of, endoscopic and open browlift and foreheadplasty, - fixation methods in brow lift, - indications and contraindications for facelift, - anatomy of the SMAS layer and how it may be modified, - facial fat pads and how they change with time, - variation of designs for facelift incisions, - different methods of facelifting, - different methods of necklifting, - designs and variations of blepharoplasty, upper and lower, - role of submental lipectomy and liposuction, - management of complications of rejuvenation surgery. <p>ADVANCED Should be able to demonstrate knowledge of</p>

	<ul style="list-style-type: none"> - choice of brow lift and its combination with upper lid surgery and facelift, - choice of facelift for a given pattern of aging, - design and application of deep plane lifts and isolated midface lifting, - importance and role of volumetric enhancement in facial contouring, - applications, indications, limitations and complications of blepharoplasty alone and in combination with other techniques, - use and techniques of platysmaplasty including limitations and complications, appropriate addition of adjuvant techniques, resurfacing, fillers, lip enhancement and lift, - impact of manipulations of the teeth dentures, the facial plane including genioplasty.
<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess and deliver non-operative management of the acute surgical patient, - take history to include features relevant to the assessment and management of the aesthetic features of the head and neck, - examine the patient to include relevant aesthetic features of the head and neck. <p>INTERMEDIATE Should be able to</p> <ul style="list-style-type: none"> - demonstrate knowledge of the management algorithms, combinations and permutations of the rejuvenation procedures covered in this section including appropriate investigations, - record accurate assessment of the pattern of symptoms and physical features. <p>ADVANCED Should be able to</p> <ul style="list-style-type: none"> - demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning, - prepare an overall management plan for a given patient, - assess the psychological suitability for rejuvenation surgery and appropriately refer for expert advice as necessary, - undertake risk benefit analysis of non-pathological based surgery, - counsel and consent a patient for rejuvenation intervention. - define the subgroup of patients that can be managed by nonsurgical intervention, - recognise and counsel the unrealistic patient, - manage the situation whereby a patient's best interests are served by declining to treat that patient, - deal with disappointment and postoperative dissatisfaction.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - planning, designing and performing excision of facial skin lesions for aesthetic indications, - selecting and using injectables for fine rhytids, - using paralytics to weaken aging muscle groups, - pan or regional facial rejuvenation by laser / chemical peel / dermabrasion, - upper lid blepharoplasty. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - assessment and analysis of all the features of the aging eyelid, - open browlift, - skin only facelift,

	<ul style="list-style-type: none"> - facelift with plication of the SMAS, - MACS lift, - neck lift, - dermofat grafting in the lip and other areas, - submental lipectomy, - liposuction for the face and neck areas. - lip lift. <p>ADVANCED</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> - endoscopic brow lift or foreheadplasty, - SMAS lifting, - deep plane facelifting, - isolated midface or SOOF lift, - platysmaplasty, - rejuvenation by lipofilling/fat graft, - lower lid blepharoplasty by external or transconjunctival approaches, - repositioning or correction of position of the outer canthus or treatment of the lax lid for cosmetic indications, - revision of failed procedures and suboptimal results, - repeat facelifting of any design.
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Topic	AESTHETIC
Category	ST7/8 Final Years and TIG Fellows
Module 3	Rhinoplasty and Otoplasty
Objective	<i>Competence in the diagnosis, planning and management of all aspects of aesthetic nasal and aesthetic ear surgery.</i>
Knowledge	<p>BASIC</p> <p>Should demonstrate knowledge of</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - anatomy of the nose including detailed description of the bone, cartilage, soft tissue structures, aesthetic units, - blood supply of the nose including ophthalmic artery, facial artery and angular artery as well as nerve supply, - physiological functions of the nose and how these may be affected by nasal surgery, - facial aesthetics including the psychological implications of rhinoplasty surgery, - dysmorphophobia and recognises clinical features of condition, - local anaesthesia and the use of topical agents such as cocaine. <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - anatomy of the ear including embryology and growth (including nomenclature of different elements of the ear), - blood supply of the ear including branches from external carotid artery, posterior auricular artery and superficial temporal artery, - nerve supply of the ear including auriculotemporal nerve, great auricular nerve, branches of the vagus nerve and lesser occipital nerve. <p>INTERMEDIATE</p> <p>Should demonstrate knowledge of</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - techniques to manage the nasal dorsum including dorsal hump reduction and dorsal augmentation,

	<ul style="list-style-type: none"> - different osteotomy techniques including placement of osteotomies, - techniques of endonasal and open approaches, including appropriate selection of surgical technique, - management of the alar cartilages and septum including resection, dome suturing and cartilage grafting techniques, - endonasal and open approaches to rhinoplasty, - techniques for nasal tip adjustment including resection, suturing, control of projection. - management of septal trauma <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - appropriate age-related considerations in respect of timing of otoplasty, cartilage maturation, - non-surgical management including neonatal moulding techniques, - anaesthesia including use of local anaesthesia and appropriate infiltration/blocks, - classification of prominent ears and definitions of cup ear, lop ear and Stahl's deformity, - surgical techniques for prominent ear correction including cartilage scoring e.g. Chongchet and suture-only techniques e.g. modified Mustardé, - various dressing techniques with their relative merits, - potential complications of prominent ear correction with risk factors for the same, including infection and necrosis of cartilage and skin. <p>ADVANCED Should demonstrate knowledge of</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - complications of rhinoplasty surgery including functional complications, - secondary rhinoplasty techniques with indications for same. <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - the reconstructive techniques available for treatment of significant necrosis or deformity following prominent ear correction.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - arrange appropriate views for clinical photographic record, - elicit focussed history in respect of the rhinoplasty patient, - examine patient with reference to the nose including preoperative analysis of appearance and function, - recognise the need for psychological assessment and identifies dysmorphophobia. <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - clinically assess the patient with reference to the external ear and demonstrates appropriate communication when dealing with the paediatric patients, - arrange appropriate views for clinical photographic record, - take consent for primary otoplasty modifying communication when dealing with paediatric patient, - recognise the need for psychological assessment and identifies dysmorphophobia. <p>INTERMEDIATE Should demonstrate ability to</p>

	<p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - clinically assess and analyse nasal defects including issues of balance and proportion., - make a surgical plan for primary rhinoplasty using skills of analysis and judgement - counsel and consent patient for rhinoplasty surgery, - recognise and counsel the unrealistic patient, - explain to patient when rhinoplasty not in best interests of patient. <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - clinically assess and analyse ear deformities including issues of symmetry and proportion, - make a surgical plan for primary otoplasty using skills of analysis and judgement, - counsel and consent patient for otoplasty surgery, - recognise and counsel the unrealistic patient, - explain to patient when otoplasty not in best interests of patient. <p>ADVANCED Should demonstrate ability to</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - examine the patient with reference to the nose including preoperative analysis of appearance and function, - deal with disappointment and postoperative dissatisfaction. - make a surgical plan for secondary using skills of analysis and judgement, - counsel and consent patient needing secondary rhinoplasty surgery, - recognise and counsel the unrealistic patient, - explain to patient when rhinoplasty not in best interests of patient. <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - deal with postoperative complications, - deal with disappointment and postoperative dissatisfaction, - make a surgical plan for secondary otoplasty using skills of analysis and judgement - counsel and consent patient for secondary otoplasty surgery - recognise and counsel the unrealistic patient.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - application of internal and external nasal splints, - drainage of septal haematoma - harvesting cartilage graft from ear and costochondral junction, - nasal packing for bleeding - infiltrating nose with local anaesthetic and administer topical agents such as cocaine, - osteotomies of nasal bones (various patterns). <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - infiltration of ears with local anaesthesia including greater auricular nerve blocks, - application of prominent ear head dressing. <p>INTERMEDIATE Should demonstrate ability to</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - closed approach to the septum with or without concomitant rhinoplasty

	<ul style="list-style-type: none"> - submucous resection of spurs - approach to the septum during open rhinoplasty - enlargement of septal perforation to reduce symptoms - cartilage graft harvest from nasal septum, - adjustment of nasal dorsum including dorsal hump, reduction and dorsal augmentation. <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - primary otoplasty with cartilage-scoring techniques, - primary otoplasty with suture-only techniques, - management of complications including haemorrhage, infection and necrosis of skin and cartilage. <p>ADVANCED Should be able to perform</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> - harvesting calvarial bone graft, - septoplasty surgery including scoring and SMR techniques, - septoplasty with or without cartilage grafting - management of complications including haemorrhage, - secondary procedures to correct unsatisfactory results, - closure of septal perforation - reconstruction of septum for nasal support <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> - secondary procedures to correct unsatisfactory results including ear reconstruction techniques (see Ear Reconstruction Module), - techniques to correct other deformities such as cup ear, lop ear and Stahl's deformity.

Topic	AESTHETIC
Category	ST7/8 Final Years and TIG Fellows
Module 4	Rejuvenation/restoration of the trunk, body contouring, liposuction & fat grafting
Objective	<i>Acquire competence in the assessment, planning correction and management of all aspects of body lifting and contouring</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of the skin and subcutis, - patterns and organisation of the blood and nerve supply of the relevant regions of the skin, - pattern of relaxed skin tension lines over the whole body, - pathogenesis of thromboembolic disease, and the prophylaxis and management of these disorders, - selection of appropriate prophylactic antibiotics. <p>INTERMEDIATE Should demonstrate knowledge of</p>

	<ul style="list-style-type: none"> - principles of bariatric surgery, - metabolic consequences of bariatric surgery, - pathogenesis, effects and management of tissue necrosis, - appropriate placement of incisions for best aesthetic outcome, - complications of skin-tailoring surgery, - principles of liposuction and know of the different devices and their relative risks and benefits, - effects of postoperative changes in body weight and pregnancy in this group of patients, - pathology and principles of fat grafting. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - psychological condition of dysmorphophobia, - condition of monosymptomatic hyperchondriacal psychosis, - psychosexual impacts of body image disorder, - patterns of acquired skin excess, - syndromic abnormalities of skin laxity, - forms of lipodystrophy, its patterns and presentations, - specific complications of the various techniques of liposuction, - techniques, donor sites and morbidity of fat grafting, - the developing research into trophic/non-volumetric effects of fat grafts.
<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess and deliver non-operative management of the acute surgical patient, - take history to include features relevant to the assessment and management of body contour problems, - examine the patient with reference to patterns of skin excess and laxity to include assessment and documentation of symptomatically displeasing body contours. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - undertake clinical assessment for the perceived deformities covered in this module. - translate presenting complaints into an appropriate plan for potential intervention, - recognise the patient seeking treatment of obesity by body contouring. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - make a surgical plan for the individual patient in respect of conditions covered in this module using skills of analysis and judgement, - assess the psychological suitability for body contouring surgery and appropriately refers for psychological advice as necessary, - perform risk-benefit analysis of non-pathological based surgery, - counsel and consent a patient for an episode of body contouring surgery, - communicate the range of secondary effects of a given operation and suggest adjuvant procedures or alternative techniques, - accurately assess local volume excess and translate that into a plan for liposuction, - recognise lipodystrophies, - recognise local fat deficiencies which will benefit from fat grafting, - recognise and counsel the unrealistic patient, - explain to patient when body contouring surgery not in best interests of patient,

	<ul style="list-style-type: none"> - deal with disappointment and postoperative dissatisfaction.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to undertake</p> <ul style="list-style-type: none"> - wound management and dressing care, - management of the necrotic wound and its defect, - range of wound closure techniques, - application of closed suction drainage. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - various patterns of abdominoplasty. - correction of lax abdominal musculature, - regional liposuction, - scar revision including management of the 'dogear', - fat graft harvest and preparation of fat grafts, - undertakes local lipofilling with fat graft. <p>ADVANCED Should be able to perform:</p> <ul style="list-style-type: none"> - modified abdominoplasty in the presence of unfavourable abdominal scarring. - brachioplasty. - BELT/body lift, - buttock lift, - thigh lift, - liposuction of the arms or distal to the mid thigh, major circumferential liposuction, - complex combination procedures, - major staged fat graft for general contour restoration, - secondary contouring procedures to correct unsatisfactory results.

Topic	AESTHETIC
Category	ST7/8 Final Years and TIG Fellows
Module 5	Non-Surgical rejuvenation
Objective	<i>Acquire competence in the management of the aesthetic patient using non-surgical enhancement techniques</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy and physiology of skin including classification of skin types, - normal ageing changes of skin including changes related to sun exposure, - range of products and non-surgical techniques available for non-surgical rejuvenation, - the role of these techniques, the indications for use as sole techniques and as adjuncts to other surgical procedures. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - specific patterns of ageing in different parts of the body with emphasis on face, neck and hands, - biology of scarring, pigmentation changes, and their modulation, - factors and conditions that may cause premature ageing including smoking and substance abuse, - mechanism of action, effects and duration of action of the products and techniques used for non-surgical rejuvenation. Specifically, the range of preparations of botulinum toxin, dose schedules and how to achieve complete and partial temporary paralysis of selected muscle groups. - the various filler injection preparations on the market and the literature regarding outcomes of the same (permanent, semi-permanent and temporary fillers). - different types of lasers available for aesthetic enhancement, their potential applications, mechanism of action, treatment schedules and useage. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - racial differences in skin type and the differences in response by skin type to the interventions described in this module, - complications of use of non-surgical techniques including use of hydroxyquinones, botulinum toxin overuse, scarring from chemical peel, laser, - regulatory framework for supply of relevant products on named patient basis. Know about the regulation of non-surgical rejuvenation including the legislation and safety requirements on the use of lasers.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - elicit relevant features in patient history including the specific concerns of the patient, - identify and enumerate the features of facial ageing and examines the skin and underlying tissues to demonstrate those features. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - identify evidence of previous treatments including active botulinum toxin, stigmata of laser resurfacing / dermabrasion / microdermabrasion, - formulate management plan for the optimal enhancement of the facial

	<p>aesthetic patient by non-surgical techniques,</p> <ul style="list-style-type: none"> - optimize the sequencing of the recommended treatments, - undertake basic functional and psychological assessment of patient's needs, - show ability to take clinical photographs and catalogue within the legislative framework of the Data Protection Act, and offer appropriate explanation to patient regarding the safeguarding and use of their images. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - record the patient's pretreatment status and progress using charts. - formulates management plan for use of techniques in the patient who has previously undergone facial rejuvenation surgery including amelioration of the unsatisfactory result by non-surgical means. - demonstrate planning and prescription of dermatological formulations in the form of skin care regimen for skin stimulation and skin lightening (tretinoin based / glycolic acid based). - modify the original prescription of dermatological formulations based on patient response.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - injection techniques to the facial area including simulation exercises, - steroid injection for hypertrophic or keloidal scar, - filler injections for facial rhytids or small depressed scars. <p>INTERMEDIATE Should be able to administer</p> <ul style="list-style-type: none"> - botulinum toxin injections to glabella, forehead, periorbital, perioral and cervical areas for targeted muscle paralysis. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - laser resurfacing treatment for skin resurfacing including fractionated CO2, erbium, NdYAG (hair removal) - chemical peel for facial rejuvenation using trichoroacetic acid / glycolic acid, - micropigmentation techniques for aesthetic enhancement. - microneedling for refinement of mature scar.

Burns Surgery Overview

Purpose and Structure of Training in Burn Surgery

The purpose of training in burn surgery is to become competent in the management of burns.

Candidates for training in burn surgery should have:

- Successfully completed the Intercollegiate Specialty examination in plastic surgery
- Declared an interest in burn surgery which has been supported by their Program Director

Training in burn surgery will typically take place towards the end of surgical training, but will be undertaken prior to CCT. Accordingly eligible trainees will usually be in ST7 and ST8 in plastic surgical training.

The indicative duration of training will be 12 months (at least 6 months of which will either be in a formal Burns Fellowship or in a Burns Centre) for level I trainees and 6 months in posts where specialist burn training is available for level II trainees.

Syllabus Structure

The syllabus is structured on a modular basis. The modules are based on the published guidelines 'European Practice Guidelines for Burn Care Based by the Copenhagen EBA meeting, September 2002' (EBA March 2003).

The modules are as follows:

1. Classification, primary management and transfer
2. Resuscitation and critical care
3. Early surgery
4. Late surgery
5. Infection and other complications
6. Paediatric burns

The topics in each module are divided into knowledge, clinical skills and technical skills. They are ordered by progressive complexity (basic, intermediate and advanced).

It is envisaged that level I trainees will achieve:

- Level 4 competence in all basic topics in every module
- Level 4 competence in all intermediate topics in every module
- Level 4 competence of all advanced topics in every module

These individuals will be capable of working as consultant plastic surgeons in burn **centres** and **units**.

It is envisaged that level II trainees will achieve:

- Level 4 competence in all basic topics in every module
- Level 4 competence in all intermediate topics in every module
- Level 4 competence of all advanced topics in modules 1 and 2

These individuals will be capable of working as consultant plastic surgeons in burns **facilities** managing patients presenting with burns who do not require transfer to burns units or centres. They will also be able to manage patients repatriated from burns centres and units.

In respect of quality indicators for burns surgery:

Unless otherwise specified it is assumed that all topics apply to both adult and paediatric patients and that the specific differences between the two are to be appreciated. Training must include adequate exposure to both.

Burns Surgery Modules

Topic	BURNS
Category	ST7/8 Final Years
Module 1	Classification, primary management and transfer
Objective	<i>Acquire competence in the initial management of patients with burns in the emergency department and their transfer to an appropriate burns facility/unit/centre.</i>
Knowledge	<p>BASIC Should be able to describe in detail the knowledge set contained in the courses: ATLS EMS or AMLS PALS/APLS</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of the body surface, physiology, pathophysiology of burn injury, - factors influencing burn healing, - blood supply of skin, - the timing and rationale for antibiotic use - timing of initial surgery, - appropriate pre-operative investigations, - classification of burn injury, - resuscitation options, - importance of specialist centres, MDT and interdisciplinary communication, especially with anaesthetic and paediatric colleagues - the role of other members of team including microbiologists, physiotherapy, occupational therapy, - paediatric fluid regimes, - features and management of toxic shock syndrome, - an overview of non-accidental injury. <p>INTERMEDIATE</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - differing roles of burn facilities, units and centres. - pathophysiology of burns and their classification, - management of specific injuries e.g. inhalation, chemical and electrical burns, - non-accidental injury, - various transfer options available for the burn patient, <p>ADVANCED</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - management of the multiply-injured burn patient, - controversies and issues arising as a result of a decision not to resuscitate, - other protection issues, - the impact of disfigurement, the consequences of an altered appearance, what it involves psychologically and socially, and the

	<p>impact of an individual's body image on their life and that of their family.</p> <ul style="list-style-type: none"> - the process by which an individual can successfully adjust to disfigurement and explain how the multidisciplinary team can assist with that process.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - elicit burn-related history, - assess and plan the non-operative management of burn injury, - recognise life-threatening injuries, - perform examination to including assessment of severity (extent and depth) of injury, - assess vascular status of limb, - assess the presence of compartment syndrome. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - prepare a range of management options for the conditions covered in this module. - work with other agencies in non-accidental injury. <p>ADVANCED Should demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning relevant to the subjects specified in this module.</p>
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - assessment of burn area and depth, - adjunctive techniques for depth assessment, - escharotomy and fasciotomy, - application and change of burn dressings. <p>INTERMEDIATE Demonstrate ability to use epidermal substitutes.</p> <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - airway management including performing tracheostomy, - stabilising associated injuries and bleeding.

Topic	BURNS
Category	ST7/8 Final Years
Module 2	Resuscitation and critical care
Objective	<i>Acquire competence in the initial resuscitation of a burn patient and ongoing critical care.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - options for airway management, - pathophysiology of burn shock, - resuscitation regimes,

	<ul style="list-style-type: none"> - wound dressings, - pathophysiology of inhalation injury. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of early burn debridement, - principles and management of burns and the relevance to subsequent soft tissue reconstruction, - relevance of pharmacological interventions including antibiotics and inotropes, - management of inhalation injury including bronchoscopy, - metabolic response to the burn injury, - palliative care in respect of the burn patient. <p style="text-align: right;">- PHDU practices.</p> <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - microbiology of burns, - principles of ventilation, - nutritional support, - PICU practices.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess burn injury, - manage large burn wounds, - apply temporary dressings e.g. negative pressure. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - manage more complex burns, - resuscitate burns with TBSA <40%, - explain the problems associated with the extremes of age and of polytrauma, - prescribe appropriate antibiotics (antibiotic stewardship), - undertake nutritional management of burns patients, - provide detailed advice on the treatment pathway within the context of the relevant MDT. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - recognise injuries that would benefit from primary amputation, - manage the metabolic response, - resuscitate burns with TBSA >40%.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - endotracheal intubation, - appropriate pre-washing and prepping burn during dressing change, - escharotomy and fasciotomy, - application of a range of burns dressings e.g. Biobrane, Flamazine. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - elective tracheostomy, - adequate debridement of injured soft tissues to achieve a stable wound approaching elective conditions (including fascial excision), - planning of future soft tissue reconstruction.

	<p>ADVANCED</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> - endotracheal intubation, - bronchoscopy, - basic ventilator management, - amputation of non-salvageable limbs.

Topic	BURNS
Category	ST7/8 Final Years
Module 3	Early surgery
Objective	<i>Acquires competence in the planning and execution of appropriate early surgery in burns.</i>
Knowledge	<p>BASIC</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of skin, - classification of burn injury by zones, - benefits and disadvantages of both early excision and conservative management. <p>INTERMEDIATE</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - options available for early surgery, - requirements of special sites, - principles of management of more complex injuries, including polytrauma, - planning and prioritising treatment within an MDT setting. <p>ADVANCED</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - management of more complex injuries, and polytrauma, - surgical management of the burn, - principles and use of dermal and epidermal substitutes, - principles of cell culture.
Clinical Skills	<p>BASIC</p> <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assesses burn injuries and demonstrates recognition of injury patterns. - use simple management techniques including use of appropriate dressings, - prescribe appropriate antibiotics, - plan burn excision and grafting, - use of epidermal substitutes such as Biobrane. <p>INTERMEDIATE</p> <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate management algorithms for the common patterns of burn injury, - plan total and staged burn excision and grafting, - apply psychological assessment tools for evaluation of psychological

	<p>needs (patient questionnaires).</p> <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate management algorithms for complex burn injuries, - arrange patient-centered care with patient as partner in the process, providing realistic information and guiding patient decision-making regarding choices available and timing of those treatments, - manage and lead the multi-disciplinary teams in respect of provision of psycho-social care - be able to arrange the care pathway that supports an individual to successfully adjust to disfigurement through giving the individual and family specific life-skills. These include the patient being provided with information about their condition and its treatment, developing a positive outlook/belief system, learning to cope with their feelings, exchanging experiences with others who've "been there" and social skills training to manage other people's reactions.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - dressings care, - skin grafts of small to moderate areas. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - skin grafts of large areas, - plan and raise flaps where grafts are not appropriate, - early excision of paediatric burns to prevent systemic upset. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - resurfacing procedures using temporary skin cover, - resurfacing using skin substitutes, - limb amputations.

Topic	BURNS
Category	ST7/8 Final Years
Module 4	Late surgery
Objective	<i>Acquire competence in later burn management including the planning and execution of reconstructive surgery.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of skin and soft tissues, - pathophysiology of hypertrophic scars and keloids, - principles of scar management, - effect of growth on burn scars, - use of grafts and local flaps. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - indications for use of skin substitutes, distant flaps and free flaps,

	<ul style="list-style-type: none"> - stages of bereavement associated with loss of body image and the clinical and psychological supports that can be put in place to assist the patient cope with that loss. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of management of more complex injuries, - surgical options for late reconstruction, - novel therapies.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess burn scars and contractures demonstrating recognition of injury patterns, - use simple management techniques including use of splints and pressure garments, - plan release of burn scars using grafting and local flaps. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate management algorithms for the common patterns of burn scarring, - plan for the use of skin substitutes, distant flaps and free flaps. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - describe detailed management algorithms for complex burn injuries, - show understanding of the complexities of burn injury reconstruction in patients with polytrauma and significant co-morbidities.
Technical Skills and Procedures	<p>BASIC Should be able to perform burn scar grafting and local flaps including the Z-plasty and its variations.</p> <p>INTERMEDIATE Should be able to use skin substitutes and distant flaps of small and medium areas.</p> <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - resurfacing with skin substitutes, distant flaps and free flaps of medium and large areas. - late major amputations.

Topic	BURNS
Category	ST7/8 Final Years
Module 5	Infection and other complications
Objective	<i>Acquire competence in the diagnosis and management of burn infections and other complications</i>

Knowledge	<p>BASIC Should demonstrate knowledge of the microbiology of burns.</p> <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - metabolic derangement occurring in the burn patient, - concept and practice of antibiotic stewardship. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - antibiotic and antiseptic regimens and their rationale, - controversies regarding metabolic management, - multi-organ effects and systemic disturbance caused by burns.
Clinical Skills	<p>BASIC Should demonstrate ability to undertake wound assessment.</p> <p>INTERMEDIATE Should demonstrate ability for the clinical assessment and management algorithms for the infections and other burn complications.</p> <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess the unstable complex burn patient - make decisions on appropriate management issues. - interpret the range of investigations in the unstable complex burn patient to formulate management plans. - manage the iatrogenic injury.
Technical Skills and Procedures	<p>BASIC Should be able to undertake surgical management of wound infection.</p> <p>INTERMEDIATE Should be able to perform radical excision of burn wound for infection.</p> <p>ADVANCED Should be able to perform amputation and other life-saving surgery in the case of infection and other complications.</p>

Topic	BURNS
Category	ST7/8 Final Years
Module 6	Paediatric burns
Objective	<i>Acquire competence in the diagnosis and management of paediatric burns and the recognition of the need for multidisciplinary management.</i>
Knowledge	<p>BASIC The knowledge requirements are as per modules 1-5, in the context of the paediatric patient. Should demonstrate knowledge</p> <ul style="list-style-type: none"> - as defined by PALS/APLS, - paediatric fluid regimens, - toxic shock syndrome, - non-accidental injury.

	<p>INTERMEDIATE. As per modules 1-5, in the context of the paediatric patient. Demonstrates knowledge of PHDU practices.</p> <p>ADVANCED As per modules 1-5, in the context of the paediatric patient. Should demonstrate knowledge</p> <ul style="list-style-type: none"> - other child protection issues. - PICU practices
Clinical Skills	<p>BASIC As per modules 1-5, in the context of the paediatric patient. Works with other agencies in the event of non-accidental injury.</p> <p>INTERMEDIATE As per modules 1-5, in the context of the paediatric patient. Works with the paediatric elements of the MDT. Applies the law in respect of non-accidental injury and communicates with appropriate parties.</p> <p>ADVANCED As per modules 1-5, in the context of the paediatric patient.</p>
Technical Skills and Procedures	<p>BASIC As per modules 1-5, in the context of the paediatric patient. Should be able to apply Biobrane and similar dressings.</p> <p>INTERMEDIATE As per modules 1-5, in the context of the paediatric patient. Should be able to perform early excision of burns to prevent systemic upset.</p> <p>ADVANCED As per modules 1-5, in the context of the paediatric patient.</p>

Cleft Surgery Overview

Cleft Surgery is an “Interface Specialty” in that training can be provided by either or all of three parent specialties, OMFS, Otolaryngology and Plastic Surgery. Each of these disciplines will provide differing skills training as well as a differing perspective on the treatment of various conditions in hand surgery.

At present, there is a single route to obtain advanced training in cleft surgery in the United Kingdom. The trainee joins one of the five available “Interface” Training Interface Group fellowships whilst remaining attached to the host unit in either Plastic or Maxillofacial surgery for any additional work (such as on call commitments).

Those undertaking a TIG fellowship receive training in all parent specialties, a system that is designed and scrutinised for its ability to produce a specialist who can work as a cleft surgeon based in the department of the parent specialty.

Allied Disciplines

- Otolaryngology
- Oral and Maxillofacial Surgery (OMFS)

Purpose and Structure of Training in Cleft Surgery

The purpose of training in cleft surgery is to become competent in the management of clefts.

Candidates for training in cleft surgery should have:

- Successfully completed the Intercollegiate Specialty examination in plastic surgery
- Declared an interest in cleft surgery which has been supported by their Program Director

Training in cleft surgery will typically take place towards the end of surgical training prior to CCT. Accordingly eligible trainees will usually be in ST7 and ST8 in plastic surgical training. The indicative duration of training will be between 12 and 24 months on the TIG Cleft Fellowship depending on the acquisition of previous skills.

Syllabus Structure

The syllabus is structured on a modular basis.

The modules are as follows:

1. Primary management of cleft lip and nose
2. Secondary repair of cleft lip and nose
3. Primary repair of cleft palate

4. Secondary speech surgery
5. Dento-alveolar defect including alveolar bone grafting
6. Orthognathic Surgery / Working with the Cleft MDT

Cleft Modules

Topic	CLEFT
Category	ST7/8 TIG Fellows in Cleft Surgery
Module 1	Primary management of cleft lip and nose
Objective	<i>Acquire competence in the management of the unrepaired cleft lip and nose deformity.</i>
Knowledge	<p>BASIC</p> <p>Should be able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> - surgical anatomy, pathological anatomy, embryology and basic genetics of facial clefting and associated anomalies. - past and current and protocols for repair of cleft lip and palate. - content of the Paediatric Intermediate Life Support Course or equivalent course as currently approved by the Resuscitation council of the UK, and ability to resuscitate a child. - criteria that would constitute grounds for admission to Intensive Care Unit. - issues of non-accidental injury and child protection. Know the referral pathways for protection of the 'at-risk' child. <p>INTERMEDIATE</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - the different techniques for cleft lip and nose repair. - timelines and sequence of operative procedures. <p>ADVANCED</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - history of cleft lip and nose repair, and the outcomes as well as the means of measurement of outcomes for cleft lip and nose repair, - characteristic anatomical elements of the neonatal airway, and basis for tracheostomy in emergency circumstances where airway cannot be maintained mechanically, - alternatives for timing of different sequences and operations for repair of the cleft lip and nose.

Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take care of the pre and post-operative patient/child undergoing cleft surgery including assessment for anaesthetic risk factors, postoperative fluid management, antibiotic prescribing, - manage a naso-pharyngeal airway both in the peri-operative environment, and post-operatively, - take informed consent for the procedures covered in this module, - use the operating microscope, - present cases within the Cleft MDT. <p>INTERMEDIATE Should demonstrate ability to:</p> <ul style="list-style-type: none"> - counsel parents of new patients including those following ante-natal scan diagnosis, - plan appropriate treatment schedule within the context of the cleft MDT. <p>ADVANCED Should demonstrate ability to:</p> <ul style="list-style-type: none"> - formulate a management plan within the MDT as a fully integrated member of the team, - communicate with patients/families, - maintain and demonstrate the skills articulated in APLS/PALS, - recognise signs of non-accidental injury, risk factors, and family pathology.
Technical Skills and Procedures	<p>BASIC Should be able to mark up a cleft lip repair according to one of the currently accepted techniques.</p> <p>INTERMEDIATE Should be able to perform (in order) Muscle dissection, periosteal elevation, elevation of vomerine flap, suture of vomerine flap,</p> <p>ADVANCED Should be able to repair the cleft lip and nose according to one of the currently accepted techniques, vary a standard marking plan for subtle differences in the types of cleft lip or palate, perform (in order) nasal dissection, repair of mucosa and muscle, repair of ala base, placement of sutures for nasal suspension, lip closure, use of lengthening flaps, vermilion flap and mucosal balancing.</p>

Topic	CLEFT
Category	ST7/8 TIG Fellows
Module 2	Secondary repair of cleft lip and nose
Objective	<i>Acquire competence in the management of the previously repaired cleft lip and nose deformity.</i>
Knowledge	<p>BASIC Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - surgical anatomy, pathological anatomy and physiology of the cleft nose, - rhinoplasty techniques for reconstruction of cleft nasal deformity. <p>INTERMEDIATE</p>

	<p>Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - facial morphology and aesthetics, - basic cephalometric planning techniques and <p>ADVANCED Should be able to demonstrate:</p> <ul style="list-style-type: none"> - detailed knowledge of soft tissue flap and composite graft techniques for contour and scar modification. - understanding of muscle dissection methods and transposition to correct functional and aesthetic abnormalities, - Knowledge of cleft nasal defect to include familiarity with current literature on the same, and - detailed knowledge of elements of aesthetic rhinoplasty where applicable to cleft rhinoplasty.
Clinical Skills	<p>BASIC Should demonstrate ability to correctly elicit patients' concerns and their perceptions of the conditions.</p> <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - assessment lip and nose disability including alveolar fistula. <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> - determine the optimum timing of surgery and decide on priorities for treatment, - communicate with the MDT, - know when to recruit help of a clinical psychologist. <p>ADVANCED Should be able to demonstrate skill in formulating plan for surgical correction of secondary deformities of the cleft lip and nose within the context of the integrated (MDT) care of the patient.</p>
Technical Skills and Procedures	<p>BASIC Should be able perform</p> <ul style="list-style-type: none"> - formulation of a design for correction of secondary deformities of the lip and nose, - skin markings - dissection of the lip, - closure of rhinoplasty incisions, - management of the cleft airway. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - formulation of designs for correction of secondary deformities of the lip and nose - dissection and suture of lip, degloving of nose, and ala reduction. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - design and execute complete revision of complex cleft deformity, including total lip revision and more subtle deformities in later years - (in order) the previous elements specified and proceeding to hump reduction with rasp, management of the septum, infrafracture, application of splint, - full cleft rhinoplasty.

Topic	CLEFT
Category	ST7/8 TIG Fellows
Module 3	Primary repair of cleft palate
Objective	<i>Competence in the assessment, surgical management and aftercare of primary cleft palate.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy, embryology and basic genetic of facial clefting and associated anomalies (as for Module 1). - knowledge of sequencing of procedures for cleft palate repair. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomical basis for surgical correction of palatal abnormalities <p>ADVANCED Should be able to explain</p> <ul style="list-style-type: none"> - detailed mechanisms of speech production, along with implications of various genetic conditions on speech (including Stickler's, 22q11 deletion, and other common disorders, - surgical procedures for correction cleft palate with historic and common internationally-performed variations.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take informed consent for the procedures specified in this module, - care skilfully for the pre and post-operative cleft palate patient/child, - use the operating microscope, - manage a naso-pharyngeal airway. <p>INTERMEDIATE Should be able to demonstrate proficiency in managing the child undergoing cleft palate repair of average complexity.</p> <p>ADVANCED Should be able to demonstrate proficiency to manage a child undergoing complex cleft palate repair including cases with associated disorders (syndromic cases), and cases with wide defects which generate significant postoperative potential airway and wound healing problems.</p>
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - marking up a cleft palate repair, - (in order) closure of oral layer, elevation of the oral layer in patients with isolated cleft palate. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - (in order) elevation of the oral layer in patients with unilateral and bilateral cleft lip and palate, closure of the nasal layer. <p>ADVANCED Should be able to perform</p>

	<ul style="list-style-type: none"> - repair of the palate and associated involved structures according to one of the currently accepted techniques (complete within timely manner), - muscle dissection, and demonstrate the vascular pedicle in repeated fashion' - adaptations of the standard procedure for anatomical variation.

Topic	CLEFT
Category	ST7/8 TIG Fellows
Module 4	Secondary speech surgery
Objective	<i>To develop competence in the management of speech disorders associated with cleft palate and related disorders</i>
Knowledge	<p>BASIC Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - the surgical anatomy, pathological anatomy and physiology of palatal function and abnormalities after cleft closure, including the pathophysiology of velopharyngeal incompetence (VPI). - the feeding mechanisms and relationship of infant feeding patterns to later speech development, - the physiology of the middle ear, Eustachian tube and causes of deafness in the cleft patient, - the clinical and investigative tools for examining speech development, - the place of surgical and orthodontic assistance to treatment of speech disorder <p>INTERMEDIATE Should be able to describe:</p> <ul style="list-style-type: none"> - the range of normal speech development mechanisms and how these are at risk in cleft disorders, - the impact of chronic otitis media on speech skills at school entry - the techniques used by speech and language therapists inputting into cleft management, and - the operations available for the amelioration of speech disorders including VPI. <p>ADVANCED Should be able to describe:</p> <ul style="list-style-type: none"> - the indications for investigation of speech disorder, methods and limitations, - the radiation protection protocols linked to such investigations, and - adult communication problems related to previous cleft palate repair and previous surgery for VPI.
Clinical Skills	<p>BASIC Should have ability to</p> <ul style="list-style-type: none"> - elicit speech disorders - liaise with Speech Therapists.

	<p>INTERMEDIATE Should have ability to</p> <ul style="list-style-type: none"> - interpret findings of nasendoscopy, - assess likelihood of patient co-operation with nasendoscopy, - formulate a treatment plan based on the nasendoscopy findings <p>ADVANCED Should demonstrate ability to:</p> <ul style="list-style-type: none"> - interpret an audiogram and tympanometry study, - describe the principles of brain stem evoked response audiometry, - and formulate an appropriate referral based on clinical history and audiogram.
Technical Skills and Procedures	<p>BASIC Not applicable.</p> <p>INTERMEDIATE Should be able to perform:</p> <ul style="list-style-type: none"> - nasendoscopy in the diagnosis of speech disorder. <p>ADVANCED Should be able to perform:</p> <ul style="list-style-type: none"> - skilful dissection of a previously repaired cleft palate as part of a correction for speech disorder - pharyngoplasty (various techniques).

Topic	CLEFT
Category	ST7/8 TIG Fellows
Module 5	Dento-alveolar defect including alveolar bone grafting
Objective	<i>To develop competence in the management of alveolar defects associated with cleft lip and palate.</i>
Knowledge	<p>BASIC: Should be able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> - the evolution of secondary dentition, - the clinical and investigative tools available to the orthodontist, - the related investigations and the basis for treatment of the secondary dentition, and - the anatomy of various potential sites for cancellous bone graft harvesting <p>INTERMEDIATE Should be able to describe:</p> <ul style="list-style-type: none"> - options and patient preferences for orthodontic treatment. - indications for pre-surgical orthodontic treatment, - the role of Paediatric Dentists including the basics of oral and dental hygiene, - the use of synthetic substitutes in dento-alveolar surgical practice, and - the methods of assessment of success of bone grafting, with

	<p>scoring techniques and relevant background in reasonable outcomes.</p> <p>ADVANCED: Should be able to describe:</p> <ul style="list-style-type: none"> - overview of surgical aspects of stomatological practice - principles of restorative dentistry, and role of such care within the holistic management of patients.
Clinical Skills	<p>BASIC Should be able to make clinical assessment of the secondary dentition. Should demonstrate ability to function and communicate within the framework of the Cleft MDT.</p> <p>INTERMEDIATE Should be able to:</p> <ul style="list-style-type: none"> - liaise appropriately with Orthodontic colleagues, and - liaise with and refer to Paediatric and Restorative Dental colleagues. <p>ADVANCED Should be able to devise complete management plan for the preoperative and postoperative care of the patient undergoing alveolar bone grafting.</p>
Technical Skills and Procedures	<p>BASIC Should be able to perform low scar access with harvest of iliac bone graft.</p> <p>INTERMEDIATE Should be able to perform bone grafting of the alveolus.</p> <p>ADVANCED Should be able to perform closure of an alveolar fistula with appropriate technique.</p>

Topic	CLEFT
Category	ST7/8 TIG Fellows
Module 6	Orthognathic surgery / Working with the Cleft MDT
Objective	<p><i>To acquire knowledge of the management of residual cleft deformity in adults including principles of orthognathics and related assessment / investigation</i></p> <p><i>To develop skills in participation in the Cleft MDT, including working with allied disciplines as a team member and team leader.</i></p>
Knowledge	<p>BASIC Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - the range of residual deformities that pertain at the cessation of facial growth, - the nasal septal deformities associated with clefting, - the self-image problems extending into adult life, - National guidelines for the diagnosis, treatment and follow up of cleft patients.

	<p>INTERMEDIATE Should demonstrate understanding of</p> <ul style="list-style-type: none"> - the role of the orthodontist in cleft care, - the surgical principles of orthognathic appliances and their use in practice, and - NICE Improving Outcomes guidance and Peer review. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - the surgical anatomy and pathological anatomy of the residual deformities of facial growth, - the principal methods of use in orthognathics including distraction osteogenesis, - methodology for research and audit with respect to cleft practice in local, national and international settings. <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - impact of disfigurement and altered appearance, what it involves psychologically and socially, and the impact of an individuals' body image on their life and that of their family, - the processes by which an individual can successfully adjust to disfigurement and explain how the multidisciplinary team can assist with that process.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assemble appropriate professionals to solve adults, concerns, - communicate and refer within the specialist MDT. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - undertake orthodontic measurement of mid-facial growth, - develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues, and - analyse and develop diagnostic and surgical planning within the context of an MDT, and - lead clinical discussion of cleft-related disorders for neonate, infant, pre-school, and later ages following consultations <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - undertake appropriate referral and liaison with Orthodontists, - to plan a program of orthognathic surgery including distraction osteogenesis, - to discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent, and - to lead whole clinic process for an entire MDT session
Technical Skills and Procedures	<p>BASIC Not applicable</p> <p>INTERMEDIATE Not applicable</p> <p>ADVANCED Not applicable</p>

Complex Wound Syllabus

The complex wound module is available as a single module that may be a specific choice for the Plastic Surgeon in General but may also be undertaken as an additional module by other trainees.

Topic	COMPLEX WOUND
Category	ST7/8 Final Years
Module (Single module)	Complex wound
Objective	<i>Overall competence in the diagnosis and management of the complex wound excluding burn injury</i>
Knowledge	<p>BASIC Should be able to describe:</p> <ul style="list-style-type: none"> - the principles of management of non-burn conditions managed by the burn team (including cold injuries, TENS and purpura fulminans). <p>INTERMEDIATE Should demonstrate knowledge of detailed management of non-burn conditions managed by the burn team (including cold injuries, TENS and purpura fulminans).</p> <p>ADVANCED Should be able to discuss the controversies regarding the management of non-burn conditions managed by the burn team.</p>
Clinical Skills	<p>BASIC Should demonstrate proficiency in</p> <ul style="list-style-type: none"> - clinical assessment of the non-burn injury, - liaison with other specialities - working and communicating within the relevant multidisciplinary team (MDT). <p>INTERMEDIATE Should be able to</p> <ul style="list-style-type: none"> - devise management plans and treatment algorithms for the conditions covered in this module, - apply psychological assessment tools for evaluation of psychological needs (patient questionnaires). <p>ADVANCED Should be able to</p> <ul style="list-style-type: none"> - deploy skills of analysis and diagnostic synthesis, judgement, and surgical planning to the complex wound patient - advise regarding timing of reconstruction and effect of growth on reconstructive surgery in paediatric cases, - provide detailed advice on the treatment pathway, including interpretation of special investigations, within the context of the relevant MDT, - demonstrate skills needed to arrange patient-centered care with patient as partner in the process, providing realistic information and guiding patient decision-making regarding choices available and timing of those treatments.

	<p>- manage and lead the multi-disciplinary teams in respect of provision of psycho-social care, to arrange the care pathway that supports an individual to successfully adjust to disfigurement through giving the individual and family specific life-skills. These include the patient being provided with information about their condition and its treatment, developing a positive outlook/belief system, learning to cope with their feelings, exchanging experiences with others who've "been there" and social skills training to manage other people's reactions.</p>
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to stabilise the complex wound patient for safe transfer to specialist centre. Should be able to apply negative pressure dressing.</p> <p>INTERMEDIATE Should be able to perform primary debridement and application of temporary wound dressings in theatre.</p> <p>ADVANCED Should be able to perform appropriate reconstruction of soft tissue defect using the range of available reconstructive techniques.</p>

Craniofacial Overview

Training in craniofacial surgery is arranged within plastic surgery and is not one of the Training Interface Group disciplines.

Allied disciplines

Oral and Maxillofacial Surgery (OMFS)

Syllabus Structure

This syllabus is structured on a modular basis and is closely modelled on the existing syllabus published on the ISCP platform.

The modules are as follows:

1. General Principles:

- Principles of the MDT and the 'Craniofacial Assessment' e.g. Psychology of facial difference and Speech and language assessment
- Anatomy & Embryology of craniofacial complex
- Craniofacial radiology
- Cephalometrics and facial analysis
- Surgical approaches to the craniofacial complex
- Orthognathic surgery relating to craniofacial syndromes
- Distraction osteogenesis of the craniofacial skeleton
- Implants and prostheses
- Trauma
- Emergency procedures
- Craniofacial aesthetic surgery

2. Craniosynostosis

- Single suture craniosynostosis
- Syndromic Craniofacial dysostosis

3. Craniofacial tumours in adults and children

4. Craniofacial syndromes of tissue deficiency

- Hemifacial microsomia
- Treacher Collins syndrome
- Craniofacial clefts & Encephalocoeles
- Binder's syndrome
- Holoprosencephaly
- Arrhinia
- Mandibular deficiencies - Pierre Robin

5. Craniofacial overgrowth syndromes

- Hemifacial hypertrophy
- Facial infiltrating lipomatosis
- Tissue overgrowth secondary to vascular malformations
- Beckwith Wiedemann Syndrome
- Proboscis

6. Orbital surgery

- Hypertelorism
- Microphthalmos
- Frontonasal dysplasia

Craniofrontonasal dysplasia
 Orbital malpositions and dystopias
 Vertical orbital dystopia: Late plagiocephaly and hemifacial microsomia

Craniofacial Modules

Topic	CRANIOFACIAL
Category	ST 7& 8 Final Years
Module 1	General Principles
Objective	<p><i>Principles of the MDT and the 'Craniofacial Assessment'</i> <i>e.g. Psychology of facial difference and speech and language assessment</i></p> <p><i>Anatomy & Embryology of the craniofacial complex</i> <i>Cephalometrics and facial analysis</i> <i>Orthognathic surgery relating to craniofacial syndromes</i> <i>Craniofacial radiology</i> <i>Trauma</i> <i>Emergency procedures</i> <i>Surgical approaches to the craniofacial complex</i> <i>Craniofacial aesthetic surgery</i></p>
Knowledge	<p>BASIC Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - embryology of the pharyngeal arch development and syndromes arising from developmental pathology, and should be to demonstrate proficiency in the descriptive anatomy of head and neck - multidisciplinary assessment of 'The Craniofacial Patient' (parameters including visual, audiological, airway, speech, feeding, psychological and neurological), - content of the Paediatric Intermediate Life Support Course or equivalent course as currently approved by the Resuscitation council of the UK. Know how to resuscitate a child, - criteria that would constitute grounds for admission to Intensive Care Unit, - issues of non-accidental injury and child protection, and the referral pathways for protection of the 'at-risk' child. <p>Should be able to describe the management of extravasation injuries</p> <p>INTERMEDIATE Should be able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> - cephalometrics: skeletal and dental occlusal relationships, SNA angle, SNB angle, facial reference points - cephalometric characteristics of craniofacial syndromes e.g. Crouzon syndrome, Treacher Collins syndrome (TCS) and hemifacial microsomia (HFM), definition of anterior open bite, cross bites etc. - distraction osteogenesis: history and application: mandible, alveolus, midface, orbit and cranium. <p>ADVANCED Should be able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> - anatomy of surgical approaches to craniofacial skeleton and

	<ul style="list-style-type: none"> - relevant local flaps (temporalis, superficial temporal etc), - facial analysis: choice of camera systems,CT, MRI and software analysis in surgical planning, - Craniofacial Radiology – recognition of tumour and threats to neurological function, - the multidisciplinary assessment of ‘The Craniofacial Patient’: specific tests – VEPs, sleep studies and psychological assessment scales, - impact of disfigurement, the consequences of an altered appearance, what it involves psychologically and socially, and the impact of an individual’s body image on their life and that of their family, - the processes by which an individual can successfully adjust to disfigurement, and how the multidisciplinary team can assist with that process.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - care for the pre and post-operative patient/child undergoing craniofacial surgery including assessment for anaesthetic risk factors, postoperative fluid management, antibiotic prescribing, - manage the airway both in the peri-operative environment, and post-operatively. - take informed consent for the procedures covered in this module, - present cases within the Craniofacial MDT <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - counsel parents of new patients including those following antenatal scan diagnosis for relevant syndromes. - apply psychological assessment tools for evaluation of psychological needs (patient questionnaires), - plan appropriate treatment schedule within the context of the craniofacial MDT <p>ADVANCED Should demonstrate ability to:</p> <ul style="list-style-type: none"> - formulate a management plan within the MDT as a fully integrated member/leader of the team and be able to communicate with patients/families, - manage and lead the multi-disciplinary teams in respect of provision of psycho-social care, - arrange the care pathway that supports a child and his/her family to successfully adjust to disfigurement through giving the individual and family specific life-skills. These include, where appropriate, the patient being provided with information about their condition and its treatment, developing a positive outlook/belief system, learning to cope with their feelings, exchanging experiences with others who’ve “been there” and social skills training to manage other people’s reactions, - maintain and demonstrate the skills articulated in APLS/PALS, and - recognise signs of non-accidental injury, risk factors, family pathology.
Technical Skills and Procedures	<p>BASIC Trauma: Should be able perform tracheostomy (emergency and percutaneous) and</p>

	<p>nasal packing for epistaxis</p> <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - intermaxillary fixation - emergency management of retrobulbar haemorrhage - emergency management of elevated ICP and/or intracranial haemorrhage, - various surgical approaches to the craniofacial skeleton: coronal and upper and lower buccal sulcus incisions. <p>ADVANCED Should be able to perform Orthognathic surgery relating to craniofacial syndromes. How to perform a Le Fort I +/- distraction osteogenesis, the sagittal split osteotomy, bimaxillary surgery, segmental orthognathic surgery, palatal expansion and segmental alveolar transport.</p> <p>Distraction osteogenesis of the craniofacial skeleton. Indications compared to traditional techniques. Device selection and application of chosen distraction device at all levels of the craniofacial skeleton. Knowledge of outcome studies.</p> <p>Implants and prostheses. Choice of alloplast for inlays and onlays. Osseointegrated implant choice, sites and design in conjunction with maxillofacial prosthodontist.</p> <p>Surgical approaches to the craniofacial skeleton: McCord lid swing, transconjunctival, transbleph, transcaruncular, Weber-Ferguson and open rhinoplasty, transbuccal. Levels of Craniofacial access.</p> <p>Craniofacial aesthetic surgery. Endoscopic techniques, subperiosteal surgery, genioplasty, advanced rhinoplasty.</p>
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Topic	CRANIOFACIAL
Category	ST 7&8 Final Years
Module 2	Craniosynostosis
Objective	<i>Management of single suture and syndromic craniosynostosis</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - surgical anatomy, pathological anatomy and pathophysiology of craniosynostosis, - common phenotypes and head shapes, and - positional vs synostotic plagiocephaly: torticollis. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - basic clinical genetics of craniosynostosis syndromes, - recognition of different syndromic craniosynostoses (Apert, Crouzon, Pfeiffer, Saethre-Chotzen, Carpenter, Muenke etc), - strategies for the management of intracranial hypertension and its multifactorial influences. <p>ADVANCED Should demonstrate detailed knowledge of:</p> <ul style="list-style-type: none"> - protocols of surgical management (Multidisciplinary: ENT, Ophthalmology, Neurosurgery etc), - indications for intervention: crisis, urgent, elective, aesthetic – both functional and psychological, - indications and applications of distraction osteogenesis, - indications for FOR/Le Fort III, Monobloc and bipartition osteotomies, distraction vs bone graft techniques.
Clinical Skills	<p>BASIC Should be able to</p> <ul style="list-style-type: none"> - explain to parents the challenges of these conditions at different stages of life from birth to adolescence, - describe the impact on the family of the birth of a child with a craniofacial anomaly and provide or arrange support. <p>INTERMEDIATE Should have ability to</p> <ul style="list-style-type: none"> - manage globe subluxation, - manage the compromised airway, - recognise elevated ICP, - recognise complications of transcranial surgery, - apply psychological assessment tools for evaluation of psychological needs (patient questionnaires). <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate plan for surgical correction of problems arising in patients with craniosynostosis, and - deploy the skills of the MDT appropriately.
Technical Skills and Procedures	<p>BASIC Should be able to close a coronal incision</p> <p>INTERMEDIATE</p>

	<p>Should be able to perform</p> <ul style="list-style-type: none"> - harvesting techniques for autologous grafts including iliac crest bone, rib, costochondral and cranial bone. - canthopexies, canthoplasties and eyelid balance, and - coronal flaps <p>ADVANCED</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> - major segmental osteotomies and advancements of the craniofacial complex, - distraction osteogenesis, - cranioplasties, - fronto-orbital surgery, - frontofacial surgery
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Topic	CRANIOFACIAL
Category	ST 7&8 Final Years
Module 3	Craniofacial tumours in adults and children
Objective	<p><i>Acquire competence in the management of adults with transcranial tumours (orbital, nasal, frontofacial, skull base) including SCC, BCC, melanoma and olfactory neuroblastoma.</i></p> <p><i>Acquire competence in the management of children with transcranial tumours (orbital, nasal, frontofacial, skull base) including orbitofacial NF, fibrous dysplasia / Cherubism /McCune Albright, teratomas, vascular lesions and anomalies , juvenile nasopharyngeal angiofibroma, haemangiomas, vascular malformations, dermoid cysts, nasal gliomas, ossifying fibromas, sarcomas including nerve and nerve sheath tumours</i></p>
Knowledge	<p>BASIC</p> <p>Should be able to describe common adult tumours eg BCC, SCC, melanoma, and their pathology, natural history and treatment protocols</p> <p>INTERMEDIATE</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - other adult tumours – eg NF, neuroblastoma with their pathology, natural history and treatment protocols, - common paediatric tumours eg NF, fibrous dysplasia, teratomas and their pathology, natural history and treatment protocols, - differences in clinical behaviours between adult and paediatric tumours. - adjunctive techniques eg interventional radiology and IMRT and chemo-irradiation, - role of palliation in adults and children - management of end of life, - complex craniofacial vascular anomalies and malformations, and - role of the surgeon in the MDT <p>ADVANCED</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - applied surgical anatomy, segmental resection and reconstruction (alloplastic, autologous, microsurgical), functional preservation, aesthetic techniques, - rare transcranial tumours and related contemporary literature, - management of the facial nerve in adult and paediatric tumours with

	indications for facial nerve sacrifice and rehabilitation
Clinical Skills	<p>BASIC Should be able to present cases to the MDT</p> <p>INTERMEDIATE Should demonstrate ability to diagnose, investigate the conditions covered in this module. Should demonstrate ability to counsel patients and deliver bad news concerning adult and paediatric patients.</p> <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate treatment plans for the conditions covered in this module - lead decision making in the MDT, - co-ordinate the patient treatment pathway.
Technical Skills and Procedures	<p>BASIC Should be able to perform reconstructive techniques including grafts and local flaps</p> <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - elevation 'workhorse' free flaps including latissimus dorsi and radial forearm flap (includes these exercises performed as surgical simulation) - manage Le Fort I down-fracture for skull base access <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - accessing craniofacial skeleton via various approaches (see module 1), - planning and resecting of craniofacial vascular lesions, - various approaches to the orbit (tumours) - reconstruction with free perforator flaps or composite free tissue transfer, - operating within a multidisciplinary team,

Topic	CRANIOFACIAL
Category	ST7 & 8 Final Years
Module 4	Craniofacial syndromes of tissue deficiency
Objective	<i>Acquire competence in the management of hemifacial microsomia, Treacher Collins syndrome, mandibular deficiencies - Pierre Robin, Romberg's disease, morphoea, craniofacial clefts & encephalocoels, Binder's syndrome, holoprosencephaly, arrhinia</i>
Knowledge	<p>BASIC Should demonstrate knowledge of (with their aetiology, developmental pathology & embryology, natural history)</p> <ul style="list-style-type: none"> - hemifacial microsomia (HFM), - Treacher Collins syndrome (TCS), - Romberg's disease. - Morphoea,

	<ul style="list-style-type: none"> - Tessier's classification of craniofacial clefts. Amd - classification of encephalocoeles <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of intervention (crisis, urgent, elective and aesthetic), - treatment protocols for mandibular deficiencies - Pierre Robin - impact of the tissue deficiency syndromes on the child and the family at different stages of maturity. - use of the MDT in the 'craniofacial assessment', <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - other tissue deficiency syndromes eg Craniofacial clefts & encephalocoeles, - Binder's syndrome, - holoprosencephaly, - arrhinia
Clinical Skills	<p>BASIC Not applicable</p> <p>INTERMEDIATE Should have ability to</p> <ul style="list-style-type: none"> - manage the compromised airway - undertake 'defensive' surgical treatment planning (allowing for effect of growth on surgical results in children). <p>ADVANCED Should have ability to formulate treatment plans for secondary procedures for the conditions covered in this module.</p>
Technical Skills and Procedures	<p>BASIC Should be able to perform excision of accessory auricles</p> <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - tissue expansion in the head and neck, - tarsorrhaphy techniques, - fat transfer, - Le Fort I or Le Fort II advancements of maxilla <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - eyelid rebalancing and reconstruction, - mandibular distraction and reconstruction - ear reconstruction – autologous and osseointegrated implant - nasal reconstruction and rhinoplasty - orbital translocation - soft tissue free flaps eg adipofascial flaps

Topic	CRANIOFACIAL
Category	ST7&8 Final Years

Module 5	Craniofacial overgrowth syndromes
Objective	<i>Acquire competence in the management of hemifacial hypertrophy, facial infiltrating lipomatosis, tissue overgrowth secondary to vascular malformations, Beckwith Wiedemann Syndrome, proboscis</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - hamartomas, teratomas, and dysplasias <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - differential diagnosis of overgrowth asymmetries - radiological diagnosis <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - techniques for facial nerve preservation - indications for surgery within the MDT setting <p>Should demonstrate knowledge of the planes of facial resuspension.</p>
Clinical Skills	<p>BASIC Should demonstrate ability to manage patients with reference to</p> <ul style="list-style-type: none"> - maintenance of vital functions including airway, feeding etc - preservation of oral, nasal, palpebral sphincters <p>INTERMEDIATE Should demonstrate ability to undertake a clinical assessment of the craniofacial conditions covered in this module.</p> <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate a treatment plan for the conditions covered in this module.
Technical Skills and Procedures	<p>BASIC Not applicable</p> <p>INTERMEDIATE Should be able to perform emergency procedures (see module 1)</p> <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - resectional surgery in the absence of malignancy including segmental osteotomies of maxilla and mandible, functional wedge resection of tongue, tarsorrhaphy, eyelid rebalancing with preservation of balanced facial function and aesthetics - tissue reduction with preservation of neuromuscular function

Topic	CRANIOFACIAL
Category	ST 7&8 Final Years
Module 6	Orbital surgery

Objective	<i>Acquire competence in the management of hypertelorism, microphthalmos, frontonasal dysplasia, craniofrontonasal dysplasia, orbital malpositions and dystopias, vertical orbital dystopia, late plagiocephaly and hemifacial microsomia.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - applied anatomy of the orbit and contents - examination of the eye and basic vision - eyelid anatomy and eyelid malposition - growth of the orbit - definition of terms eg hypertelorism, dystopia, telecanthus - differential diagnosis/genetics of hypertelorism syndromes - MDT assessment of hypertelorism syndromes <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - visual physiology, squint & principles of strabismus surgery - medial and lateral canthal fixation methods - orbital Prostheses – types, indications - superior orbital fissure syndrome - orbital apex syndrome - relative afferent papillary defect - retrobulbar haemorrhage - reasons and timing for orbital translocation <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - orbital osteotomies - microphthalmos – orbital expansion (expanders & osteomies) - impact on orbital translocation on vision - use of Box, Bipartition and advancement osteotomies of the orbit
Clinical Skills	<p>BASIC Emergencies – see module 1</p> <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - plan orbital osteotomies - formulate a management plan with respect to both techniques and timing <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate management plans with Ophthalmology and Neurosurgery in the context of the MDT - plan minimal access and endoscopic approaches
Technical Skills and Procedures	<p>BASIC Not applicable</p> <p>INTERMEDIATE Should be able to perform split calvarial bone graft harvest and fixation of bone graft</p> <p>ADVANCED</p>

	Should be able to perform <ul style="list-style-type: none"> - minimal access incisions - box osteotomies - facial bipartition - vertical orbital dystopia correction - orbital reconstruction – autologous or alloplastic - transcranial and subcranial orbital expansion - Mommaerts osteotomies - orbital access approaches (tumours)

Ear Reconstruction

The Ear Reconstruction module is available as a specific choice for those planning a relevant fellowship in this niche area.

Topic	EAR RECONSTRUCTION
Category	ST7/8 Final Years
Module (Single module)	Ear deformities and ear reconstruction
Objective	<i>Competence in the diagnosis and management of all aspects of ear deformities and ear reconstruction</i>
Knowledge	<p>BASIC Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - anatomy and embryology of the external, middle and inner ear, - pathophysiology of skin and cartilage wound healing, soft tissue tumours of the ear including haemangioma, problem scarring including keloid and principles of management of scarring, - various classifications of ear deformities including acquired ear deformities <p>INTERMEDIATE Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - principles of osseointegration, - local and regional flaps around the ear including the scalp, - development of the mandible and syndromes associated with ear deformities, - different techniques of correcting the prominent ear <p>principles of tissue expansion.</p> <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - various techniques of reconstructing microtia, macrotia, complex ear deformities such as constricted ears, sports induced trauma, acrobatic ears, anatomy of the scalp, chest wall, microsurgery, advances in tissue engineering, different techniques of ear reconstruction following partial/total loss, with and without cartilage loss, ear implants, timing of microtia surgery, mandibular distraction techniques, MDT approach to management of syndromic patients. - classification and techniques to correct ear lobe deformities, anatomy of the facial nerve in relation to microtia and mandibular hypoplasia.

<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to undertake</p> <ul style="list-style-type: none"> - clinical assessment of the ear and identifying anatomical variations from the norm. - clinical assessment of problem scarring and soft tissue tumours and formulating a plan of management. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - differentiate and classify the various ear deformities and identify the anatomical deficiencies or variations of the ear and mandible, - plan surgical procedures for prominent ear, cryptotia, deformities of the ear with minimal loss of the auricular tissue, - plan and interpret relevant investigations for the ear sinus, congenital ear deformities <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess complex ear deformities including those of the earlobe and syndromic patients, formulate a plan of management, - assess the soft tissue cover and need for tissue expansion/flap cover, - assess facial nerve function and mandibular deformities as well as occlusion of teeth, - assess the suitability of patient for autogenous versus prosthetic ear reconstruction, - assess and manage complications of ear corrections and ear reconstructive procedures - communicate effectively with patient and carer, - communicate with other team members of the MDT to integrate a time line for reconstruction,
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - excision of simple accessory auricles, cysts and small tumours on the ear with direct closure or skin grafting, intralesional steroid injection, - repair of split earlobes with local flaps, - repair of simple lacerations of the ear with or without cartilage repair, - excision of Darwin's tubercle. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - correction of prominent ear with and without cartilage mutilation, - correction of cryptotia, - excision of tumours and repair of defects with local/regional flaps, - excision of auricular sinuses, - management of complications of corrective surgery, - insertion of tissue expander <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - correction of complex ear deformities: spectrum of constricted ears, "crumpled" ears, cauliflower ears, acrobatic ears with calcified cartilage framework, macrotia and autogenous reconstruction of ears for anotia/microtia, - harvesting rib cartilage, carving cartilage to design framework for ear reconstruction, - dissecting skin envelope, temporalis fascial flap raising and inseting,

	raising other local flaps for skin cover of framework, conchal cartilage graft harvest, carving and inseting into defect, - various operations for ear lobe reconstruction.

Genitourinary Reconstruction

Three modules:

- 1: Hypospadias and allied conditions
- 2: Epispadias, Anomalies of Female Genitalia, Ambiguous Genitalia and Acquired Perineal Defects
- 3: Gender reassignment

The management of the conditions described in Module 2 & 3 is highly specialised and specific exposure to the skills needed is limited to a few specialist units.

Genitourinary Reconstruction Modules

Topic	GENITOURINARY RECONSTRUCTION
Category	ST7/8 Final Years
Module 1	Hypospadias and allied conditions
Objective	<i>Acquire competence in the management of hypospadias and allied conditions including management of the family in addition to all aspects of the surgical management and complications.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - embryology of the external genitalia, endocrinology pathology, anatomy of the male genitalia, - wound healing, - aetiological factors, - investigations, - management of the family. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - classification of hypospadias, - classification of surgical procedures, - surgical techniques available for correction of hypospadias - timing of surgery, - principles of surgical management, post operative management and complications <p>ADVANCED Should demonstrate knowledge of hypospadias and allied conditions <i>including</i></p> <ul style="list-style-type: none"> - recent theories on aetiology. - assessment of outcome, flow rate. - management of complications. - management of salvage patient. - management of BXO including aetiology. - management of buried penis. - management of cryptohypospadias(ventral curvature without hypospadias)/Peyronies disease

<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess presence and severity of hypospadias, presence of ventral curvature. - asses whether foreskin is suitable for reconstruction. - manage the child/family unit so that all are comfortable with the reconstructive process. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - asses which operative technique is appropriate for the degree of deformity. - analyse outcome including identification of complications. - assess the child with foreskin pathology. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - identify those patients with suboptimal outcome or complication requiring further investigation or surgery and develop a management plan. - assess a patient with foreskin and/or urethral BXO requiring further investigation and/or surgery. - assess an hypospadias salvage/cripple patient with a view to surgical correction and develop a management plan.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - meatotomy. - circumcision. - trimming of skin envelope following hypospadias repair. - harvesting of foreskin/buccal mucosal full thickness graft, preparation and closure of the donor site. - artificial erection test - closure of GAP hypospadias repair. - foreskin reconstruction. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - distal hypospadias reconstruction, - dissection of GAP hypospadias repair. - Snodgrass repair – dissection, closure of urethra, raising and inset of waterproofing layer, closure. - Snodgraft repair – dissection, inset of graft, and closure as above. - reconstruction of midshaft and proximal hypospadias, - 1st stage Bracka repair – dissection of urethral plate, removal of fibrous bands, dissection of glans wings, inset of graft, application of dressing and post-op management of dressing. - 2nd stage Bracka – dissection and closure as per Snodgrass. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - closure of simple fistula. - closure of complex fistula. - operative management of fistula with distal urethral stenosis. - operative management of distal/meatal stenosis. - operative management of cryptohypospadias/Peyronies - management of BXO – steroids, circumcision, 2 stage recon with buccal mucosal graft. - management of complex salvage/cripple patient – Snodgraft,

	<p>2 stage Bracka repair with buccal and/or bladder mucosa.</p> <ul style="list-style-type: none"> - harvesting bladder mucosal graft.
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Topic	GENITOURINARY RECONSTRUCTION
Category	ST7/8 Later Years and Interface
Module 2	Epispadias, Anomalies of Female Genitalia, Ambiguous Genitalia and Acquired Perineal Defects
Objective	<i>Acquire competence in the management of epispadias, anomalies of female genitalia, ambiguous genitalia and acquired perineal defects.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of epispadias/bladder extrophy, incidence, aetiology, MDT principles of management. - defects of female genitalia – congenital/acquired. - <u>Congenital</u>. Aims of surgical correction – restoration of urinary / faecal and sexual function. - age at presentation. - <u>Acquired</u> - causes – tumour, infection, trauma, previous DXT, scarring secondary to birth tear / episiotomy. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - epispadias – aims of management, principles of treatment, principles of two main surgical repairs. - female genitalia – congenital absence of vagina (Meyer-Rokitansky Syndrome), incidence, presents with primary amenorrhoea diagnostic test, principles of reconstruction – length, width vagina, durability, sensation. - male genitalia reconstruction in Fournier’s disease, cancer, trauma, vascular malformation, BXO with emphasis on preservation of adequate length, sufficient skin for unrestricted erection, durability and sensation, preservation of erection and adequate urinary stream. - reconstruction of urethra – staged BUMG, bladder mucosa. - skin – SSG. - scrotum – SSG, Flaps. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - Methods of female reconstruction post acquired defect – local pedicled flaps – lotus, gracillis, SSG, muscle flaps – gracillis myocutaneous flaps, distant flaps – VRAM. - Male reconstruction post acquired defects. - Urethra – 2 stage Bracka with BUMG with or without bladder mucosa grafts. - Glans – Glansectomy and quilted thick SSG for reforming glans over existing corpora. - Scrotum – tissue expansion, SSG, flaps – gracillis, Singapore technique.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - arrange appropriate investigations for conditions described in this module,

	<ul style="list-style-type: none"> - perineal defects including assessment of patient with Fournier's and initial management, identification of potential defect following resection of perineal tumour. <p>INTERMEDIATE Should demonstrate ability to formulate treatment plan for</p> <ul style="list-style-type: none"> - epispadias, female genitalia anomalies and ambiguous genitalia incorporating expectations of the child and the family, analysis of the specific congenital problem and what may be required during reconstruction, - perineal defects <p>Should be able to</p> <ul style="list-style-type: none"> - consent patients for reconstruction of perineal defects including graft and flap reconstruction. <p>ADVANCED Should demonstrate ability to formulate treatment plan for</p> <ul style="list-style-type: none"> - ambiguous genitalia – incidence, causes, associated features, investigations – chromosome profile, testosterone / sex steroid profile and approach to parents. - absence of vagina – reconstruction, Frank method – dilators, fasciocutaneous flaps, colonic or intestinal flaps. - SSG – McIndoe method. <p>Should demonstrate ability to manage</p> <ul style="list-style-type: none"> - epispadias, female genital anomalies and ambiguous genitalia
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - SSG, full thickness graft, jumping man, application of topical negative pressure dressing. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - reconstruction of perineal defects – local flap reconstruction of vagina/labia including lotus and gracillis, resurfacing penile shaft, groin dissection, coverage of exposed testes. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - surgical correction of epispadias, female genital anomalies and ambiguous genitalia be inaccessible to many trainees. - reconstruction of perineal defects – external pudendal flap, posterior thigh flap, VRAM for abdominoperineal resection, glansctomy for cancer, free flaps for major perineal defects.

Topic	GENITOURINARY RECONSTRUCTION
Category	ST7/8 Later Years and Interface
Module 3	Genital reassignment
Objective	<i>Acquire competence in the management of gender reassignment.</i>
Knowledge	BASIC

	<p>Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> - definition of transsexualism. - aetiology sex ratio. - diagnosis of gender dysphoria - problems associated with gender dysphoria - psychosocial, physical support for surgery, financial support for surgery. - MDT. - Requirement for NHS Management: <ol style="list-style-type: none"> 4. Live as other gender for two years 5. Hormones 6. Surgery <p>INTERMEDIATE Should demonstrate knowledge of techniques available for male to female reassignment:</p> <ul style="list-style-type: none"> - penile flap – glans reduced as clitoris, penile skin as flap for vagina, scrotum for labia / clitoral hood – usually two stage - modified McIndoe – SSG or FTSG from penis for vagina. - others – Bowel for vagina <p>ADVANCED Should demonstrate knowledge of techniques available for female to male reassignment</p> <ul style="list-style-type: none"> - mastectomy. - phallus construction with internal urethra and ability to become erect, non hair bearing, sensate, size, erectability and arousability by deep pudendal nerve. Specific options for phallus reconstruction <ul style="list-style-type: none"> - random pattern abdominal tube pedicle - groin flap - SIEA flap - gracilis flap - radial forearm flap - urethral reconstruction options, <ul style="list-style-type: none"> - SSG - FTSG - transplantation of urethra - tubed bladder wall - ancillary procedures <ul style="list-style-type: none"> - testicular implants - vaginectomy - facial feminising techniques - breast augmentation
<p>Clinical Skills</p>	<p>BASIC Ability to demonstrate</p> <ul style="list-style-type: none"> - working within an MDT and the ability to assess the psychological state of the patient. <p>INTERMEDIATE Ability to demonstrate</p> <ul style="list-style-type: none"> - develop the skills to arrange patient-centered care with patient as partner in the process (depending on age of patient), providing realistic information and guiding patient decision-making regarding choices available and timing of those treatments. <p>ADVANCED Ability to manage and lead</p> <ul style="list-style-type: none"> - multi-disciplinary teams in respect of provision of psycho-

	<p>social care. Be able to arrange the care pathway that supports an individual and his/her family to successfully adjust to disfigurement through giving the individual and family specific life-skills. These include the patient being provided with information about their condition and its treatment, developing a positive outlook/belief system, learning to cope with their feelings, exchanging experiences with others who've "been there" and social skills training to manage other people's reactions.</p>
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - raising local flaps - insertion of testicular prosthesis. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - elevation of complex flaps including, groin flap, radial forearm flap, abdominal tubed pedicle, SIEA flap and gracilis flap. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - specific operations for gender reassignment

Head & Neck Surgery Syllabus

Allied Disciplines:

Otolaryngology
OMFS

The modules are as follows:

1. Basic Sciences
2. Skin related neoplasia of the head & neck
3. Non-skin related neoplasia of the head & neck
4. Techniques for reconstruction of the head & neck
5. Reconstruction of specific head & neck sites
6. Facial reanimation

Head & Neck Modules

Topic	HEAD & NECK SURGERY
Category	ST7/8 Final Years and TIG Fellows
Module 1	<p>Basic Sciences</p> <ul style="list-style-type: none"> • Embryology, development, anatomy and physiology • Head & Neck assessment – examination, investigations including imaging and biopsy techniques
Objective	<p><i>To understand the development, anatomy and physiology of the head and neck in relation to its surgery</i></p> <p><i>Competence in the diagnosis, use of imaging and management of head and neck disorders</i></p>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - embryology of head & neck. - topographical and segmental anatomy of the head & neck. - vascular, neuronal and lymphatic supply / drainage of the head & neck. - appropriate use of diagnostic imaging - aesthetic units of the face and neck <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - range, indications and principles of surgical options for surgical ablation of tumours of the head & neck. - range, indications and principles of surgical options for soft tissue defect reconstruction of the head & neck. - range, indications and principles of surgical options for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips). - concepts and limitations of diagnostic techniques - aetiology and assessment of facial palsy - assessment of facial aesthetics - role and use of the head & neck MDT

	<p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - factors determining appropriate surgical ablation techniques - factors determining decision making in choice of flaps and tissue for soft tissue defect reconstruction - factors determining decision making in choice of flaps and tissue for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips). - fange, indications and principles of surgical options and non-operative techniques in facial reanimation.
<p>Clinical Skills</p>	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take a focused head & neck history related to any head & neck symptom. - assess and non-operatively manage acute injury. recognise life-threatening injuries of the airway and major blood vessels. - Undertake competent examination of the head & neck. - Undertake competent examination of cervical lymph nodes. - record diagnostic findings accurately - organise discussion of cases at head & neck MDT meetings. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - interpret significance of cytological and histological biopsy reports - interpret CT and MRI scans of the head and neck. - plan appropriately for further non-standard investigations of head & neck symptoms following inconclusive initial test results. <p>ADVANCED Should demonstrate skills of analysis and diagnostic synthesis, judgement and surgical planning pertaining to the topics covered in this module.</p>
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - airway management with the skill detailed in ATLS - circulatory support with the skills detailed in ATLS - free-hand and ultrasound guided lesion FNA of the head & neck - free-hand and ultrasound guided core biopsy of the head & neck <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - surgical incision / excision biopsy of intra-oral lesions - direct and indirect pharyngolaryngoscopy - examination of head & neck under anaesthesia <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - sentinel lymph node biopsy - surgical incision / excision biopsy of intra-oral / laryngeal / pharyngeal lesions

Topic	HEAD & NECK SURGERY
Category	ST7/8 Final Years and TIG Fellows
Module 2	Skin-related neoplasia of the head & neck
Objective	<i>Competence in the diagnosis, assessment and management of all types of skin related cancer of the head and neck.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - epidemiology - histological classification (BCC / SCC / Melanoma / adnexal) - staging of skin cancer - prognostic factors (tumour and patient-related) and implications for patient treatment recommendations - principles of screening programmes within a population. - NICE guidelines in treatment of non-melanoma skin cancers - understanding the MDT - knowledge of reconstructive options <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - indications for non-surgical treatment - adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies particularly for melanoma. - cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis - palliative treatment options for skin cancer. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - association between specific high risk benign skin conditions with associated increased skin cancer risk - melanoma biology - important adjuvant and neo-adjuvant historical and current trials (clinical/surgical, chemotherapy, radiotherapy, hormonal and biological).
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focused skin-related history, eliciting factors associated with benign and malignant skin neoplasia - undertake competent head & neck examination - examine for head & neck lymphadenopathy - initiate appropriate investigations - undertake pre-op. skin prep and draping and prescribe antibiotic prophylaxis - work effectively within the skin cancer multidisciplinary team. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess and manage patients presenting with locally advanced disease - interpret CT, MRI & PET scans,

	<ul style="list-style-type: none"> - recognise where further pathology or imaging studies may be required and request these appropriately, - develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues. <p>ADVANCED</p> <p>Should demonstrate skills of</p> <ul style="list-style-type: none"> - communication of a cancer diagnosis with patients, - discussion of complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent, - analysis and diagnostic synthesis, judgement and surgical planning pertaining to conditions described in this module. - communication within the MDT.
<p>Technical Skills and Procedures</p>	<p>BASIC</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> - incision biopsy of lesion - excision biopsy of lesion - FNA / core sample of lymph node - Lymph node sampling [in centres where SNB not available] - local flap reconstruction (rotation / transposition / advancement) - split and full thickness skin grafts. <p>INTERMEDIATE</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> - sentinel lymph node biopsy, dual modality and blue dye only - selective / modified radical neck dissection - elevation of regional flaps <p>ADVANCED</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> - radical or extended neck dissection - reconstruction with regional flaps - free flap surgery - reconstruction of specific aesthetic units (nose / eyelids / ears / lips) – see also Module 4 Reconstructive techniques of the head and neck : Advanced technical skills and procedures.

Topic	HEAD & NECK SURGERY
Category	ST7/8 Final Years and TIG Fellows
Module 3	Non skin-related neoplasia of the head & neck
Objective	<i>Competence in the diagnosis, assessment and management of all types of non-skin related cancer of the head and neck.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - epidemiology - types of cancer – oral cavity, nasopharynx, oropharynx, larynx, - reconstructive options - TNM Staging of skin cancer - prognostic factors (tumour and patient related) and implications for patient treatment recommendations - cancer network guidelines in treatment of non-skin cancers of the head & neck - understanding the MDT <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - indications for non-surgical treatment - adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies. - cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis. - palliative treatment options for head & neck cancer. - hospice care <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - association between specific high risk benign skin conditions with associated increased skin cancer risk - important adjuvant and neo-adjuvant historical and current trials (clinical/surgical, chemotherapy, radiotherapy, hormonal and biological). - role of HPV virus in cancer aetiology

Clinical Skills	<p>BASIC Should be able to</p> <ul style="list-style-type: none"> - take focused history related to non-skin tumors of the head & neck eliciting relevant factors, - undertake competent head & neck examination particularly of oral cavity, pharynx and larynx - undertake competent examination of head & neck lymphadenopathy - initiate appropriate investigations - work effectively within the skin cancer multidisciplinary team. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess and manage patients presenting with locally advanced disease, - interpret CT, MRI & PET scans, - recognise where further pathology or radiology may be required and request these appropriately, - develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - discuss a cancer diagnosis with patients, - discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent, - communicate effectively and skilfully - use skills of analysis and diagnostic synthesis, judgement and surgical planning pertaining to the conditions described in this module.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - incision biopsy of lesion (oral cavity / pharynx / larynx) - excision biopsy of lesion (oral cavity / pharynx / larynx) - FNA / core sample of cervical / parotid lymph node - local flap reconstruction (rotation / transposition / advancement) - examination under anaesthesia <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - direct and indirect pharyngolaryngoscopy - cervical sentinel lymph node biopsy, dual modality and blue dye only. - selective / modified radical neck dissection - regional flaps <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - radical or extended neck dissection - free flap surgery - reconstruction of aesthetic units (nose / eyelids / ears / lips) – see module 4 Reconstructive techniques of the head and neck : Advanced technical skills and procedures.

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Topic	HEAD & NECK SURGERY
Category	ST7/8 Final Years and TIG Fellows
Module 4	Techniques for reconstruction of the head & neck
Objective	<i>Acquire competence in the planning, execution and management of appropriate soft tissue reconstruction of head & neck defects.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - classification of flaps (random v axial / muscle flap - Mathes and Nahai / type of tissue being transferred) - factors affecting outcome in flap surgery (patient related, operative, adjuvant therapy related), - principles of flap surgery (replace “like with like”, reconstructive units, back-up plan and “life boat”, donor site considerations) - principles of microsurgery - anatomy of perforators and angiosomes – relevant to planning of local, regional and distal flaps. - anatomy of local, regional and free flaps suitable for head & neck reconstruction. - advantages and disadvantages of local, regional and free flaps in the head & neck, - appropriate use of local, regional and free flaps in the head & neck, <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - relevant surgical anatomy and neurovascular supply of flaps used in head & neck reconstruction - pre-operative investigations for specific flaps - ability to interpret angiographic abnormalities when planning reconstruction, - complications of autologous tissue reconstruction including donor site morbidity - post-operative flap monitoring techniques - airway management of the head & neck, - stages of bereavement associated with loss of body image and the clinical and psychological supports that can be put in place to assist the patient cope with that loss, - planning and prioritising treatment within the head & neck MDT setting, <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - assessment of outcome - long term outcomes of head & neck reconstruction - flap salvage and options following failure, - outline the impact of disfigurement, the consequences of an altered appearance, what it involves psychologically and socially, and describe the impact of an individual’s body image on their life and that of their family. - outline the process by which an individual can successfully adjust to disfigurement and explain how the multidisciplinary team can assist with that process.

Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focused history eliciting factors important for decisions regarding suitability / type of reconstruction, - clinically assess the soft tissue defect, - keep contemporaneous and appropriate record, - demonstrate simple management techniques including use of appropriate dressings, - plan both local and free flaps appropriately for defect, - co-ordinate soft tissue reconstruction in conjunction with ablative team. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - counsel patient regarding advantages and disadvantages of reconstruction - specifically setting realistic expectations, reconstruction as a process, template in-patient stay and complications, - take informed consent and participate in joint decision-making. - manage patients in post-operative period, - manage complications of surgery applicable to the clinic setting. - use psychological assessment tools for evaluation of psychological needs (patient questionnaires). <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess complex reconstructive requirements and make decisions on appropriate management, - interpret investigations and formulate management plans, - undertake patient-centered care with patient as partner in the process, providing realistic information and guiding patient decision-making regarding choices available and timing of those treatments, - manage and lead multi-disciplinary teams in respect of provision of psycho-social care, - arrange the care pathway that supports an individual to successfully adjust to disfigurement through giving the individual and family specific life-skills. These include the patient being provided with information about their condition and its treatment, developing a positive outlook/belief system, learning to cope with their feelings, exchanging experiences with others who've "been there" and social skills training to manage other people's reactions.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - exposure of vessels - positioning of patient on operating table - protection of pressure areas. - prevention of nerve injuries / neurapraxia. - skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis. - selection / arrangement of appropriate level of post-operative care. <p>INTERMEDIATE</p>

	<p>Should be able to perform</p> <ul style="list-style-type: none"> - pre-operative marking of patient - raising range of pedicled autologous flaps - in-setting of flap. - harvesting vein graft <p>ADVANCED</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> - microvascular anastomoses - flap salvage for failing flaps - flap shaping techniques - flap revision techniques

Topic	HEAD & NECK SURGERY
Category	ST7/8 Final Years and TIG Fellows
Module 5	Reconstruction of specific head and neck sites
Objective	<i>Acquire competence in the planning, execution, management and reconstruction of specific head and neck sub-units including eyelids, nose, lips, ears and scalp.</i>
Knowledge	<p>BASIC</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of tissues suitable for planning of local, regional and distal flaps to specific sites in the head & neck, - vascular anatomy relevant to planning of local, regional and distal flaps to specific sites in the head & neck, - recognise the appropriate use, advantages and disadvantages of local, regional and free flaps in reconstruction of specific sites in the head & neck - factors affecting outcome in flap surgery (patient-related, operative, adjuvant therapy-related). <p>INTERMEDIATE</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - airway management of the head & neck - ability to interpret angiographic abnormalities when planning reconstruction of specific sites in the head and neck, - pre-operative investigations for specific flaps, - complications of autologous tissue reconstruction including donor site morbidity, - post-operative flap monitoring techniques, - planning and prioritising treatment within the head & neck MDT setting. <p>ADVANCED</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - long-term outcomes of head & neck reconstruction, - assessment of outcome, - flap salvage and options following failure, - use of osseointegrated implants and head and neck prosthetics, - effects of radiotherapy.

Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focused history eliciting factors important for decisions regarding suitability / type of reconstruction for a specific head and neck site, - clinically assess specific head and neck defects, - keep contemporaneous and appropriate records, - effect simple wound management techniques including use of appropriate dressings, - plan both local, regional and free flaps appropriate for specific defect, - demonstrate soft tissue reconstruction in conjunction with ablative team, <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - discuss advantages and disadvantages of reconstruction - specifically setting of realistic expectation, reconstruction as a process, template in-patient stay and complications, - understand importance of informed consent and joint decision making, - manage complications of surgery in pre, peri and post-operative phases. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess complex reconstructive requirements and make decisions on appropriate management for specific sites in the head and neck, - interpret investigations to formulate management plan, - manage tissues previously treated with radiotherapy.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - exposure of vessels, - positioning of patient on operating table, - protection of pressure areas, - prevention of nerve injuries / neurapraxia, - skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis regimens, - selection / arrangement of appropriate post-operative care. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - pre-operative marking of patient, - raising local, regional and pedicled autologous flaps relevant to specific sites of the head and neck, - in-setting of flap. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - treatment of specific sites of the head and neck following previous radiotherapy, - salvage surgery of specific sites of the head and neck, - microvascular anastomoses, - flap salvage for failing flaps, - flap revision techniques, - use of osseointegrated implants and facial prosthetics.

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Topic	HEAD & NECK SURGERY
Category	ST7/8 Final Years and TIG Fellows
Module 6	Facial reanimation
Objective	<i>Competence in the diagnosis of facial palsy and management by both static and dynamic procedures as well as non-surgical treatments.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - epidemiology, - anatomy of the facial nerve, - aetiological causes of facial palsy, - prognostic factors and implications for patient treatment recommendations, - range of reconstructive options <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - non-surgical treatments (Botox, biofeedback, electrical stimulation of facial musculature), - static sling procedures (tendon, fascia, artificial), - dynamic sling procedures (temporalis, masseter), - principles of facial nerve reconstruction (direct suturing, nerve grafting, cross facial nerve grafting). <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - free muscle transfer techniques (cross facial nerve grafting, gracilis, pectoralis minor, rectus abdominis), - reconstructive aesthetic techniques (endoscopic browlift, facelift, upper & lower blepharoplasties), - use of ancillary surgical techniques (autologous fat transfer, re-positioning parotid ducts etc), - cranial nerve transfers (hypoglossal, accessory).
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focused facial nerve related history eliciting factors localising site of injury, - undertake competent facial nerve examination , - initiate appropriate investigations (CT, MRI, EMG, nerve conduction studies). <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - interpret CT, MRI, EMG& nerve conduction studies, - assess and manage patients presenting with locally advanced disease, - recognise where further investigations may be required and request these appropriately, - develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and

	<p>colleagues.</p> <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - undertake analysis and diagnostic synthesis, judgement and surgical planning pertinent to facial palsy, - discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - exploration, protection and identification of facial nerve branches, - direct repair of facial nerve, - nerve grafting of facial nerve, - techniques of Botox injection of face, techniques of biofeedback and electrical stimulation of facial musculature, - surgical access and identification of deep layers of the face. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - cross facial nerve grafting, - insertion of static slings, - dynamic slings (Temporalis, masseter). <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - free muscle tissue transfer techniques (gracilis, pectoralis minor, rectus abdominis), - cranial nerve transfers (hypoglossal, accessory), - ancillary reconstructive techniques (autologous fat transfer, repositioning parotid ducts etc), - reconstructive aesthetic techniques (endoscopic browlift, facelift, upper & lower blepharoplasties).

Lower Limb Trauma

At this time there are no TIG fellowships in Lower Limb Trauma and there are no specific plans for the same. There are currently TIG fellowships in Soft tissue Reconstruction, based around the care of the military wounded, that draw on much of the skill set delineated in this module.

Allied Disciplines:

Trauma and Orthopaedics.

The modules are as follows:

1. Assessment and primary management lower limb injuries
2. Debridement, stabilisation and compartment syndrome.
3. Soft tissue reconstruction
4. Vascular injuries and amputation
5. Complications
6. Paediatric injuries and outcome measures

Lower Limb Modules

Topic	LOWER LIMB
Category	ST7/8 Final Years
Module 1	Assessment and primary management lower limb injuries
Objective	<i>Acquire competence in the initial combined management of patients with open lower limb fractures in the emergency department.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - resuscitation principles as defined by ATLS. - applied anatomy, physiology, pathology and mechanisms of limb injury, blood supply of skin, fat and muscle, - angiosomes of lower limb - classification of open fractures, including Gustilo classification, - factors influencing fracture healing, - timing and rationale for antibiotic use and timing of initial debridement., - appropriate pre-operative investigations. - role of other members of team including microbiologists, physiotherapy, occupational therapy, - importance of specialist centres, MDT and interdisciplinary communication, especially with orthopaedic colleagues, <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - pathophysiology of degloving injuries and their classification. - management of specific injuries e.g. crush and degloving, - range, indications and principles of surgical options for soft tissue reconstruction: direct closure, skin graft, local and free flaps, - options of bone fixation, including internal versus external fixation.

	<p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - role of major trauma centres, - management of multiply injured patient, - factors determining decision making in choice of flaps and tissue for soft tissue reconstruction.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take a focused history for lower limb injury, - clinically assess and undertake non-operative management of acute injury, - recognise life-threatening injuries, - examine to including assessment of severity of injury, - assess vascular status, - assess for the presence of compartment syndrome. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - examine neurological status of limb, - apply the management algorithms pertinent to the conditions covered in this module. <p>ADVANCED Should be able to demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning pertaining to lower limb injury.</p>
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - application of appropriate dressings in emergency room, - reduction of fracture in emergency department, - application of a plaster cast. <p>INTERMEDIATE Should be able to measure compartment pressures and interpret results.</p> <p>ADVANCED Should be able to stabilise associated injuries and bleeding.</p>

Topic	LOWER LIMB
Category	ST7 & 8 Final Years
Module 2	Debridement, stabilisation and compartment syndrome
Objective	<i>Acquire competence in the debridement, stabilisation and assessment of wounds and the ability to make a surgical plan for future management. Management of compartment syndrome.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of fracture management, - anatomy of lower limb, - on-table imaging techniques and their interpretation, - safe access incisions, - the importance of tissue sampling,

	<ul style="list-style-type: none"> - temporary wound dressings, - pathophysiology of compartment syndrome. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of perforators, - principles and management of fractures and the relevance to subsequent soft tissue reconstruction, - monitoring and interpretation of results of raised compartment pressures <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of bone debridement, - microbiology of open fracture injuries, - characteristics of defects that can be closed primarily at the initial debridement and the techniques available, - controversies of delayed diagnosis of compartment syndrome
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess fractures clinically, - manage wounds in various locations on the lower limb, - apply plaster splints, - apply temporary dressings – negative pressure and antibiotic bead pouch, - measure compartment pressures. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - manage more complex fractures, - formulate treatment plan for degloving injuries, especially multiplanar degloving. <p>ADVANCED Should demonstrate ability to recognise those injuries that would benefit from primary amputation.</p>
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - appropriate pre-wash and prep, - systematic wound debridement under tourniquet control, - wound extension along fasciotomy lines, - application of temporary dressing. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - identification of tissues that can be preserved, - adequately debridement of the injured soft tissues to achieve a stable wound approaching elective conditions, - release four muscle compartments in leg in cases of compartment syndrome, - intraoperative planning of future soft tissue reconstruction in conjunction with orthopaedic team and ensure appropriate bone fixation to facilitate this. <p>ADVANCED Should be able to perform amputation of non-salvageable limbs</p>

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Topic	LOWER LIMB
Category	ST7 & 8 Final Years
Module 3	Soft tissue reconstruction
Objective	<i>Acquire competence in the planning and execution of appropriate soft tissue cover of open tibial fractures</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of perforators and angiosomes – relevant to planning of local flaps, - zone of injury - anatomy of free flaps suitable for lower limb reconstruction with the advantages and disadvantages of each, and the appropriate use of each option. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - options available for fracture fixation and tailoring soft tissue management accordingly, - planning and prioritising treatment within an MDT setting. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles and detailed management of more complex injuries, including multilevel and bilateral lower limb injuries., - the surgical management of bone and soft tissue reconstruction, - principles of circular frames and bone transport, - controversies of fasciocutaneous versus muscle flaps for soft tissue coverage of open fractures, - angiographic abnormalities when planning reconstruction.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess soft tissue defects demonstrating recognition of injury patterns, - use simple management techniques including use of appropriate dressings, - use appropriate antibiotics at definitive wound closure, - plan both local and free flap reconstruction appropriately for defect, - co-ordinate soft tissue reconstruction in conjunction with orthopaedic team. <p>INTERMEDIATE Should be able to</p> <ul style="list-style-type: none"> - plan management algorithms for the common injuries covered in this module, - plan logical step-by-step planning of complex cases in conjunction with orthopaedic surgeons. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - plan management algorithms for the injuries covered in this module including complex injuries, - plan management and reconstruction for the more complex soft tissue defect in patients requiring distraction lengthening of the skeleton.

Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - direct closure, - skin graft, - temporary dressings – negative pressure and antibiotic bead pouch, - exposure of recipient vessels in leg. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - nerve repair (direct), - planning and raising appropriate fasciocutaneous flaps, both proximally and distally based, - raising gastrocnemius muscle flap for proximal third/knee defects, - performing most steps in the raising and anastomosing of free flaps, - harvesting of vein graft <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - raising and anastomosing ALT, LD and radial forearm free flaps under supervision, - harvesting a free fibula flap. - nerve repair using sural nerve graft. - using interposition vein grafts to perform anastomoses outside zone of injury.

Topic	LOWER LIMB
Category	ST7 & 8 Final Years
Module 4	Vascular injuries and amputation
Objective	<p><i>Acquire competence in the diagnosis and management of all vascular injuries to the lower limb.</i></p> <p><i>Acquire competence in the recognition and management of patients requiring early and delayed amputations.</i></p> <p><i>Acquire understanding of the impact of amputation level on subsequent rehabilitation and detailed knowledge of the rehabilitation regimens for patients requiring amputation.</i></p>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of vasculature, including well-known variations e.g. peronea magna, - response of vessels to injury and repair, - primary management of vascular injuries and the devascularised limb, - appropriate use of investigations, - timing of surgery for acutely ischaemic limb, - indications for amputation and the levels, - rehabilitation of amputation patients. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - role of vascular shunts, - role of angiography, - techniques of vessel repair, - challenges for primary amputation., - how to deal with the nerves during amputation and the need for a myodesis, - role of adductor myodesis for transfemoral amputation. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - methods for secondary amputation for infection, failed reconstruction etc., - how to manage the revascularised limb post-operatively, - pharmacological and non-pharmacological methods for the relief of pain, including phantom limb and neuropathic pain. - requirements of a good amputation stump to allow proper prosthesis fitting, - role of fillet of limb (foot) technique, - knowledge of need to reconstruct large veins proximal to trifurcation.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - control bleeding. - interpretation of angiograms. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess and prepare management algorithms for the conditions covered in this module, - counsel a patient for limb amputation.

	<p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess complex injuries and make decisions on subsequent management, - interpret investigations and formulate management plan in secondary amputation e.g. CT, angiography etc., - manage iatrogenic vessel injury.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - exposure of vessels, - insertion of shunts, - harvesting vein graft, - application of skin graft to amputation stump if required. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - vein graft for vascular injury, -uncomplicated transtibial amputation, -uncomplicated through knee and transfemoral amputation. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - repair of complex vessel defect, - continuation to suitable reconstruction of revascularised limb if appropriate, - modification of skin flaps for amputation due to complex soft tissue injury, - fillet of foot for amputation where soft tissue is deficient.

Topic	LOWER LIMB
Category	ST7 & 8 Final Years
Module 5	Complications
Objective	<i>Acquire competence in the diagnosis and management of both bone and soft tissue complications and recognition of the need for multidisciplinary management.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - consequences of infection following trauma and surgery, - complications of free flap surgery, - complications following the use of local flaps, - those complications which require referral to specialist centres. <p>INTERMEDIATE Should demonstrate knowledge of the management of all complications following soft tissue reconstruction including recognition of skeletal complications.</p> <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - basic science and evidence-base underpinning the management of complications, - orthopaedic principles of managing delayed union and non-union
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - undertake clinical assessment of complications and in particular recognise a compromised free or local flap, in conjunction with general patient parameters. - use relevant adjunctive techniques such as ultrasound. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess and plan management algorithms for the conditions covered in this module, - use a range of free flap monitoring techniques. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - undertake detailed assessment of, and advise on, complex problems including reconstruction/salvage of the limb if primary reconstruction has failed, - analyse and advise on modifications needed to standard therapy regimens to address specific complications.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - washout of haematoma/collection. - application of leeches to flap tip with venous congestion. - simple debridement of non-viable flap and appropriate application of temporary dressing. <p>INTERMEDIATE Should be able to take back free flap to theatre with consultant assistance.</p>

	<p>ADVANCED</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> - salvage or amputation of limb following flap failure, - bone debridement in conjunction with orthopaedic surgeons. - raising flaps to assist orthopaedic team for skeletal revision surgery including cancellous bone graft

Topic	LOWER LIMB
Category	ST7 & 8 Final Years
Module 6	Paediatric injuries and outcome measures
Objective	<i>Acquire competence in the diagnosis and management of children with lower limb injuries. To demonstrate knowledge of the outcome measures used to determine efficacy of treatment following lower limb trauma.</i>
Knowledge	<p>BASIC</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - principles of management of children's injuries – skeletal and soft tissue – and appreciate differences from adults, - normal growth and development, in particular the importance of growth plates, - outcome measures such as Sickness Impact Profile (SIP), - short Form-36 (SF36) and Enneking score. Recognition of the need for specialist centres for revision surgery. <p>INTERMEDIATE</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - management of open lower limb injuries in children. - how to apply outcome measures to practice and interpret published work, including limitations. <p>ADVANCED</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - management of paediatric lower limb injuries and the specific bone and soft tissue considerations needed with regard to growth, - controversies regarding paediatric open lower limb injuries, - how to plan and undertake an outcome study and audit outcomes for lower limb trauma.
Clinical Skills	<p>BASIC</p> <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess the injured child, - communicate and liaise with parents, - work and communicate within the relevant multidisciplinary team (MDT), - recognise non-accidental injury. <p>INTERMEDIATE</p> <p>Should demonstrate ability to plan management algorithms for the paediatric patient with lower limb injury.</p> <p>ADVANCED</p> <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> - use skills of analysis and diagnostic synthesis, judgement, and surgical planning,

	<ul style="list-style-type: none"> - in respect of the child, to advise regarding timing of reconstruction and effect of growth on reconstructive surgery previously performed, - provide detailed advice on the treatment pathway, including interpretation of specialist imaging, within the context of the relevant MDT.
Technical Skills and Procedures	<p>BASIC Should be able to stabilise the child with lower limb injury for safe transfer to specialist centre.</p> <p>INTERMEDIATE Should be able to perform primary debridement and application of temporary wound dressings in theatre.</p> <p>ADVANCED Should be able to perform appropriate reconstruction of soft tissue defect including all the techniques available.</p>

Oncoplastic Breast Syllabus

Allied Disciplines:

General Surgery – Breast surgery

Modules:

1. Basic Sciences & Breast assessment
2. Breast cancer
3. Benign breast conditions
4. Reconstruction implant-based techniques
5. Reconstruction with autologous tissue-based techniques
6. Aesthetic Surgery of the Breast

Topic	ONCOPLASTIC BREAST
Category	ST7 & 8 Final Years and TIG Fellows
Module 1	<p>Basic Sciences and Breast Assessment</p> <ul style="list-style-type: none"> • Basic sciences - embryology, development, anatomy, physiology and genetics, stem cell biology, biology of scarring and wound healing; Management of abnormal scars • Breast assessment - examination, investigations including imaging and biopsy techniques
Objective	<i>Acquire competence in basic sciences pertinent to the breast and competence in clinical diagnosis and investigation</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - topographical and segmental anatomy of the breast, vascular neuronal and lymphatic supply / drainage of breast, anatomy of chest wall, abdomen and axilla, - lymphatic system physiology, - embryology of breast, - endocrine physiology and endocrine effects on the breast at puberty, pregnancy, lactation, menopause and in mastalgia, - effect of hormonal therapeutics on the breast (OCP, HRT, SERM's & AI's)

	<p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - developmental abnormalities - accessory nipples, accessory breast tissue - concept and limitations of triple assessment <p>ADVANCED Should demonstrate knowledge of breast aesthetics (including breast measurements), breast asymmetry, breast hyperplasia, hypoplastic breast syndromes including Poland's syndrome, chest wall deformities, associated limb abnormalities</p>
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take a focused breast history related to any breast symptom, - examine the breast and axilla, - request component investigations of triple assessment, and ensure that results are discussed at breast MDT - accurately record diagnostic findings. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - arrange non-standard investigations required to assess breast symptoms following inconclusive initial results, - interpret mammogram and ultrasound findings, - interpret significance of cytological and histological biopsy reports, - plan treatment algorithms for conditions in this module. <p>ADVANCED Should demonstrate skills of analysis and diagnostic synthesis, judgement, and surgical planning.</p>
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - free-hand and ultrasound guided lesion FNA - free-hand core biopsy, - punch biopsy of skin / nipple. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - surgical excision biopsy, - ultrasound guided core biopsy. <p>ADVANCED Should be able to perform vacuum assisted mammatome biopsy.</p>

Topic	ONCOPLASTIC BREAST
Category	ST7 & 8 Final Years and TIG Fellows
Module 2	Breast cancer
Objective	<i>Acquire competence in the diagnosis, assessment and management of all types of breast cancer. Includes management of premalignant conditions of the breast and screening for breast cancer.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - epidemiology, histological classification and sub-types of invasive disease and DCIS, - staging of breast cancer (UICC – TNM) , - prognostic factors (tumour and patient related) and implications for patient treatment recommendations Breast cancer MDT dataset, - male breast cancer, - development of the NHSBSP and current structure, - breast screening delivery, patient flow, quality assurances and criticisms/limitations associated with the NHSBSP, - principles of screening programmes within a population. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - indications for primary medical therapy, - rationale for neo-adjuvant chemotherapy / endocrine therapy including evidence and limitations, - indications and CI's for mastectomy and BCS and appropriate selection of axillary surgery (SLNB vs ALND), - oncoplastic techniques (therapeutic mammoplasty / IBR/SSM & NSM), - complications of surgery and their management, - adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies (NICE clinical guidelines 80 & 81), specifically common regimes, indications, complications and side effects and supporting evidence, - knowledge of 'Adjuvant On-Line', - cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis, - palliative treatment options for breast cancer. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - breast cancer genetics, specifically identified gene abnormalities and conditions associated with breast cancer (e.g. BRCA 1&2, TP53, Cowdens syndrome, Bananyan Zonanan Syndrome, CHEK2, HNPCC etc), - relevance of family history in breast cancer, the role of the family history clinic and specific referral criteria. (NICE clinical guideline 41), - models for estimating individual risk (Gail model, Bodicea, Klaus, Tyrer-Cuzick), - non-surgical and surgical risk reduction strategies and supporting evidence, - management and follow-up of non-malignant high risk breast lesions, - current and important adjuvant and neo-adjuvant historical trials (clinical/surgical, chemotherapy, radiotherapy and hormonal), - pregnancy associated breast cancer and its management.
Clinical Skills	<p>BASIC Should demonstrate ability to</p>

	<ul style="list-style-type: none"> - take a focussed breast history including presenting complaint, family history, elicit risk factors and identify co-morbidities important in treatment planning, - examine the breast, nodal basins and relevant distant sites where metastasis suspected, - initiate appropriate initial investigations as part of triple assessment, - recognise the importance of, and work effectively within, the breast multidisciplinary team. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - interpret mammogram and sonographic findings, - recognise uncommon presentations of breast cancer (Pagets disease, inflammatory carcinoma), - assess and manage patients presenting with locally advanced disease, - recognise where further mammographic views or MRI may be required and request these appropriately, - develop and record management plan for the patient and discuss rationale for management of common scenarios with patients in conjunction with dedicated BCN. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> -interpret MRI findings and use these in treatment planning, - undertake skilful discussion of cancer diagnosis with patients, - discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent,
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Technical Skills and Procedures	BASIC Should be able to perform
	<ul style="list-style-type: none"> - appropriate pre-op skin prep and draping and antibiotic prophylaxis, - palpable excision biopsy, palpable wide local excision, - sentinel lymph node biopsy, dual modality and blue dye only, - node sample in centres where SNB not employed, - simple mastectomy and re-excision to clear margins
	INTERMEDIATE Should be able to perform
	<ul style="list-style-type: none"> - wire / radiologically-localised excision of impalpable lesion, - skin-sparing mastectomy, - axillary lymph node dissection (level 3) both primary and delayed.
	ADVANCED Should be able to perform
	<ul style="list-style-type: none"> - axillary lymph node dissection for disease recurrence, - skin and nipple preserving mastectomy, - therapeutic mammoplasty, IBR procedures appropriate to parent specialty.

Topic	ONCOPLASTIC BREAST
Category	ST 7 & 8 Final Years and TIG Fellows
Module 3	Benign breast conditions
Objective	<i>Acquire competence in the diagnosis and management of benign breast conditions.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - pathophysiology and presentation of mastalgia, fibroadenoma, breast cysts, papilloma, benign nipple discharge, duct ectasia, periductal mastitis, mammary duct fistula and breast sepsis (lactational and non-lactational) including microbiology - Phylloides tumour, - gynaecomastia, - involutional change of the breast. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - relationship between systemic disorders, medication and lifestyle factors with breast symptoms (hyper-prolactinaemia, gynaecomastia, OCP, smoking), - benign pregnancy and lactational lesions of the breast (lactational adenoma, galactocoele). <p>ADVANCED Should be able to describe association between specific high-risk benign breast conditions with associated increased breast cancer risk.</p>

Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focussed breast history, eliciting factors associated with benign breast disease, - examine breast and axillary - examine systems associated with benign breast disease (endocrine, abdominal), - initiate appropriate investigations / triple assessment where indicated <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate management plan of benign breast pathology included in this module, - interpret investigation findings and understand how they differ from findings in malignant disease. <p>ADVANCED Should demonstrate skills of analysis and diagnostic synthesis, judgement and surgical planning for the conditions specified in this module.</p>
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - free hand aspiration / surgical drainage of breast abscess, - aspiration of cyst, - benign lump excision. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - wire / image guided excision of lesion, - ultrasound guided aspiration abscess, - microdochectomy, - major duct excision, - fistula surgery. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - ductoscopy, - minimal access surgery, - nipple eversion techniques.

Topic	ONCOPLASTIC BREAST
Category	ST 7 & 8 Final Years and TIG Fellows
Module 4	Reconstruction implant- based techniques
Objective	<i>Acquire competence in implant based reconstruction including indications, technique and management of complications</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - indications and CI's to implant based reconstruction, - surgical anatomy of implant / expander based reconstructive procedures, - alloplastic materials and tissue interface,

	<ul style="list-style-type: none"> - dermal xenografts. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - advantages and disadvantages in comparison to autologous based reconstruction, - range of devices available, - implant infection and management, - implant extrusion, - capsular contracture, - aetiology, classification, role of DXT and management, - historical development and controversies. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - staged procedures – single and two stage: advantages and disadvantages, - adjunctive biological technologies, - outcome of implant based reconstruction, - relevant literature
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Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess suitability for implant based reconstruction and alternatives, - identify pre-operative factors which can be optimized prior to surgery (smoking, systemic disease). <p>INTERMEDIATE Should demonstrate ability to consent patients describing full range of potential complications, and set realistic expectations.</p> <p>ADVANCED Should demonstrate ability to select appropriate implants / expanders for patients, recognise post-operative complications and formulate associated management plans.</p>
Technical Skills and Procedures	<p>BASIC Should be able to</p> <ul style="list-style-type: none"> - orient devices and prepare appropriately, - explain issues regarding antibiotics, drains, changing gloves, - use electric operating tables, - protect pressure areas, - prevent nerve injuries / neurapraxia. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - creation and closure of sub-pectoral pocket, - subpectoral pocket including total sub-muscular cover, - two stage reconstruction using TEX and subsequent exchange for FVI. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - preoperative marking of patient, - single staged reconstruction using FVI and dermal xenograft sling, - inferior dermal sling to achieve implant cover. - identification and correction of aesthetic deficiencies as secondary procedures, - nipple reconstruction techniques (see under Module 5).

Topic	ONCOPLASTIC BREAST
Category	ST 7 & 8 Final Years and TIG Fellows
Module 5	Reconstruction with autologous tissue-based techniques
Objective	<i>Acquire competence in autologous tissue based breast reconstruction including indications, technique and management of complications.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - classification of flaps (random versus axial / muscle flap - Mathes and Nahai / type of tissue being transferred) - factors affecting outcome in flap surgery (patient related, operative,

	<p>adjuvant therapy related),</p> <ul style="list-style-type: none"> - principles of flap surgery (replace “like with like”, reconstructive units, back-up plan and “life boat”, donor site considerations), - principles of microsurgery. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - relevant surgical anatomy and neurovascular supply of flaps used in breast reconstruction (LD, Abdominal wall, I/S GAP, TUG, TDAP), - concept of angiosomes, specifically in reconstructions using abdominal free flaps, - indications and CI’s for IBR and DBR – pre-operative factors to be considered in decision making, - tissue effects of DXT. Psychological impact of IBR and DBR, - advantages and disadvantages in comparison with implant based reconstruction, - pre-operative investigations for specific flaps, - complications of autologous tissue reconstruction including donor site morbidity. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - long term outcomes of breast reconstruction - assessment of outcome (clinical / PROMs), - reconstruction in prophylactic surgery, - partial breast reconstruction, - nipple reconstruction techniques, - flap salvage and options following failure, - lipomodelling in reconstruction (indications, complications and controversies – stem cells, mammographic follow-up). - relevant literature.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take history eliciting factors important for decisions regarding suitability / type of autologous reconstruction, - maintain clear documentation in the notes in the post-operative period. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess suitability for IBR vs DBR, - discuss advantages and disadvantages of reconstruction - specifically setting of realistic expectation, reconstruction as a process, template in-patient stay and complications, - describe importance of informed consent and joint decision making, - manage complications of surgery in clinic (wound, seroma), - manage patients appropriately in post-operative period. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - identify patients not suitable for autologous reconstruction (physical and psychological contraindications), - undertake appropriate post-operative assessment of (free) flaps, - plan algorithms for managing complications.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - positioning of patient on operating tissue,

	<ul style="list-style-type: none"> - protection of pressure areas, - prevention of nerve injuries / neurapraxia, - skin preparation, draping and antibiotic prophylaxis, - selection / arrangement of appropriate level of post-operative care, - use of electric operating tables. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - pre-operative marking of patient , - raising pedicled autologous flaps including latissimus dorsi. - in-setting of flap. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - preoperative marking up of patient, - nipple reconstruction techniques (Nipple sharing procedures, local flaps, tattooing), - raising pedicled autologous TRAM flap, - free-flap techniques, - microvascular anastomoses , - flap salvage for failing flaps, - flap shaping techniques, - flap revision techniques, - lipomodelling for correction of resectional defects, - lipomodelling in breast reconstruction.

Topic	AESTHETIC
Category	ST7 & 8 Final Years and TIG Fellows
Module 6	Aesthetic Surgery of the Breast
Objective	<i>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.</i>
Knowledge	<p>BASIC Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - applied and surgical anatomy of the breast, its blood, nerve supply and function, - development of the breast and congenital deformity and variations of breast form and associated structures, - hormonal control of the breast and its pathology, when deranged, - breast physiology in pregnancy and lactation, - benign pathologies of the breast, - presentation, clinical features of breast cancer, its staging, prognosis and management pathways, - effect of ionizing radiation on the breast and implants, - planning incisions on the breast. - closure and management of breast wounds. - self-perception and self-consciousness in relation to breast

	<p>conformation and proportion including the social and sexual dimensions, - pathology of deranged self-image.</p> <p>INTERMEDIATE Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - content, structure, physical and biological properties of breast implants, - spectrum of implants available and their applications, - design, principles and applications of tissue expanders, - nature, physiology and behaviour of implant capsules, - management of capsular contractures. - biology, implications, avoidance of and management of implant infection, - various designs and approaches to breast augmentation and their applications. - the issues surrounding breast size and its assessment. - complications of breast augmentation and their management. - various designs and patterns of breast reduction and mastopexy, - complications and management of breast reduction/remodelling. - presentation, management and complications of gynaecomastia. <p>ADVANCED Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> - assessment of envelope and volume in relation to breast asymmetry, both developmental and acquired, - classification and management pathways of the tuberous breast, - management pathways and choices in breast asymmetry, - impact of breast reconstruction choices on symmetry, - effect of time, ageing and pregnancy on breast asymmetry correction, - various techniques of breast reconstruction, their applications, design and planning, - complications of breast reconstruction, - techniques for salvage of failed breast surgery, - techniques for nipple reconstruction, including considerations of sequence and timing, - features of dysmorphophobia, - psychosexual dimension in aesthetic breast surgery.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess and undertake non-operative of the management of the acute surgical patient, - take a targeted breast history, - perform patient examination including breast examination with reference to aesthetic considerations. <p>INTERMEDIATE Demonstrate knowledge of the management algorithms for the procedures covered in this section including investigations.</p> <p>ADVANCED Should be able to</p> <ul style="list-style-type: none"> - demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning, - assess and accurately record aesthetic concerns about the breast, - formulate management plans in relation to aesthetic interventions, - clearly explain, consent and counsel potential patients for aesthetic breast surgery, - assess the psychological suitability for aesthetic breast surgery and

	<p>appropriately refer for expert psychological advice as necessary,</p> <ul style="list-style-type: none"> - undertake risk benefit analysis of non-pathological based surgery, - deal with disappointment and postoperative dissatisfaction
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - planning, execution and closing incisions on the breast with reference to aesthetic principles and sub units. - designing and conduction of excision of skin lesions of the breast, - undertaking an aesthetic approach to removal of benign lesions of the breast, - scar revision in aesthetic breast surgery <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - correction of the inverted nipple (various techniques), - bilateral breast augmentation by various routes, in various planes, - Wise pattern bilateral breast reduction, - vertical pattern bilateral breast reduction, - bilateral mastopexy of periareolar, vertical and Wise patterns, - excision of gynaecomastia, incorporating various forms of liposuction as appropriate. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - correction of the spectrum of nipple deformities, - unilateral or differential breast augmentation to attain symmetry, - unilateral or asymmetric breast reduction in pattern or volume to attain symmetry, - synchronous mastopexy and breast augmentation in several patterns, - correction of tuberous breast by combinations of mastopexy, augmentation or tissue expansion, - unilateral or differential mastopexy in pattern or extent to attain symmetry. - revision procedures following previous aesthetic surgery of the breast. - aesthetic surgery of the breast as above in patients with previous breast cancer or irradiation. - fat grafting for minor deformities of the breast.

* Module 6 within the Oncoplastic Breast syllabus is likely to take an indicative 8 months within a relevant programme for those TIG fellows having no prior experience of Breast Aesthetic Sugery.

Sarcoma

The Sarcoma module is available as one module

Topic	SARCOMA
Category	ST7 & 8 Final Years and TIG Fellows
Module (Single module)	Sarcoma
Objective	<p>The purpose of training in sarcoma surgery is to become competent in the diagnosis and management of sarcoma, notably the management of all forms of soft tissue sarcoma.</p> <p>All plastic surgery trainees are expected to have knowledge and exposure to soft tissue sarcoma diagnosis and management.</p>
Knowledge	<p>BASIC Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> • anatomy of the trunk, pelvis, axilla, and limbs. • osseous, muscular and neurovascular anatomy of the trunk and limbs • vascular, neuronal and lymphatic supply / drainage of the head & neck, trunk and limbs, blood supply of the skin • anatomy of perforators and angiosomes- relevant to planning of local flaps • anatomy of free-flaps relevant to reconstruction of extremity and truncal defect following excisional sarcoma surgery <p>INTERMEDIATE Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> • aetiology, incidence and relative anatomical distribution • pathology of primary soft tissue tumours and primary bone tumours • common benign sarcoma like disorders- lipomas, vascular and congenital malformations, fibromatosis including desmoids • specific history and diagnostic features (clinical and non-clinical) of bone and soft tissue sarcomas and their differential diagnoses • patterns of spread of sarcomas • classification of sarcoma • grading and staging systems in current use <p>Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> • relevant imaging modalities for different sarcoma • methods for obtaining histological diagnosis <p>Should demonstrate knowledge of assessment of patients presenting with sarcoma:</p> <ul style="list-style-type: none"> • guidelines for referral based on clinical suspicion (size symptoms etc.) • diagnostic imaging of sarcoma including X-rays, CT, MRI, USS, PET-CT, and imaging-assisted diagnostic biopsy • importance of correctly positioning biopsy access • histology of the common sarcomas • role of frozen section specimens • immunocytochemistry and cytogenetic techniques <p>ADVANCED Should demonstrate knowledge of :</p> <ul style="list-style-type: none"> • indications for different resection modalities in the management of

	<p>sarcomas, e.g. marginal, wide, compartmentectomy etc</p> <ul style="list-style-type: none"> • current concept of extremity preserving surgery with adjuvant radiotherapy compared with past concepts of compartmentectomy and amputation to achieve acceptable local recurrence rates <p>Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> • options for soft tissue reconstruction dependent of location and analysis of defect • reconstructive options for chest wall defects involving multiple rib resection • reconstructive options for abdominal wall defects <p>Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> • role of radiotherapy in the management of sarcoma and therefore advantages and disadvantages of different reconstructive options • role of chemotherapy in the management of soft tissue sarcomas • neo-adjuvant versus adjuvant therapy • follow-up schedule and appropriate imaging
<p>Clinical Skills</p>	<p>CLINICAL SKILLS</p> <p>BASIC Should demonstrate ability to:</p> <ul style="list-style-type: none"> • elicit a focused history from patients presenting with soft tissue lump, musculoskeletal pain or imaging suspicious for sarcoma • examine patient, assessing site, size, consistency and fixity of lumps and associated involvement of key anatomical structures • examine extremity neurovascular status • clinically assess soft tissue defects in order to guide reconstructive options <p>INTERMEDIATE Should demonstrate ability to:</p> <ul style="list-style-type: none"> • interpret imaging as part of planning reconstructive options <p>Should demonstrate ability to:</p> <ul style="list-style-type: none"> • assess potential donor sites for reconstructive option • plan both local and free flap reconstructions appropriate to defect • formulate logical procedural plan for complex reconstructive surgery <p>ADVANCED Should demonstrate ability to:</p> <ul style="list-style-type: none"> • work as a member of the multidisciplinary team and make appropriate referrals to related professionals. • apply NICE guidelines, improving outcomes guidance and support peer review. support research and audit in local, national and international settings
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform:</p> <ul style="list-style-type: none"> • direct closure of wound • harvesting and inseting of skin grafts • raising of local fasciocutaneous flaps <p>INTERMEDIATE</p>

	<p>Should be able to perform:</p> <ul style="list-style-type: none"> • raising gastrocnemius flap for coverage of proximal third tibial defects • direct nerve and vessel repair • harvesting of nerve and vein grafts • arterial and venous anastomosis • four compartment fasciotomy for complications of extremity surgery <p>ADVANCED</p> <p>Should be able to perform:</p> <ul style="list-style-type: none"> • marginal excision of soft tissue sarcoma • marginal excision of sarcoma from vital adjacent structures • wide excision of soft tissue sarcoma • skin excision in continuity with soft tissue tumour or elevation of viable skin flaps • access incisions which preserve maximum vascularity to surrounding soft tissues • compartmentectomy • amputation at various levels of extremities involving sarcoma • most steps in the raising and anastomosis of free flaps
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Skin Oncology

Allied disciplines:

Dermatology

The modules are as follows:

1. Basic Sciences
2. Primary treatment of skin-related neoplasia
3. Treatment of recurrent and chronic skin tumours
4. Reconstructive techniques for skin surgery
5. Scarring, wounds and other surgical conditions of the skin
6. Multidisciplinary team workings, allied professionals, palliative care and follow up regimes, trials, research and national guidelines

Topic	SKIN
Category	ST7 & 8 Final Years
Module 1	<p>Basic Sciences</p> <ul style="list-style-type: none"> • Embryology, development, anatomy and physiology • Skin assessment – examination, investigations including imaging and biopsy techniques
Objective	<p><i>Acquire competence in the development, anatomy and physiology of the skin in relation to its surgery</i></p> <p><i>Acquire competence in the diagnosis, use of imaging and management of suspicious skin lesions</i></p>
Knowledge	<p>BASIC</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of the skin-epidermal and dermal layers and appendigeal structures, - embryology of the skin, - histopathological appearance of skin, - anatomy of the body surface, in particular the head and neck, hands, nails and feet, - vascular, neuronal and lymphatic supply / drainage of the head & neck, trunk and limbs, blood supply of the skin, - diagnostic imaging of skin neoplasia X-rays, CT, MRI, USS, PET-CT, and imaging assisted diagnostic biopsy, - histology of the skin standard stains, - immunocytochemistry and cytogenetic techniques , - common benign skin disorders-hidradenitis suppurativa, epidermal cysts, lipomas, vascular and congenital malformations, - melanocytic naevi including giant, actinic lesions and epidermal/dermal lesions etc., risks of malignant transformation in chronic lesions, giant melanocytic naevi and Marjolin’s ulcers, - specific history and diagnostic features (clinical and non-clinical) of benign skin lesions (pigmented and non-pigmented), dysplastic

	<p>naevi, lentigo maligna, melanoma and non-melanoma skin cancers (basal cell carcinoma and squamous cell carcinoma), dermatofibroma, keratoacanthoma, pilomatrixomata, actinic keratoses, Bowen's disease,</p> <ul style="list-style-type: none"> - clinical features of dermatitis artefacta, folliculitis, pyogenic granuloma, inflammatory skin conditions (hidradenitis and acne vulgaris), fungal skin lesions, lentigines, angiomas, - difference between telangiectasia and spider naevi, - chronic wounds and pressure sores. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of special sites, the pelvis, epitrochlear and popliteal fossa, the triangular space of the back, the axilla, head and neck lymph node basins, - anatomy and access for diagnostic biopsies when required, - concepts and limitations of diagnostic techniques, dermoscopy, mapping biopsies, frozen sections, - range, indications and principles of surgical options for surgical ablation of tumours of the skin, - Mohs' micrographic surgery, - sentinel node biopsy, - the role of the skin multidisciplinary team, - diagnosis of lesions at difficult sites, subungual, large facial lesions, mucosal lesions, metastatic lesions, - the range of dressings for open skin lesions/wounds. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy in particular for block dissections of the axilla, inguinal, iliac and ilioinguinal regions, - functional and surgical anatomy of the face, head and neck, - the surgical options for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips), the trunk, the upper lower and lower limb, - the range of dressings available for complex wounds/ulcers.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focused skin history related to any skin lesion and skin symptoms, - use the magnifying glass, lighting, dermoscopy using polarised and non-polarised light, - plan non-operative management of small open wounds, - use non-operative methods of hemostasis in the acutely bleeding wound/ulcer, - recognise life threatening injuries both airway and vascular, - undertake resuscitation skills as laid out in ATLS, - examine of the head & neck, upper limb, lower limb, abdomen and pelvis, - assess lesions on the face, head and neck, hand, arm, trunk and lower limb, - examine regional lymph nodes, - organise discussion of cases at clinical meetings, - accurately record diagnostic findings, - use the current minimum dataset for skin cancers, - use current databases and audit and peer review tools according to published requirements and guidelines.

	<p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess the chronic ulcer/wounds, - recommend additional investigations to assess symptoms following inconclusive initial results, - interpret, CT and MRI scans, - interpret and discuss cytological and histological biopsy reports. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - interpret of any scans performed in particular PET, PET-CT and lymphoscintigraphy, - assess and formulate management plan for the large complex wound, - formulate appropriate and timely management, investigations, treatment and follow up plan for a patient all types of benign and malignant skin lesions
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - airway management using the techniques specified by ATLS, - provide circulatory support using the techniques specified by ATLS, - free-hand and ultrasound guided lesion biopsy - FNA of suspected lesions, punch biopsy, - harvesting of cells for cytological examination for fungus or malignancy, - aspiration of seromas or cystic skin lesions, - excision biopsy of undiagnosed skin lesions smaller than 1cm in size including those suspicious for malignancy and direct closure techniques, - application of the appropriate dressings in open wounds, - application of the appropriate dressings in infected skin wounds <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - surgical incision / excision biopsy of lesions at difficult sites (any size if periorbital, nasal, sole of the foot or hands and larger lesions on the pretibial region), - biopsy of subungual lesions, - use of Mohs micrographic surgery, - application of a negative pressure dressing. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - sentinel lymph node biopsy to include interpretation of result - surgical incision / excision biopsy of large suspicious skin lesions (greater than 1cm in size) including large facial lesions, - surgically debride and dress large complex wounds.

Topic	SKIN
Category	ST7 & 8 Final Years
Module 2	Primary treatment of skin-related neoplasia
Objective	<i>Acquire competence in the diagnosis, assessment and management of all types of primary skin-related neoplasia.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - epidemiology , - histological classification (basal cell carcinoma / squamous cell carcinoma / Melanoma / Merkel cell/ Porocarcinoma/ Adnexal and pre-cancerous lesions, - potential differential diagnosis skin lesions, - staging of skin cancer, (histological classifications, TMN, AJCC and current), - prognostic factors (tumour and patient related) and implications for patient treatment recommendations - implications of the occupational, family history, sun exposure history and immunosuppression, - principles of screening programmes within a population, - genetic counselling and referral indications, - margins of excision for different histological types of basal cell carcinomas, Squamous cell carcinomas, Bowen's disease, in-situ disease, dermatofibroma and benign dysplastic skin lesions. - peer review and NICE guidelines in treatment of melanoma and non-melanoma skin cancers (melanoma, SCC, Sarcoma, Bowen's, AK, Kaposi's sarcoma and BCC's) in particular margin recommendations, - the role of the MDT, - peer review and MDM documentation, <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - margins of excision of different stages of melanoma, porocarcinoma, Merkel Cell carcinoma, Dermatofibroma sarcoma Protuberans, fibrosarcoma and sarcoma, - indications for non-surgical treatment (Photodynamic therapy-PDT, Cryotherapy, laser and topical therapies) - indications for sentinel lymph node biopsy and other prognostic investigations, - adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies particularly for melanoma, - cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis, - palliative treatment options for skin cancer. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - association between specific high risk benign skin conditions with associated increased skin cancer risk, - genetic conditions in skin cancer, - melanoma tumour biology, - controversies that have existed around sentinel lymph node biopsy, its history, origins and basis of sentinel lymph node biopsy, - theories of melanoma spread - incubator versus marker theory, - important adjuvant and neo-adjuvant historical and current national

	and international trials (clinical/surgical, chemotherapy, radiotherapy, laser, hormonal and biological).
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focused skin related history, - elicit factors associated with benign and malignant skin neoplasia such as familial factors, sun exposure and mechanism of sun damage and skin types, - examine head & neck and truncal lymph node basins, - initiate appropriate investigations, use diagnostic techniques of clinical features, the diagnostic templates eg. ABCDE (asymmetry, borders, colour, diameter and evolving), - undertake dermoscopy and methods of recording lesion e.g. photography, diagrams for medicolegal and follow up reasons, - work effectively within the skin cancer and allied speciality multidisciplinary teams, (eg head and neck MDM). <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess and manage patients presenting with locally advanced disease, - recognise pathological features of common skin cancers –BCC, SCC and melanoma. - interpret lymphoscintigraphy, CT, MRI & PET scans, - recognise where further pathology or radiology may be required and request these appropriately, - develop and record management plan in line with peer review requirements and discuss rationale for management of common scenarios with patients and colleagues, - communicate skilfully. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - interpret FNA/USS and distinguish a primary pigmented lesion from a primary melanoma or a metastatic melanoma. - formulate management plan using skills of analysis, diagnostic synthesis and judgement, - discuss complex treatment scenarios with patients including discussion of all options, - take informed consent detailing advantages and disadvantages of proposed treatment, - discuss a cancer diagnosis with patients, - advanced communication skills, breaking bad news, giving prognostic information to the patient with skin cancer.
Technical Skills and Procedures	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - excision biopsy of lesion and incision biopsy of skin lesions-when indicated, - Fine Needle Aspiration-FNA / core sample of lymph nodes, - wider excision of skin tumours with the advised margins on the trunk, leg and arm, - local flap reconstruction (rotation / transposition / advancement), - optimum placement of incisions allowing for possible secondary surgery and future block dissections, - explain the rationale for use of split and full thickness skin grafts and artificial skin replacements, - pre-op skin prep and draping and antibiotic and venous

	<p>thromboembolism prophylaxis, - node sample in centres where SNB is not employed,</p> <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - wider excision of lesions with the advised margin on the skin of the head and neck, face, genitalia and hand, - head and neck, truncal and limb sentinel lymph node biopsy, - level I, II and III axillary dissections and inguinal block dissection, - regional flaps - rotational, advancement,. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - pelvic or head and neck block dissection, - reconstruction with regional and distant flaps, - free flap surgery, - reconstruction of aesthetic units (nose / eyelids / ears / lips) and special sites – nose, digits, eyes, genitalia and ears, - oculoplastic techniques
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Topic	SKIN
Category	ST7 & 8 Final Years
Module 3	Treatment of recurrent and chronic skin tumours
Objective	<i>Acquire competence in the diagnosis, assessment, investigation and management of all types of recurrent and metastatic skin cancers.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - epidemiology and genetics of skin, - basic understanding of familial syndromes, - genes/oncogenes associated with skin cancer, - margins of excision for metastatic lesions including national guidance, - types of cancer – recurrences, new primaries, related malignancies, - immunosuppressed patients, - syndromic patients, ie, Gorlin's, Cowden's, polyposis coli, melanosis, xeroderma pigmentosum, giant melanocytic naevi, skin conditions in immunocompromised patients, - TNM Staging of skin cancer, - prognostic factors (tumour and patient related) and implications for patient treatment recommendations, - rationale and types of imaging for prognostic and staging information, - biopsies, FNA, USS, X-Ray, CT, MRI, PET-CT, SPECT-CT and SNB, - cancer network guidelines in treatment of recurrent skin cancers, - functioning of the MDT, <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - indications for non-surgical treatment, - anatomy and techniques for excision and closure of block dissections, - adjuvant therapies including chemotherapy, radiotherapy, endocrine

	<p>therapy and biological therapies,</p> <ul style="list-style-type: none"> - Mohs micrographic surgery, isolated limb infusions, ECT, isolated limb perfusion, CO2 laser ablation and minimally invasive techniques including laparoscopic and robotic surgery, - cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis, - palliative treatment options for the skin cancer patient, - management of the complex wound, - hospice care <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - appropriate use of and pitfalls of frozen section, - association between specific high risk benign skin conditions with associated increased skin cancer risk, - important adjuvant and neo-adjuvant historical and current national and international trials (clinical/surgical, chemotherapy, radiotherapy, hormonal and biological), - role of Human Papilloma Virus-HPV, in cancer aetiology
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - take focused skin related history, - elicit factors associated with malignant non-skin related neoplasia, - examine skin of entire body surface for additional primary tumors, - examine all sites for regional lymphadenopathy, - initiate appropriate investigations, - work effectively within the skin cancer multidisciplinary team, - manage the non-operative aspects of the chronic wound including pressure sores <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - interpret CT, MRI & PET scans, - assess and manage patients presenting with locally advanced disease, - recognise where further pathology or radiology may be required and request these appropriately, - develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate management plan using skills of analysis and diagnostic synthesis, judgement in particular for the patient with multiple co-morbidities, - discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent, - discuss a skin cancer diagnosis and prognosis with patients, - communicate skilfully with patients and with other members of the clinical team,

<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - incision biopsy of lesions, - excision biopsy of lesions, - FNA / core sample of lymph nodes, - undertaking local flap reconstruction (rotation / transposition / advancement). <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - cervical sentinel lymph node biopsy - regional lymph node dissections of the axilla and groin, - hernia repair - regional flaps, pedicled reconstructions - use of dermal substitutes for wound resurfacing <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - pelvic and head and neck dissections, - free flap surgery, - reconstruction of aesthetic units (nose / eyelids / ears / lips), isolated limb infusion, - isolated limb perfusion, - mapping biopsy techniques such as Mohs micrographic surgery.

Topic	SKIN
Category	ST7 & 8 Final Years
Module 4	Reconstructive techniques for skin surgery
Objective	<i>Acquire competence in the planning, execution and management of appropriate soft tissue reconstruction of skin defects.</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - anatomy of perforators and angiosomes – relevant to planning of local, regional and distal flaps, - anatomy of local, regional and free flaps suitable for head & neck reconstruction, - classification of flaps (random v axial / muscle flap - Mathes and Nahai / type of tissue being transferred), - advantages and disadvantages of local, regional and free flaps in the patient post skin tumour excision, - use of local, regional and free flaps in the head & neck/upper limb/leg/chest and trunk, - factors affecting outcome in flap surgery (patient related, operative, adjuvant therapy related), - principles of flap surgery (replace “like with like”, reconstructive units, back-up plan and “life boat”, donor site considerations), - principles of microsurgery <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - planning and prioritising treatment within the head & neck MDT setting, - interpreting angiographic abnormalities when planning reconstruction, surgical anatomy and neurovascular supply of flaps used in head & neck reconstruction, - indications for preoperative investigations for specific flaps, - airway management according to techniques specified in ATLS - post-operative flap monitoring techniques, - complications of autologous tissue reconstruction including donor site morbidity, <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - factors determining decision making in choice of flaps and tissue for soft tissue defect reconstruction, - factors determining decision making in choice of flaps and tissue for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips), factors determining appropriate surgical ablation techniques, - range, indications and principles of surgical options and non-operative techniques, - long term outcomes of different types of reconstructions, - assessment of outcome, - flap salvage and options following failure.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess the soft tissue defect, - take history, eliciting factors important for decisions regarding suitability / type of reconstruction,

	<ul style="list-style-type: none"> - perform contemporaneous and appropriate record keeping. - manage uncomplicated wounds using a range of dressings, - plan both local and free flaps resurfacing of soft tissue defects, - co-ordinate soft tissue reconstruction in conjunction with ablative team, - manage the post Mohs patient, <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - discuss advantages and disadvantages of reconstructive options with patients specifically setting realistic expectations, advising on reconstruction as a process, and detailing possible complications, - take informed consent from patients and participate in joint decision making, - arrange appropriate level of post-operative care. - manage complications of surgery appropriately in post-operative period and in the clinic. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - clinically assess complex reconstructive requirements and formulate appropriate management plan, - interpret investigations as part of formulating management plan.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - positioning of patient on operating table., - protection of pressure areas, - prevention of nerve injuries / neurapraxia, - pre-operative marking of patient, skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis, - split skin grafting, full thickness skin grafting - range of local flaps <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - reconstruction of the scalp and management of chronic scalp wounds and the unstable scalp, - raising pedicled autologous flaps, - in-setting of flap, - harvesting chondrocutaneous, cartilage, composite grafts and vein grafts. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - 3D reconstruction of specialised structures, - reconstruction of the periorbital structures/ear and nose, - microvascular anastomoses, - flap salvage for failing flaps, - flap shaping techniques, - flap revision techniques

Topic	SKIN
Category	ST7 & 8 Later Years
Module 5	Scarring, wounds and other surgical conditions of the skin
Objective	<i>Acquire competence in the management of the patient with the longer term outcomes of benign and malignant skin conditions / post surgical scarring and chronic wounds</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - skin anatomy, - aetiology and related benign conditions, - hypertrophic scars, keloids, dermatofibroma, epidermal cysts, lentiginos, actinic keratoses, xanthelasmata, lipomas, - history and examination of the skin. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - dermoscopy and imaging techniques of the skin, - Marjolin's ulcer, pilomatrixoma, DFSP, hidradenitis suppurativa, acne scarring, inflammatory skin conditions, adult vascular malformations. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - consequences of nerve resection and other functional deficits after resection of tumour, - lymphoedema, - complex wounds, - psychological and social issues that can affect the skin cancer patient, - reconstructive techniques for pressure sores and large complex wounds.
Clinical Skills	<p>BASIC Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess the skin using dermoscope, - recognise infection, induration, lymphoedema, seroma, post radiotherapy recurrence in complex scars. <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - assess surgical scar and deploy non-operative techniques for scar improvement, - injection techniques for scar improvement, - manage functional and psychological effects of post cancer resection surgery, - participate in multidisciplinary management of patients with large, chronic vascular malformations. <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - undertake nerve defect assessments, - make decisions and analyse the options for aesthetic improvement in the surgically-scarred cancer patient including advance communications skills.

<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - debulking of keloids, - excision of benign lesions, - shave excisions, - laser ablation of skin lesions, - incision and curettage for active hidradenitis suppurativa. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - botulinum toxin and filler injections, - scar release, - z-plasty, - reconstruction post excision of scars, - surgical options of laser, - excision or sclerotherapy for vascular malformations, - fat grafting. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - laser resurfacing, - rejuvenation of the skin, - reconstructive techniques for advanced and crippling hidradenitis suppurativa, - reconstruction techniques for pressure sores and large complex wounds, lymphatic reconstruction/anastomosis, - surgical excision of lymphoedema.

Topic	SKIN
Category	ST7 & 8 Final Years
Module 6	Multidisciplinary team workings, allied professionals, palliative care and follow up regimes, trials, research and national guidelines
Objective	<i>Acquire competence working as a member of the multidisciplinary team, knowledge of and ability to consider appropriate referral to other professionals. A full understanding of NICE Improving outcomes guidance and Peer review. An understanding of research and audit in local, national and international settings</i>
Knowledge	<p>BASIC Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - national guidelines for the diagnosis, treatment and follow up of BCC, SCC's, Bowen's, Melanoma, DFSP and Sarcoma, - surgical and non surgical options. <p>INTERMEDIATE Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - management of the patient with recurrent disease (surgical, non-surgical and radiotherapy options), - stages of bereavement that can be associated with loss of body image and the clinical and psychological supports that can be put in place to assist the patient cope with that loss. <p>ADVANCED Should demonstrate knowledge of</p> <ul style="list-style-type: none"> - current trials, ethics, research and pathways to develop trials/research within a service, - impact of disfigurement, - consequences of an altered appearance, what it involves psychologically and socially, and the impact of an individual's body image on their life and that of their family, - process by which an individual can successfully adjust to disfigurement and how the multidisciplinary team can assist with that process.
Clinical Skills	<p>BASIC Should demonstrate ability in using communication and referral pathways to specialist MDM's</p> <p>INTERMEDIATE Should demonstrate ability to</p> <ul style="list-style-type: none"> - interpret lymphoscintigraphy, CT, MRI, PET, FNA, USS and pathology minimum dataset, - develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues, - apply psychological assessment tools for evaluation of psychological needs (patient questionnaires). <p>ADVANCED Should demonstrate ability to</p> <ul style="list-style-type: none"> - formulate management plan using skills of analysis and diagnostic synthesis, judgement, - discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and taking

	<p>informed consent,</p> <ul style="list-style-type: none"> - develop the skills to arrange patient-centered care with patient as partner in the process, - provide realistic information and guiding patient decision-making regarding choices available and timing of those treatments, - manage and lead the multi-disciplinary teams in respect of provision of psycho-social care, - arrange the care pathway that supports an individual to successfully adjust to disfigurement through giving the individual and family specific life-skills -these include the patient being provided with information about their condition and its treatment, developing a positive outlook/belief system, learning to cope with their feelings, exchanging experiences with others who've "been there" and social skills training to manage other people's reactions.
<p>Technical Skills and Procedures</p>	<p>BASIC Should be able to perform</p> <ul style="list-style-type: none"> - excision of small skin recurrences / <i>in transit</i> metastases, - recording surgical procedures, - handling of surgical specimens, - orientation and appropriate carriage medium for skin specimens, - performing FNA. <p>INTERMEDIATE Should be able to perform</p> <ul style="list-style-type: none"> - treatment of painful metastatic lesions and recurrences by surgical resection/laser resection of metastatic lesions, - groin and axillary dissections, - fasciotomy for the leg or the upper limb. <p>ADVANCED Should be able to perform</p> <ul style="list-style-type: none"> - head and neck resections, - ILI, ILP, CO2 laser, - minimally invasive surgical methods of isolated metastases, - pelvic resections.

All trainees / all modules

Dealing with patients impacted by disfigurement and loss of form and function

Professional skills for surgeons dealing with patients impacted by disfigurement and loss of form and function are necessary skills for all of our profession.

It is essential that the plastic surgeon understands and recognises the psychosocial issues caused by trauma, disease and surgery including anxiety, depression, altered body image, bullying, social prejudice and even discrimination. This appreciation is a core competency that applies throughout the curriculum and that part which applies at Intermediate Years is introduced here.

Topic	DEALING WITH PATIENTS IMPACTED BY DISFIGUREMENT AND LOSS OF FORM AND FUNCTION
Category	ALL TRAINEES / ALL MODULES
Module (Single module)	Dealing with patients impacted by disfigurement and loss of form and function
Objective	<i>To develop an understanding of the meaning of disfigurement, the impact of an altered appearance and what it involves psychologically and socially, and the impact of an individual's body image and life both on them and their family</i>
Knowledge	<p>BASIC</p> <ul style="list-style-type: none"> - Demonstrates knowledge of the psycho-social issues that may follow from trauma, disease and surgery including social anxiety, depression, bullying, prejudice isolation and exclusion. - Demonstrates awareness of those parts of the specialty where psychosocial issues can have particular impacts for patients (Burns, Cleft, Craniofacial, Hand, Head & Neck, Genitourinary reconstruction, Oncoplastic Breast, Skin Oncology, Vascular anomalies) <p>INTERMEDIATE</p> <ul style="list-style-type: none"> - Demonstrates knowledge of the factors that predict patient ability to cope with surgical treatment - Defines the stages of bereavement associated with loss of body image and the clinical and psychological supports that can be put in place to assist the patient cope with that loss
Clinical Skills	<p>BASIC</p> <ul style="list-style-type: none"> - Demonstrates ability to elicit signs and symptoms of distress and anxiety in patient undergoing plastic surgery - Demonstrates ability to make an appropriate referral to a clinical psychologist or other supporting member of the multidisciplinary team <p>INTERMEDIATE</p> <ul style="list-style-type: none"> • Provides realistic information and guides patient decision-making regarding choices available and timing of those treatments. Treats the patient as partner in the decision-making process • Demonstrates confidence to elicit psychological and social needs in a range of settings.

Technical Skills and Procedures	<i>Not applicable</i>

HEAD AND NECK TRAINING INTERFACE GROUP FELLOWSHIP SYLLABUS

August 2014

Overview:

The Training Interface Group (TIG) Fellowship is intended for doctors in Oral and Maxillofacial Surgery, Plastic Surgery and Otolaryngology to gain access to specialist training in Head and Neck Surgical Oncology. It is intended for post-examination trainees near or within their last year of pre-certification training.

The intention is to ensure:

1. Exposure to and skills gained in key topics to the level of expert. These will be a cross-section of experience from the three parent specialties
2. Exposure to and skills gained in two advanced topics to the level of proficiency from a number of areas as agreed by the educational supervisor and trainee at the start of the fellowship. These may cross any of the three parent specialty boundaries
3. The structure of the syllabus will allow the advanced topics to be tailored to the learning requirements of each trainee to ensure the trainee can gain skills and knowledge to the level required for multidisciplinary head and neck team working as a consultant.

Key topics:

1. Airway Management
2. Swallowing and Speech
3. Surgical Skills
4. Wound Care
5. Decision Making and Management Skills for Head and Neck Cancer
6. Management of the Neck

The trainee would be required to continue to develop their professional and leadership skills by following the generic Professional Behaviour and Leadership Skills (PLS) syllabus as detailed in the ISCP curriculum.

Advanced topics:

1. Tumours of the Larynx
2. Tumours of the Oro and Hypo Pharynx
3. Tumours of the Oral Cavity including Access Procedures
4. Tumours of the Skin of the Head and Neck
5. Reconstruction in Head and Neck Oncology
6. Thyroid Disease
7. Salivary Gland Disease
8. Tumours of the Nose and Paranasal Sinuses
9. Management of the Facial Nerve.

The knowledge and skills standards are those applied for all pre-certification trainees.

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

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

Standards for clinical and technical skills:

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.

Key Topic 1: Airway Management in Adults

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with upper airway disorders in adults.

Knowledge

- 4 – Demonstrate a detailed knowledge of the anatomy and physiology of the upper aerodigestive tract, both anatomical and as seen through cross sectional imaging
- 4 – Understand the microbiology and pathology of disorders of the upper aerodigestive tract
- 4 – Understand the principles of the management of patients with airway obstruction
- 4 – Know the different methods of securing an airway safely (surgical and non surgical) in an elective and emergency setting

- 3 – Understand the indications and techniques for surgical debulking of upper airway malignancies
- 4 – Know the different options for surgical and non surgical management of upper airway obstruction including the evidence for the different options.

Clinical Skills

- 4 – Be able to elicit an appropriate clinical history and correctly interpret physical signs
- 4 – Be aware of the role of appropriate investigations in the management of airway obstruction
- 4 – Demonstrate the ability to work effectively with anaesthetists and those involved in critical care who manage the 'shared airway'
- 4 – Demonstrate expertise in the safe assessment of patients with critical airways
- 4 – Can demonstrate expertise in managing an emergency due to airway obstruction including leadership of teams managing such emergencies.

Technical Skills and Procedures

- 4 – Be competent at performing the following diagnostic procedures; fiberoptic nasopharyngoscopy, microlaryngoscopy, pharyngo oesophagoscopy
- 3 – Be competent at performing endotracheal intubation
- 4 – Be proficient at performing a surgical tracheostomy in the elective and emergency setting both under general and local anaesthesia
- 2 – Be competent at straightforward debulking procedures and percutaneous tracheostomy.

Key topic 2: Swallowing, Speech and Nutrition

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with speech and swallowing disorders.

Knowledge

- 4 – Know the anatomy of the upper aerodigestive tract
- 4 – Physiology of swallowing
- 4 – Know the anatomy of the larynx, tongue, palate and upper airway and the production of speech, including neuroanatomy
- 4 – Know the various hypotheses and mechanisms relating to the aetiology of dysphagia
- 4 – Understand the investigation and imaging of a patient with dysphagia
- 4 – Understand the pathophysiology of aspiration, its complications and its management
- 4 – Understand the causes of speech abnormality and their anatomical associations
- 3 – Know investigations for speech and swallowing pathology
- 3 – Know the treatment options for surgical voice restoration post laryngectomy
- 4 – Understand the principles and importance of nutrition relevant to head and neck cancer.

Clinical Skills

- 4 – Can elicit a targeted history and examination of a patient with speech and swallowing dysfunction, including flexible nasendoscopy
- 4 – Works effectively with speech and language therapists in the assessment and management of patients with speech and swallowing disorders
- 4 – Able to manage aspiration
- 4 – Able to manage patients with non-oral enteral feeding
- 2 – Use and interpretation of quantitative and qualitative investigations of speech and swallowing e.g. VHI, GRBAS, FEES
- 3 – Change of tracheo oesophageal valve.

Technical Skills and Procedures

- 4 – Be competent at inserting nasogastric tubes under local and general anaesthesia
- 4 – Be competent at performing the following diagnostic procedures; fiberoptic nasopharyngoscopy, microlaryngoscopy, pharyngo oesophagoscopy
- 4 – Oesophageal dilatation

- 2 – Cricopharyngeal myotomy (including use of Botox)
- 2 – Vocal cord medialisation procedures
- 2 – Tracheo oesophageal puncture
- 1 – PEG insertion.

Key topic 3: Surgical Skills

Objective

To be competent in the essential surgical skills needed for head and neck surgical oncology.

Knowledge

- 4 – Understanding of different techniques for excision of head and neck cancer
- 4 – Understanding of techniques for nerve preservation during surgery
- 4 – Understanding of the techniques and options for use of different wound closure materials and techniques
- 4 – Understanding of techniques of local and distant flap closure (local, pedicled and free flaps)
- 4 – Design of free flaps
- 3 – Applied anatomy and physiology of free flap surgery
- 4 – Knowledge of the use of lasers in the head and neck including laser safety
- 4 – Knowledge of the indications for robotic surgery in head and neck oncology
- 4 – Use of the harmonic scalpel
- 4 – Physiology of and indications for photodynamic therapy.

Clinical Skills

- 4 – Demonstrate joint working with surgical colleagues in planning and executing surgical procedures where appropriate
- 4 – Have attained appropriate mandatory safety training in use of lasers.

Technical Skills and Procedures

- 4 – Safe use of KTP and CO2 laser
- 4 – Split skin and full thickness skin grafts
- 3 – Axial and random pattern local flaps
- 3 – Raising of Pectoralis Major flap
- 2 – Raising of a comprehensive range of free flaps, for example: radial forearm, ALT, Rectus abdominis, DCIA, scapular etc.
- 1 – Microvascular anastomosis
- 2 – Neural anastomosis.

Key topic 4: Wound Care and Implantology

Objective

To be competent in managing patients requiring implant surgery and complex wound care. This module gives some indication of the breadth and depth of knowledge and surgical skills required. The list should not be considered to be fully inclusive or exhaustive.

Knowledge

- 4 – Applied anatomy, physiology and pathology of wound healing
- 4 – To have a full understanding of the principles of surgical closure of wounds
- 4 – To have a full awareness of risks of infection and mechanisms for reducing the risk of infection including relevant prophylaxis
- 4 – To understand the indications for wound closure by primary and secondary intention and use of tissue transfer
- 4 – Tissue expansion techniques
- 3 – Knowledge of types of tissue fillers and their indications
- 4 – Management of complicated wounds including revision surgery
- 3 – Camouflage techniques

- 3 – Use of intra and extra oral prostheses
- 3 – Types of and indications for implantation technology.

Clinical Skills

- 4 – Demonstrate the ability to manage the common wound complications of head and neck surgery including fistula management and chyle leakage
- 4 – Non surgical management of wounds
- 4 – Demonstrates competence in management of surgical wounds including appropriate patient counselling
- 1 – Use of camouflage techniques
- 2 – Management of intra and extra oral implants.

Technical Skills and Procedures

- 4 – Wound closure using primary and secondary intention
- 4 – Skin grafts
- 1 – Tissue expansion techniques and dermal fillers
- 1 – Intra and extra oral implantation.

Key Topic 5: Decision Making, Management Skills and MDT Working in Head and Neck Oncology

Objective

To be competent in the Multidisciplinary management of patients with HNC.

Knowledge

- 4 – Understanding of treatment modalities available, both surgical and non-surgical
- 4 – Understanding of management of pain in the acute and chronic situation
- 4 – Understanding of palliative care for patients with specific reference to head and neck cancer
- 4 – Knowledge of Quality Framework for Management of HNC in England and devolved nations
- 4 – Core and extended MDT members and their role
- 4 – Understands the principles of research applied to Head and Neck Cancer
- 4 – Audit and data collection (DAHNO)
- 4 – Qualitative and quantitative research methods in HNC including NIHR portfolio
- 4 – Survivorship and role of patient representative groups.

Clinical Skills

- 4 – Demonstrates full participation in and leadership of MDT
- 4 – Demonstrates ability to discuss surgical and non surgical management options with patients and their families and record outcome of discussions
- 4 – Effective and targeted pretreatment management of patients
- 4 – Management of acute and chronic complications of treatment
- 4 – Conducts at least one relevant audit
- 4 – Involvement in relevant research
- 1 – Psychological management including CBT techniques
- 1 – Radiotherapy planning
- 4 – Becomes actively involved in service improvement projects.

Key Topic 6: Management of the Neck

Objective

To demonstrate competence in the management of metastatic neck disease.

Knowledge

- 4 – Anatomy of the neck
- 4 – Pattern of spread of neoplasms in the head and neck including for squamous carcinoma, salivary gland carcinoma, thyroid cancer, skin cancer
- 4 – Understands the concept and management of carcinoma of occult primary (CUP)
- 4 – UICC/AJC staging of metastatic neck disease
- 4 – Classification of neck dissections
- 4 – Imaging techniques
- 4 – Cytopathological investigations
- 4 – Understanding of the management of complications including shoulder dysfunction
- 4 – Evidence based options for treatment of metastatic neck disease including non-surgical management
- 4 – Indications for different neck dissections
- 4 – Relevance of co-morbidity.

Clinical Skills

- 4 – Assessment of patient for neck dissection and appropriate preoperative counselling
- 4 – Peri and postoperative management
- 4 – Use and interpretation of investigations
- 4 – Multi disciplinary teamwork
- 3 – Management of recurrent neck disease
- 4 – Management of complications of neck dissection.

Technical Skills and Procedures

- 4 – Lymph node biopsy
- 4 – Selective neck dissection
- 4 – Modified radical neck dissection
- 4 – Radical neck dissection
- 3 – Extended radical neck dissection
- 2 – Free flap repair of skin defect
- 3 – Carotid artery ligation.

Advanced Topic 1: Tumours of the Larynx

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with laryngeal cancer.

Knowledge

- 4 – Anatomy and embryology of the larynx
- 4 – Physiology of speech and swallowing
- 4 – Pathological conditions affecting the larynx including non-squamous neoplastic conditions
- 4 – Epidemiology and aetiology of laryngeal cancer
- 4 – Presentation of laryngeal cancer
- 4 – Treatment options for laryngeal cancer including organ preservation strategies and side effects of treatment
- 4 – Rehabilitation of speech and voice disorders following treatment of laryngeal cancer
- 3 – Complications of surgery for laryngeal cancer
- 3 – Molecular biology of laryngeal cancer
- 4 – UICC / AJC TNM staging of laryngeal/neck cancer.

Clinical Skills

- 4 – Full history and examination including in patients with difficulties with communication
- 4 – Flexible nasopharyngoscopy
- 4 – Preoperative assessment / management of co-morbid disease
- 4 – Staging including use of appropriate special investigations
- 3 – Assessment of speech and swallowing
- 3 – Videolaryngoscopy / FEES
- 4 – Management of the postoperative patient

- 4 – Management of tracheo-oesophageal valves
- 4 – Management of complications following laryngeal surgery including pharyngocutaneous fistulae.

Technical Skills and Procedures

- 4 – Microlaryngoscopy with documentation
- 4 – Transoral endoscopic resection of laryngeal tumours
- 3 – Partial laryngeal resections (hemilaryngectomy, near total laryngectomy)
- 4 – Total laryngectomy
- 3 – Surgical voice restoration
- 4 – Tracheostomy (open/percutaneous)
- 3 – Vocal cord medialisation procedures
- 1 – Robotic Surgery.

Advanced Topic 2: Tumours of the Oro and Hypopharynx

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with oro and hypopharyngeal cancer.

Knowledge

- 4 – Anatomy and embryology of the Pharynx
- 4 – Physiology of swallowing
- 4 – Pathological conditions affecting the Pharynx including non-squamous neoplastic conditions
- 4 – Epidemiology and aetiology of Pharyngeal cancer including HPV and its implications for management and prognosis
- 4 – Presentation of Pharyngeal cancer
- 4 – Treatment options for Pharyngeal cancer including Organ preservation strategies and side effects of therapy
- 3 – Molecular biology of Pharyngeal cancer
- 4 – Complications of surgery for the oropharynx and hypopharynx
- 4 – UICC / AJC TNM staging of Pharyngeal / neck cancer

Clinical Skills

- 4 – Full history and examination including in patients with difficulties with communication
- 4 – Flexible nasopharyngoscopy
- 4 – Preoperative assessment / management of co-morbid disease
- 4 – Staging including use of appropriate special investigations
- 3 – Assessment of speech and swallowing
- 3 – Videolaryngoscopy / FEES
- 4 – Management of the postoperative patient
- 4 – Management of complications
- 4 – Management of tracheo-oesophageal valves

Technical Skills and Procedures

- 4 – Panendoscopy including tonsillectomy / rigid and flexible oesophagoscopy
- 4 – Transoral endoscopic laser resection of Pharyngeal tumours
- 4 – Partial Pharyngeal resections and access surgery
- 4 – Total Pharyngolaryngectomy
- 3 – Reconstruction with local flaps, free vascularised flaps or gastric transposition
- 4 – Tracheostomy (open/percutaneous)
- 2 – Placement of gastrostomy feeding tubes
- 4 – Neck dissection
- 1 – Robotic surgery

Advanced Topic 3: Tumours of the Oral Cavity

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with oral cancer.

Knowledge

- 4 – Aetiology of benign tumours of the oral cavity and teeth
- 4 – Aetiology, epidemiology, pathology, natural history of neoplasms of the oral cavity and contiguous structures including metastatic disease
- 4 – Treatment options in the management of oral cancer including organ preservation strategies and management of complications including osteoradionecrosis
- 4 – Principles of management of benign aggressive tumours of the jaws including Ameloblastoma
- 4 – Differential diagnosis and management of leukoplakic / erythroleukoplakic lesions of the oral cavity
- 4 – Surgical anatomy of the oral cavity and contiguous structures
- 4 – UICC/AJC TNM Staging classification of oral malignancies
- 4 – Physiology of swallowing
- 4 – Principles of reconstructive surgery of the oral cavity
- 4 – Pathophysiology, Diagnosis and management of osteoradionecrosis
- 4 – Complications following surgery for oral cavity cancer.

Clinical Skills

- 4 – Full history and examination including patients with difficulties with communication
- 4 – Preoperative assessment / management of co-morbid disease
- 4 – The appropriate use of investigations including imaging, examination and biopsy to stage the disease
- 4 – The appropriate use of surgical access routes to tumour sites within the oral cavity and adjacent structures
- 4 – The appropriate mode of tumour excision (including laser) compatible with safe margins of excision and maximising preservation of function
- 4 – The appropriate use of reconstructive techniques to maximise function including post operative care of flaps
- 4 – Appropriate pre-treatment assessment of oral hygiene / health and appropriate pre operative management thereof
- 4 – Management of complications including oro-cutaneous fistulae.

Technical skills and procedures

- 4 – Dental extractions
- 4 – Partial glossectomy (including Use of laser)
- 4 – Mandibular split, lip split and mandibulotomy
- 2 – Mid facial degloving and mid facial osteotomies
- 4 – Tumour excision; floor of mouth, buccal, hard palate including use of laser
- 3 – Reconstructive surgery; appropriate selection of free/myocutaneous/local flaps
- 4 – Correct use of different types of laser
- 2 – Late dental re-habilitation and other facial prostheses.

Advanced Topic 4: Tumours of the Skin**Objective**

To understand the aetiology, presenting signs, symptoms and management of patients presenting with skin cancer of the head and neck.

Knowledge

- 4 – Anatomy and embryology of the skin of the face, neck and ears
- 4 – Pathological conditions affecting the skin including non-squamous neoplastic conditions
- 4 – Epidemiology and aetiology of skin cancer
- 4 – Management of skin cancer
- 4 – Understanding of Mohs surgical techniques
- 4 – UICC / AJC TNM staging of skin cancer.

Clinical Skills

- 4 – Full history and examination including in patients with difficulties with communication
- 4 – Preoperative assessment / management of co-morbid disease
- 4 – Staging including use of appropriate special investigations
- 4 – Management of the postoperative patient
- 4 – Management of complications
- 4 – Management of patients within a multidisciplinary setting.

Technical Skills and Procedures

- 4 – Excision of skin tumours
- 4 – Split and full thickness skin grafts
- 3 – Local and regional flaps for reconstruction
- 2 – Mohs micrographic surgery
- 3 – Use of pedicled and/ or free flaps for reconstruction
- 4 – Neck dissection
- 3 – Sentinel lymph node biopsy.

Advanced Topic 5: Reconstruction in the Head and Neck**Objective**

To demonstrate competence in complex reconstruction in head and neck surgical oncology.

Knowledge

- 4 – Applied anatomy of anatomical regions of donor sites for free and pedicled flaps
- 4 – Microvascular anatomy
- 4 – Applied physiology of free tissue transfer
- 4 – Indications for free tissue transfer, pedicled and local axial/ random pattern flaps
- 4 – Understanding of influence of comorbidity on tissue transfer
- 4 – Preoperative assessment techniques with respect to tissue transfer including special investigations
- 4 – Understanding of principles of bony reconstruction
- 4 – Understanding of principles of neural reconstruction

Clinical Skills

- 4 – Targeted history and examination
- 4 – Demonstrates competence in preoperative counselling of patient undergoing tissue transfer with explanation of different options for reconstruction
- 4 – Demonstrates appropriate use and interpretation of relevant special investigations
- 4 – Competent peri and postoperative management of a patient undergoing tissue transfer
- 4 – Demonstrates effective multidisciplinary working with other surgeons, anaesthetists and intensivists
- 4 – Management of complications including orocutaneous and pharyngocutaneous fistula

Technical Skills and Procedures

- 4 – Split and full thickness skin grafts
- 4 – Neural anastomosis
- 3 – Microvascular anastomosis (vein and artery)
- 4 – Pectoralis Major flap
- 2 – Salvage surgery of failed free flaps
- 4 – Bony reconstruction with plating systems
- 3 – Free fasciocutaneous flaps
- 3 – Free myocutaneous flaps
- 3 – Free osseocutaneous flaps
- 3 – Free osseomyocutaneous flaps.

Advanced Topic 6: Disease of the Thyroid gland and Parathyroid Glands

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with thyroid cancer.

Knowledge

- 4 – Anatomy and embryology of the thyroid / parathyroid glands
- 4 – Thyroid / parathyroid pathology / immunology
- 4 – TNM / AJC TNM Classification of thyroid cancer
- 4 – Presentation of thyroid / parathyroid / cancer
- 4 – Investigation and evaluation of thyroid and parathyroid disorders
- 4 – Treatment options including non-surgical options
- 4 – Principles of post operative management and monitoring (TSH suppression, Tg and Calcium monitoring)
- 4 – Cytological Grading (Thy1 - 5 grading) of FNA samples
- 4 – Appropriate knowledge of current British Thyroid Association Guidelines for management of thyroid masses
- 3 – Management of medullary cell ca/multiple endocrine neoplasia.

Clinical Skills

- 4 – Full history and examination including with patients with difficulties with communication
- 4 – Assessment of thyroid status
- 4 – FNA / microtrephine techniques including U/S guided sampling
- 4 – Preoperative assessment including airway assessment and vocal cord check
- 4 – Staging including use of appropriate special investigations
- 4 – Management of the postoperative patient
- 4 – Management of complications including injury to recurrent laryngeal nerve, airway management and hypocalcaemia.

Technical Skills and Procedures

- 4 – FNAC and core biopsy with and without ultrasound guidance
- 4 – Partial thyroidectomy
- 4 – Total thyroidectomy
- 4 – Parathyroidectomy
- 4 – Neck dissection including central nodes
- 3 – Mediastinal exploration including sternotomy and lateral thoracotomy.

Advanced Topic 7: Salivary Gland Cancer**Objective**

To understand the aetiology, presenting signs, symptoms and management of patients presenting with salivary gland cancer.

Knowledge

- 4 – Anatomy and embryology of major and minor salivary glands including Vth, VIIth - XIIth, cranial nerves
- 4 – Salivary gland physiology
- 4 – Salivary gland pathology
- 4 – Epidemiology and aetiology of salivary gland cancer
- 4 – Presentation of salivary gland cancer
- 4 – Investigations and evaluation of salivary gland disease
- 4 – Principles of treatment of patients with salivary gland cancer
- 4 – UICC / AJC TNM staging of nasopharyngeal cancer
- 4 – Complications of surgery for salivary gland disease.

Clinical Skills

- 4 – Full history and examination of salivary glands and associated cranial nerves
- 4 – Preoperative assessment including co-morbidities and dentition
- 4 – Use of appropriate pre-operative investigations
- 4 – Staging including use of appropriate special investigations and panendoscopy / EUA

- 4 – Management of the postoperative patient and complications specific to salivary gland surgery including facial nerve injury, Freys syndrome and post-operative haematoma
- 4 – Demonstrates ability to manage patients within a multidisciplinary setting.

Technical Skills and Procedures

- 4 – FNAC / incisional biopsy of oral lesions
- 4 – Set up and use of intraoperative facial nerve monitor
- 4 – Submandibular gland excision
- 3 – Extracapsular dissection parotidectomy
- 4 – Superficial parotidectomy
- 4 – Total (conservative and radiacal) parotidectomy
- 4 – Extended parotidectomy with neck dissection and flap reconstruction
- 4 – Minor salivary gland excision
- 3 – Facial reanimation procedures including nerve grafting techniques
- 3 – Access surgery for parapharyngeal space and excision of parapharyngeal space tumours
- 3 – Access for resection of recurrent cancer.

Advanced Topic 8: Tumours of Nose and Paranasal Sinuses

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with sinonasal cancer.

Knowledge

- 4 – Anatomy and embryology of the nose and paranasal sinuses and related structures
- 4 – Cross sectional and radiological anatomy of nose, sinuses and surrounding structures
- 4 – Nasal physiology
- 3 – Microbiology of the nose and paranasal sinuses and principles of management of chronic rhinosinusitis
- 3 – Pathology of the nose and paranasal sinuses
- 4 – TNM / AJC TNM Classification of cancers of nose and paranasal sinuses
- 4 – Treatment options for cancer of the nose and paranasal sinuses including non surgical options
- 4 – Notifiable diseases of the nose and sinuses
- 3 – Management of complications including CSF rhinorrhoea, aerocephaly, raised intracranial pressure and intracranial / intraorbital haemorrhage
- 4 – Principles of orbito facial prostheses including implant supported prostheses
- 2 – Principles of preoperative embolization.

Clinical Skills

- 4 – Full history and examination including with patients with difficulties with communication, including rigid nasal endoscopy
- 2 – Ophthalmic examination
- 4 – Preoperative assessment including neurological and mental assessment
- 4 – Staging including use of appropriate special investigations CT/MRI/MRA/angiography
- 2 – Lumbar puncture +/- fluorescein instillation
- 4 – Management of the postoperative patient
- 3 – Osseo integrated abutment placement
- 4 – Demonstrates competence at managing patients in a multidisciplinary setting.

Technical Skills and Procedures

- 4 – Rigid / flexible nasal endoscopy
- 3 – Endoscopic excision of cancers
- 4 – Medial maxillectomy
- 3 – Total maxillectomy
- 2 – Orbital exenteration
- 4 – Le Fort access surgery including midface degloving
- 2 – Rhinectomy (Total and partial)

- 3 – Craniofacial resection techniques including fascial and dermal fat graft harvest
- 3 – Scalp flap rotation and free flap reconstruction after orbito maxillary surgery
- 3 – Obturator manufacture / fitting / aftercare
- 4 – Bone stabilisation using miniplate systems and wiring techniques
- 4 – External carotid artery ligation
- 3 – Sphenopalatine artery ligation (clipping)
- 2 – Maxillary artery clipping.

Advanced Topic 9: Management of the Facial Nerve

Objective

To be competent in the management of facial nerve disorders in patients with HNC.

Knowledge

- 4 – The anatomy and physiology of facial nerve and related structures
- 4 – The aetiology, classification and neuro-physiology of facial paralysis
- 4 – Indications for investigations including radiology, electrophysiology and laboratory tests
- 4 – Facial nerve grading
- 4 – Management of acute and chronic facial nerve palsy
- 4 – Management and prevention of ocular complications
- 4 – Principles of peri-operative facial nerve monitoring
- 2 – Principles of rehabilitation for facial paralysis.

Clinical Skills

History and Examination

- 4 – Obtain appropriate history
- 4 – Clinical examination including assessment of facial nerve function.
- 4 – Otoscopy

Data Interpretation

- 2 – Neuro-physiological tests of inner ear function and facial nerve
- 3 – Interpretation of radiological tests
- 4 – Interpretation of laboratory investigations.

Patient Management

- 4 – Demonstrate communication skills and empathy
- 3 – Understand/appreciate the psychological effects of facial disfigurement
- 4 – Be able to advise the patient of the treatment options, and liaise with other health care professionals
- 3 – Able to investigate and advise patient on prognosis both initially and after a period of time has passed
- 3 – Role of non-surgical management of facial nerve palsy
- 1 – Psychological counselling including CBT.

Technical Skills and Procedures

- 4 – Setup and use of intra-operative facial nerve monitor
- 4 – Able to manage acute problems of facial palsy including eye problems
- 3 – Gold weights
- 3 – Soft tissue surgery including static and active rehabilitation techniques
- 3 – Botox
- 3 – Reinnervation techniques.

Patient/parent/carer management (non-surgical)

Working within the multi-disciplinary team	
Objective	By the end of the fellowship the trainee will be able to work within an MDT; Develop a management plan for a patient with HNC and understand the governance arrangements of MDT working; Understand the patient journey in HNC and be familiar with data management; Demonstrate an ability to participate in high quality research and audit pertaining to HNC.

Knowledge	See Professional Behaviour and Leadership Skills syllabus
Clinical skills	<ul style="list-style-type: none"> 4 Work effectively with other members of an MDT 3 Participate in data entry and analysis 3 Participate actively in audit and research projects 3 Develop and design new audit and research proposals 4 Draw up a management plan for patients with a diagnosis of HNC
Technical skills and procedures	N/A

Patient Management	
Objective	To be competent at diagnosing and assessing patients presenting with symptoms of HNC, and developing a holistic professional relationship with patients and their families.
Knowledge	<ul style="list-style-type: none"> 4 Presentation of HNC 4 Preoperative assessment of patients prior to diagnostic & therapeutic procedures 4 General medical, nutritional and psychological conditions affecting patients with HNC 4 Appropriate investigations and interventions by other healthcare professionals in team, i.e. swallowing & speech assessment, dietetics, dental, CNS and psychological intervention 4 Advanced communication skills. Role of other team members in communication with patients and their families 4 Influence of co-morbidity on prognosis and management 4 TNM staging of HNC 3 Anaesthesia for H&N surgery
Clinical skills	<ul style="list-style-type: none"> 4 Relevant clinical history 4 Full examination, ie oral/dental examination, ear, nose and throat examination, neck, examination of areas of the body acting as donor sites for tissue transfer 4 Demonstrate ability to communicate well with, and appropriately involve other members of the core and extended team 4 Take informed consent for diagnostic & therapeutic procedures 4 Work safely & effectively with the anaesthetist in the management of the shared airway 4 Order and interpret appropriate investigations
Technical skills and procedures	<ul style="list-style-type: none"> 4 Flexible and rigid nasopharyngoscopy 4 Direct laryngoscopy, pharyngoscopy, EPNS, rigid oesophagoscopy 4 Microlaryngoscopy, bronchoscopy 4 FNAC, trucut, nasogastric tube 2 Videostroboscopy techniques 2 FESS 2 PEG placement 2 Ultrasound guided FNA 4 Assessment for flaps (e.g. Allens test, doppler) 3 Endotracheal intubation

Emergency management	
Objective	By the end of the module the trainee will be proficient in managing emergencies in Head & Neck Oncology.
Knowledge	<ul style="list-style-type: none"> 4 Presenting features of airway compromise 4 Flap failure 4 Postoperative complications; haematoma, bleeding, infection, cardio-respiratory complications, airway compromise 4 Acute complications of chemotherapy and radiotherapy
Clinical skills	<ul style="list-style-type: none"> 4 Safe and prompt recognition of emergencies 4 Effective liaison with other professionals, e.g. anaesthetists, intensivists, physicians, oncologists 4 Shared airway management 4 Recognition of flap failure; arterial vs venous compromise 4 Recognition of herald bleed / appropriate management of blow out
Technical skills and procedures	<ul style="list-style-type: none"> 4 Tracheostomy 4 Evacuation of haematoma / control of bleeding 3 Flap rescue

**Head and Neck
Training Interface Group Fellowship
August 2014**

HEAD AND NECK TRAINING INTERFACE GROUP FELLOWSHIP SYLLABUS

August 2014

Overview:

The Training Interface Group (TIG) Fellowship is intended for doctors in Oral and Maxillofacial Surgery, Plastic Surgery and Otolaryngology to gain access to specialist training in Head and Neck Surgical Oncology. It is intended for post-examination trainees near or within their last year of pre-certification training.

The intention is to ensure:

1. Exposure to and skills gained in key topics to the level of expert. These will be a cross-section of experience from the three parent specialties
2. Exposure to and skills gained in two advanced topics to the level of proficiency from a number of areas as agreed by the educational supervisor and trainee at the start of the fellowship. These may cross any of the three parent specialty boundaries
3. The structure of the syllabus will allow the advanced topics to be tailored to the learning requirements of each trainee to ensure the trainee can gain skills and knowledge to the level required for multidisciplinary head and neck team working as a consultant.

Key topics:

1. Airway Management
2. Swallowing and Speech
3. Surgical Skills
4. Wound Care
5. Decision Making and Management Skills for Head and Neck Cancer
6. Management of the Neck.

The trainee would be required to continue to develop their professional and leadership skills by following the generic Professional Behaviour and Leadership Skills (PLS) syllabus as detailed in the ISCP curriculum.

Advanced topics:

1. Tumours of the Larynx
2. Tumours of the Oro and Hypo Pharynx
3. Tumours of the Oral Cavity including Access Procedures
4. Tumours of the Skin of the Head and Neck
5. Reconstruction in Head and Neck Oncology
6. Thyroid Disease
7. Salivary Gland Disease
8. Tumours of the Nose and Paranasal Sinuses
9. Management of the Facial Nerve.

The knowledge and skills standards are those applied for all pre-certification trainees.

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

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

Standards for clinical and technical skills

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.

Key Topic 1: Airway Management in Adults

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with upper airway disorders in adults.

Knowledge

- 4 – Demonstrate a detailed knowledge of the anatomy and physiology of the upper aerodigestive tract, both anatomical and as seen through cross sectional imaging
- 4 – Understand the microbiology and pathology of disorders of the upper aerodigestive tract
- 4 – Understand the principles of the management of patients with airway obstruction
- 4 – Know the different methods of securing an airway safely (surgical and non-surgical) in an elective and emergency setting
- 3 – Understand the indications and techniques for surgical debulking of upper airway malignancies
- 4 – Know the different options for surgical and non-surgical management of upper airway obstruction including the evidence for the different options.

Clinical Skills

- 4 – Be able to elicit an appropriate clinical history and correctly interpret physical signs
- 4 – Be aware of the role of appropriate investigations in the management of airway obstruction
- 4 – Demonstrate the ability to work effectively with anaesthetists and those involved in critical care who manage the 'shared airway'
- 4 – Demonstrate expertise in the safe assessment of patients with critical airways
- 4 – Can demonstrate expertise in managing an emergency due to airway obstruction including leadership of teams managing such emergencies.

Technical Skills and Procedures

- 4 – Be competent at performing the following diagnostic procedures; fiberoptic nasopharyngoscopy, microlaryngoscopy, pharyngo oesophagoscopy
- 3 – Be competent at performing endotracheal intubation

- 4 – Be proficient at performing a surgical tracheostomy in the elective and emergency setting both under general and local anaesthesia
- 2 – Be competent at straightforward debulking procedures and percutaneous tracheostomy.

Key topic 2: Swallowing, Speech and Nutrition

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with speech and swallowing disorders.

Knowledge

- 4 – Know the anatomy of the upper aerodigestive tract
- 4 – Physiology of swallowing
- 4 – Know the anatomy of the larynx, tongue, palate and upper airway and the production of speech, including neuroanatomy
- 4 – Know the various hypotheses and mechanisms relating to the aetiology of dysphagia
- 4 – Understand the investigation and imaging of a patient with dysphagia
- 4 – Understand the pathophysiology of aspiration, its complications and its management
- 4 – Understand the causes of speech abnormality and their anatomical associations
- 3 – Know investigations for speech and swallowing pathology
- 3 – Know the treatment options for surgical voice restoration post laryngectomy
- 4 – Understand the principles and importance of nutrition relevant to head and neck cancer.

Clinical Skills

- 4 – Can elicit a targeted history and examination of a patient with speech and swallowing dysfunction, including flexible nasendoscopy
- 4 – Works effectively with speech and language therapists in the assessment and management of patients with speech and swallowing disorders
- 4 – Able to manage aspiration
- 4 – Able to manage patients with non-oral enteral feeding
- 2 – Use and interpretation of quantitative and qualitative investigations of speech and swallowing e.g. VHI, GRBAS, FEES
- 3 – Change of tracheo oesophageal valve.

Technical Skills and Procedures

- 4 – Be competent at inserting nasogastric tubes under local and general anaesthesia
- 4 – Be competent at performing the following diagnostic procedures; fiberoptic nasopharyngoscopy, microlaryngoscopy, pharyngo oesophagoscopy
- 4 – Oesophageal dilatation
- 2 – Cricopharyngeal myotomy (including use of Botox)
- 2 – Vocal cord medialisation procedures
- 2 – Tracheo oesophageal puncture
- 1 – PEG insertion.

Key topic 3: Surgical Skills

Objective

To be competent in the essential surgical skills needed for head and neck surgical oncology.

Knowledge

- 4 – Understanding of different techniques for excision of head and neck cancer
- 4 – Understanding of techniques for nerve preservation during surgery
- 4 – Understanding of the techniques and options for use of different wound closure materials and techniques
- 4 – Understanding of techniques of local and distant flap closure (local, pedicled and free flaps)
- 4 – Design of free flaps
- 3 – Applied anatomy and physiology of free flap surgery

- 4 – Knowledge of the use of lasers in the head and neck including laser safety
- 4 – Knowledge of the indications for robotic surgery in head and neck oncology
- 4 – Use of the harmonic scalpel
- 4 – Physiology of and indications for photodynamic therapy.

Clinical Skills

- 4 – Demonstrate joint working with surgical colleagues in planning and executing surgical procedures where appropriate
- 4 – Have attained appropriate mandatory safety training in use of lasers.

Technical Skills and Procedures

- 4 – Safe use of KTP and CO2 laser
- 4 – Split skin and full thickness skin grafts
- 3 – Axial and random pattern local flaps
- 3 – Raising of Pectoralis Major flap
- 2 – Raising of a comprehensive range of free flaps, for example: radial forearm, ALT, Rectus abdominis, DCIA, scapular etc.
- 1 – Microvascular anastomosis
- 2 – Neural anastomosis.

Key topic 4: Wound Care and Implantology

Objective

To be competent in managing patients requiring implant surgery and complex wound care. This module gives some indication of the breadth and depth of knowledge and surgical skills required. The list should not be considered to be fully inclusive or exhaustive.

Knowledge

- 4 – Applied anatomy, physiology and pathology of wound healing
- 4 – To have a full understanding of the principles of surgical closure of wounds
- 4 – To have a full awareness of risks of infection and mechanisms for reducing the risk of infection including relevant prophylaxis
- 4 – To understand the indications for wound closure by primary and secondary intention and use of tissue transfer
- 4 – Tissue expansion techniques
- 3 – Knowledge of types of tissue fillers and their indications
- 4 – Management of complicated wounds including revision surgery
- 3 – Camouflage techniques
- 3 – Use of intra and extra oral prostheses
- 3 – Types of and indications for implantation technology.

Clinical Skills

- 4 – Demonstrate the ability to manage the common wound complications of head and neck surgery including fistula management and chyle leakage
- 4 – Non surgical management of wounds
- 4 – Demonstrates competence in management of surgical wounds including appropriate patient counselling
- 1 – Use of camouflage techniques
- 2 – Management of intra and extra oral implants.

Technical Skills and Procedures

- 4 – Wound closure using primary and secondary intention
- 4 – Skin grafts
- 1 – Tissue expansion techniques and dermal fillers
- 1 – Intra and extra oral implantation.

Key Topic 5: Decision Making, Management Skills and MDT Working in Head and Neck Oncology

Objective

To be competent in the Multidisciplinary management of patients with HNC.

Knowledge

- 4 – Understanding of treatment modalities available, both surgical and non-surgical
- 4 – Understanding of management of pain in the acute and chronic situation
- 4 – Understanding of palliative care for patients with specific reference to head and neck cancer
- 4 – Knowledge of Quality Framework for Management of HNC in England and devolved nations
- 4 – Core and extended MDT members and their role
- 4 – Understands the principles of research applied to Head and Neck Cancer
- 4 – Audit and data collection (DAHNO)
- 4 – Qualitative and quantitative research methods in HNC including NIHR portfolio
- 4 – Survivorship and role of patient representative groups.

Clinical Skills

- 4 – Demonstrates full participation in and leadership of MDT
- 4 – Demonstrates ability to discuss surgical and non surgical management options with patients and their families and record outcome of discussions
- 4 – Effective and targeted pretreatment management of patients
- 4 – Management of acute and chronic complications of treatment
- 4 – Conducts at least one relevant audit
- 4 – Involvement in relevant research
- 1 – Psychological management including CBT techniques
- 1 – Radiotherapy planning
- 4 – Becomes actively involved in service improvement projects.

Key Topic 6: Management of the Neck**Objective**

To demonstrate competence in the management of metastatic neck disease.

Knowledge

- 4 – Anatomy of the neck
- 4 – Pattern of spread of neoplasms in the head and neck including for squamous carcinoma, salivary gland carcinoma, thyroid cancer, skin cancer
- 4 – Understands the concept and management of carcinoma of occult primary (CUP)
- 4 – UICC/AJC staging of metastatic neck disease
- 4 – Classification of neck dissections
- 4 – Imaging techniques
- 4 – Cytopathological investigations
- 4 – Understanding of the management of complications including shoulder dysfunction
- 4 – Evidence based options for treatment of metastatic neck disease including non-surgical management
- 4 – Indications for different neck dissections
- 4 – Relevance of co morbidity.

Clinical Skills

- 4 – Assessment of patient for neck dissection and appropriate preoperative counselling
- 4 – Peri and postoperative management
- 4 – Use and interpretation of investigations
- 4 – Multi disciplinary teamwork
- 3 – Management of recurrent neck disease
- 4 – Management of complications of neck dissection.

Technical Skills and Procedures

- 4 – Lymph node biopsy

- 4 – Selective neck dissection
- 4 – Modified radical neck dissection
- 4 – Radical neck dissection
- 3 – Extended radical neck dissection
- 2 – Free flap repair of skin defect
- 3 – Carotid artery ligation.

Advanced Topic 1: Tumours of the Larynx

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with laryngeal cancer.

Knowledge

- 4 – Anatomy and embryology of the larynx
- 4 – Physiology of speech and swallowing
- 4 – Pathological conditions affecting the larynx including non-squamous neoplastic conditions
- 4 – Epidemiology and aetiology of laryngeal cancer
- 4 – Presentation of laryngeal cancer
- 4 – Treatment options for laryngeal cancer including organ preservation strategies and side effects of treatment
- 4 – Rehabilitation of speech and voice disorders following treatment of laryngeal cancer
- 3 – Complications of surgery for laryngeal cancer
- 3 – Molecular biology of laryngeal cancer
- 4 – UICC / AJC TNM staging of laryngeal/neck cancer.

Clinical Skills

- 4 – Full history and examination including in patients with difficulties with communication
- 4 – Flexible nasopharyngoscopy
- 4 – Preoperative assessment / management of co-morbid disease
- 4 – Staging including use of appropriate special investigations
- 3 – Assessment of speech and swallowing
- 3 – Videolaryngoscopy / FEES
- 4 – Management of the postoperative patient
- 4 – Management of tracheo-oesophageal valves
- 4 – Management of complications following laryngeal surgery including pharyngocutaneous fistulae.

Technical Skills and Procedures

- 4 – Microlaryngoscopy with documentation
- 4 – Transoral endoscopic resection of laryngeal tumours
- 3 – Partial laryngeal resections (hemilaryngectomy, near total laryngectomy)
- 4 – Total laryngectomy
- 3 – Surgical voice restoration
- 4 – Tracheostomy (open/percutaneous)
- 3 – Vocal cord medialisation procedures
- 1 – Robotic Surgery.

Advanced Topic 2: Tumours of the Oro and Hypopharynx

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with oro and hypopharyngeal cancer.

Knowledge

- 4 – Anatomy and embryology of the Pharynx
- 4 – Physiology of swallowing

- 4 – Pathological conditions affecting the Pharynx including non-squamous neoplastic conditions
- 4 – Epidemiology and aetiology of Pharyngeal cancer including HPV and its implications for management and prognosis
- 4 – Presentation of Pharyngeal cancer
- 4 – Treatment options for Pharyngeal cancer including Organ preservation strategies and side effects of therapy
- 3 – Molecular biology of Pharyngeal cancer
- 4 – Complications of surgery for the oropharynx and hypopharynx
- 4 – UICC/AJC TNM staging of Pharyngeal/neck cancer.

Clinical Skills

- 4 – Full history and examination including in patients with difficulties with communication
- 4 – Flexible nasopharyngoscopy
- 4 – Preoperative assessment / management of co-morbid disease
- 4 – Staging including use of appropriate special investigations
- 3 – Assessment of speech and swallowing
- 3 – Videolaryngoscopy / FEES
- 4 – Management of the postoperative patient
- 4 – Management of complications
- 4 – Management of tracheo-oesophageal valves.

Technical Skills and Procedures

- 4 – Panendoscopy including tonsillectomy / rigid and flexible oesophagoscopy
- 4 – Transoral endoscopic laser resection of Pharyngeal tumours
- 4 – Partial Pharyngeal resections and access surgery
- 4 – Total Pharyngolaryngectomy
- 3 – Reconstruction with local flaps, free vascularised flaps or gastric transposition
- 4 – Tracheostomy (open/percutaneous)
- 2 – Placement of gastrostomy feeding tubes
- 4 – Neck dissection
- 1 – Robotic surgery.

Advanced Topic 3: Tumours of the Oral Cavity

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with oral cancer.

Knowledge

- 4 – Aetiology of benign tumours of the oral cavity and teeth
- 4 – Aetiology, epidemiology, pathology, natural history of neoplasms of the oral cavity and contiguous structures including metastatic disease
- 4 – Treatment options in the management of oral cancer including organ preservation strategies and management of complications including osteoradionecrosis
- 4 – Principles of management of benign aggressive tumours of the jaws including Ameloblastoma
- 4 – Differential diagnosis and management of leukoplakic / erythroleukoplakic lesions of the oral cavity
- 4 – Surgical anatomy of the oral cavity and contiguous structures
- 4 – UICC/AJC TNM Staging classification of oral malignancies
- 4 – Physiology of swallowing
- 4 – Principles of reconstructive surgery of the oral cavity
- 4 – Pathophysiology, Diagnosis and management of osteoradionecrosis
- 4 – Complications following surgery for oral cavity cancer.

Clinical Skills

- 4 – Full history and examination including patients with difficulties with communication
- 4 – Preoperative assessment / management of co-morbid disease

- 4 – The appropriate use of investigations including imaging, examination and biopsy to stage the disease
- 4 – The appropriate use of surgical access routes to tumour sites within the oral cavity and adjacent structures
- 4 – The appropriate mode of tumour excision (including laser) compatible with safe margins of excision and maximising preservation of function
- 4 – The appropriate use of reconstructive techniques to maximise function including post-operative care of flaps
- 4 – Appropriate pre-treatment assessment of oral hygiene/health and appropriate pre-emptive management thereof
- 4 – Management of complications including oro-cutaneous fistulae.

Technical skills and procedures

- 4 – Dental extractions
- 4 – Partial glossectomy (including Use of laser)
- 4 – Mandibular split, lip split and mandibulotomy
- 2 – Mid facial degloving and mid facial osteotomies
- 4 – Tumour excision; floor of mouth, buccal, hard palate including use of laser
- 3 – Reconstructive surgery; appropriate selection of free/myocutaneous/local flaps
- 4 – Correct use of different types of laser
- 2 – Late dental re-habilitation and other facial prostheses.

Advanced Topic 4: Tumours of the Skin

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with skin cancer of the head and neck.

Knowledge

- 4 – Anatomy and embryology of the skin of the face, neck and ears
- 4 – Pathological conditions affecting the skin including non-squamous neoplastic conditions
- 4 – Epidemiology and aetiology of skin cancer
- 4 – Management of skin cancer
- 4 – Understanding of Mohs surgical techniques
- 4 – UICC/AJC TNM staging of skin cancer.

Clinical Skills

- 4 – Full history and examination including in patients with difficulties with communication
- 4 – Preoperative assessment / management of co-morbid disease
- 4 – Staging including use of appropriate special investigations
- 4 – Management of the postoperative patient
- 4 – Management of complications
- 4 – Management of patients within a multidisciplinary setting.

Technical Skills and Procedures

- 4 – Excision of skin tumours
- 4 – Split and full thickness skin grafts
- 3 – Local and regional flaps for reconstruction
- 2 – Mohs micrographic surgery
- 3 – Use of pedicled and/ or free flaps for reconstruction
- 4 – Neck dissection
- 3 – Sentinel lymph node biopsy.

Advanced Topic 5: Reconstruction in the Head and Neck

Objective

To demonstrate competence in complex reconstruction in head and neck surgical oncology.

Knowledge

- 4 – Applied anatomy of anatomical regions of donor sites for free and pedicled flaps
- 4 – Microvascular anatomy
- 4 – Applied physiology of free tissue transfer
- 4 – Indications for free tissue transfer, pedicled and local axial/ random pattern flaps
- 4 – Understanding of influence of comorbidity on tissue transfer
- 4 – Preoperative assessment techniques with respect to tissue transfer including special investigations
- 4 – Understanding of principles of bony reconstruction
- 4 – Understanding of principles of neural reconstruction.

Clinical Skills

- 4 – Targeted history and examination
- 4 – Demonstrates competence in preoperative counselling of patient undergoing tissue transfer with explanation of different options for reconstruction
- 4 – Demonstrates appropriate use and interpretation of relevant special investigations
- 4 – Competent peri and postoperative management of a patient undergoing tissue transfer
- 4 – Demonstrates effective multidisciplinary working with other surgeons, anaesthetists and intensivists
- 4 – Management of complications including orocutaneous and pharyngocutaneous fistula.

Technical Skills and Procedures

- 4 – Split and full thickness skin grafts
- 4 – Neural anastomosis
- 3 – Microvascular anastomosis (vein and artery)
- 4 – Pectoralis Major flap
- 2 – Salvage surgery of failed free flaps
- 4 – Bony reconstruction with plating systems
- 3 – Free fasciocutaneous flaps
- 3 – Free myocutaneous flaps
- 3 – Free osseocutaneous flaps
- 3 – Free osseomyocutaneous flaps.

Advanced Topic 6: Disease of the Thyroid gland and Parathyroid Glands

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with thyroid cancer.

Knowledge

- 4 – Anatomy and embryology of the thyroid / parathyroid glands
- 4 – Thyroid / parathyroid pathology / immunology
- 4 – TNM / AJC TNM Classification of thyroid cancer
- 4 – Presentation of thyroid / parathyroid / cancer
- 4 – Investigation and evaluation of thyroid and parathyroid disorders
- 4 – Treatment options including non-surgical options
- 4 – Principles of post-operative management and monitoring (TSH suppression, Tg and Calcium monitoring)
- 4 – Cytological Grading (Thy1 - 5 grading) of FNA samples
- 4 – Appropriate knowledge of current British Thyroid Association Guidelines for management of thyroid masses
- 3 – Management of medullary cell ca / multiple endocrine neoplasia.

Clinical Skills

- 4 – Full history and examination including with patients with difficulties with communication
- 4 – Assessment of thyroid status
- 4 – FNA / microtrephine techniques including U/S guided sampling
- 4 – Preoperative assessment including airway assessment and vocal cord check

- 4 – Staging including use of appropriate special investigations
- 4 – Management of the postoperative patient
- 4 – Management of complications including injury to recurrent laryngeal nerve, airway management and hypocalcaemia.

Technical Skills and Procedures

- 4 – FNAC and core biopsy with and without ultrasound guidance
- 4 – Partial thyroidectomy
- 4 – Total thyroidectomy
- 4 – Parathyroidectomy
- 4 – Neck dissection including central nodes
- 3 – Mediastinal exploration including sternotomy and lateral thoracotomy.

Advanced Topic 7: Salivary Gland Cancer

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with salivary gland cancer.

Knowledge

- 4 – Anatomy and embryology of major and minor salivary glands including Vth, VIIth–XIIth, cranial nerves
- 4 – Salivary gland physiology
- 4 – Salivary gland pathology
- 4 – Epidemiology and aetiology of salivary gland cancer
- 4 – Presentation of salivary gland cancer
- 4 – Investigations and evaluation of salivary gland disease
- 4 – Principles of treatment of patients with salivary gland cancer
- 4 – UICC / AJC TNM staging of nasopharyngeal cancer
- 4 – Complications of surgery for salivary gland disease.

Clinical Skills

- 4 – Full history and examination of salivary glands and associated cranial nerves
- 4 – Preoperative assessment including co-morbidities and dentition
- 4 – Use of appropriate pre-operative investigations
- 4 – Staging including use of appropriate special investigations and panendoscopy / EUA
- 4 – Management of the postoperative patient and complications specific to salivary gland surgery including facial nerve injury, Freys syndrome and post-operative haematoma
- 4 – Demonstrates ability to manage patients within a multidisciplinary setting.

Technical Skills and Procedures

- 4 – FNAC / incisional biopsy of oral lesions
- 4 – Set up and use of intraoperative facial nerve monitor
- 4 – Submandibular gland excision
- 3 – Extracapsular dissection parotidectomy
- 4 – Superficial parotidectomy
- 4 – Total (conservative and radical) parotidectomy
- 4 – Extended parotidectomy with neck dissection and flap reconstruction
- 4 – Minor salivary gland excision
- 3 – Facial reanimation procedures including nerve grafting techniques
- 3 – Access surgery for parapharyngeal space and excision of parapharyngeal space tumours
- 3 – Access for resection of recurrent cancer.

Advanced Topic 8: Tumours of Nose and Paranasal Sinuses

Objective

To understand the aetiology, presenting signs, symptoms and management of patients presenting with sinonasal cancer.

Knowledge

- 4 – Anatomy and embryology of the nose and paranasal sinuses and related structures
- 4 – Cross sectional and radiological anatomy of nose, sinuses and surrounding structures
- 4 – Nasal physiology
- 3 – Microbiology of the nose and paranasal sinuses and principles of management of chronic rhinosinusitis
- 3 – Pathology of the nose and paranasal sinuses
- 4 – TNM/AJC TNM Classification of cancers of nose and paranasal sinuses
- 4 – Treatment options for cancer of the nose and paranasal sinuses including non-surgical options
- 4 – Notifiable diseases of the nose and sinuses
- 3 – Management of complications including CSF rhinorrhoea, aerocephaly, raised intracranial pressure and intracranial/intraorbital haemorrhage
- 4 – Principles of orbito facial prostheses including implant supported prostheses
- 2 – Principles of preoperative embolization.

Clinical Skills

- 4 – Full history and examination including with patients with difficulties with communication, including rigid nasal endoscopy
- 2 – Ophthalmic examination
- 4 – Preoperative assessment including neurological and mental assessment
- 4 – Staging including use of appropriate special investigations CT/MRI/MRA/angiography
- 2 – Lumbar puncture +/- fluorescein instillation
- 4 – Management of the postoperative patient
- 3 – Osseo integrated abutment placement
- 4 – Demonstrates competence at managing patients in a multidisciplinary setting.

Technical Skills and Procedures

- 4 – Rigid / flexible nasal endoscopy
- 3 – Endoscopic excision of cancers
- 4 – Medial maxillectomy
- 3 – Total maxillectomy
- 2 – Orbital exenteration
- 4 – Le Fort access surgery including midface degloving
- 2 – Rhinectomy (Total and partial)
- 3 – Craniofacial resection techniques including fascial and dermal fat graft harvest
- 3 – Scalp flap rotation and free flap reconstruction after orbito maxillary surgery
- 3 – Obturator manufacture / fitting / aftercare
- 4 – Bone stabilisation using miniplate systems and wiring techniques
- 4 – External carotid artery ligation
- 3 – Sphenopalatine artery ligation (clipping)
- 2 – Maxillary artery clipping.

Advanced Topic 9: Management of the Facial Nerve**Objective**

To be competent in the management of facial nerve disorders in patients with HNC.

Knowledge

- 4 – The anatomy and physiology of facial nerve and related structures
- 4 – The aetiology, classification and neuro-physiology of facial paralysis
- 4 – Indications for investigations including radiology, electrophysiology and laboratory tests
- 4 – Facial nerve grading
- 4 – Management of acute and chronic facial nerve palsy
- 4 – Management and prevention of ocular complications
- 4 – Principles of peri-operative facial nerve monitoring
- 2 – Principles of rehabilitation for facial paralysis.

Clinical Skills

History and Examination

- 4 – Obtain appropriate history
- 4 – Clinical examination including assessment of facial nerve function
- 4 – Otoscopy.

Data Interpretation

- 2 – Neuro-physiological tests of inner ear function and facial nerve
- 3 – Interpretation of radiological tests
- 4 – Interpretation of laboratory investigations.

Patient Management

- 4 – Demonstrate communication skills and empathy
- 3 – Understand/appreciate the psychological effects of facial disfigurement
- 4 – Be able to advise the patient of the treatment options, and liaise with other health care professionals
- 3 – Able to investigate and advise patient on prognosis both initially and after a period of time has passed
- 3 – Role of non-surgical management of facial nerve palsy
- 1 – Psychological counselling including CBT.

Technical Skills and Procedures

- 4 – Setup and use of intra-operative facial nerve monitor
- 4 – Able to manage acute problems of facial palsy including eye problems
- 3 – Gold weights
- 3 – Soft tissue surgery including static and active rehabilitation techniques
- 3 – Botox
- 3 – Reinnervation techniques.

Professional Behaviour and 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</p>	Area 4.1	Mini CEX, CBD, Mini PAT, MRCS and Specialty FRCS	<p>Strongly recommended Patient safety</p> <p>Desirable: Human factors</p>

	<p>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 organisation of care ○ 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 			

	<ul style="list-style-type: none"> • 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 litigation • 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 	<p>Area 4.1</p>		
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	<ul style="list-style-type: none"> • 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 			
<p>Skills</p>	<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 • 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 			

	<p>with the patient, carers and other members of the clinical team and communicate this effectively to the patient, parents and carers where relevant</p> <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, to encourage improvement in practice of individual and unit • 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 	<p>Area 4.1</p>		
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	<p>within patients being cared for</p> <ul style="list-style-type: none"> • 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 			
Behaviour	<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 			

	<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>	Area 4.1		

	<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 <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 			

	<p>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> <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 • 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 	Area 4.1		
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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
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) 	N/A		

	<ul style="list-style-type: none"> • Communication with colleagues (GMP Domains: 1, 3) 			
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: <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 			
<p>Skills</p>	<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 of 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 			

	<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 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
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 			

	<p>promote reflection</p> <ul style="list-style-type: none"> • 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 • 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			
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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
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 relate to medical practise • 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>	Mini PAT, CBD, Portfolio assessment at ARCP, MRCS and specialty FRCS	
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 			

	<p>together with their roles and limitations</p> <ul style="list-style-type: none"> • 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 	Area 1.3		
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 	Area 1.3 Area 1.3		
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, responding to evidence based medicine while recognising the occasional need to practise outside clinical guidelines • Recognise the need for audit in clinical practice to promote standard setting and quality assurance • To be prepared to accept responsibility • Show commitment to continuing professional development 	Area 1.3 Area 1.3		
Examples and descriptors for Core Surgical	<ul style="list-style-type: none"> • Defines ethical research and demonstrates awareness of GMC guidelines • Differentiates audit and research and understands the different types of research 			

Training	approach e.g. qualitative and quantitative <ul style="list-style-type: none"> • Knows how to use literature databases • Demonstrates good presentation and writing skills • Participates in departmental or other local journal club • Critically reviews an article to identify the level of evidence • Attends departmental audit meetings • Contributes data to a local or national audit • Identifies a problem and develops standards for a local audit • Describes the audit cycle and take an audit through the first steps • Seeks feedback on performance from clinical supervisor/mentor/patients/carers/service users 	Area 1.3		
Examples and descriptors for CCT	<ul style="list-style-type: none"> • Demonstrates critical appraisal skills in relation to the published literature • Demonstrates ability to apply for appropriate ethical research approval • Demonstrates knowledge of research organisation and funding sources • Demonstrates ability to write a scientific paper • Leads in a departmental or other local journal club • Contributes to the development of local or national clinical guidelines or protocols • Organise or lead a departmental audit meeting • Lead a complete clinical audit cycle including development of conclusions, the changes needed for improvement, implementation of findings and re-audit to assess the effectiveness of the changes • Seeks opportunity to visit other departments and learn from other professionals 	Area 1.3 Area 1.3		

	Professional Behaviour and Leadership	Mapping to Leadership Curriculum	Assessment technique	Areas in which simulation should be used to develop relevant skills
Sub-category:	Manager including			

	<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 	<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>Desirable: Patient safety Human factors</p>

	<p>corrective action where necessary</p> <p>Principles of quality and safety improvement</p> <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 	Area 3	<p>Mini PAT, CBD and Portfolio assessment during ARCP</p> <p>Mini PAT, CBD and Portfolio assessment during ARCP</p>	
Knowledge	<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 	<p>Areas 1.1 and 1.2</p> <p>Area 2</p>		

	<p>information and evidence</p> <ul style="list-style-type: none"> • 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 			
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 following hospital discharge <p>Leadership</p> <ul style="list-style-type: none"> • Demonstrate compliance with national guidelines that influence healthcare provision • Articulate strategic ideas and use effective influencing skills • Understand issues and potential solutions before acting • Appreciate the importance of involving the public and communities in developing 	<p>Area 1.1 and 1.2</p> <p>Area 2</p> <p>Area 5</p>		

	<p>health services</p> <ul style="list-style-type: none"> • Participate in decision making processes beyond the immediate clinical care setting • Demonstrate commitment to implementing proven improvements in clinical practice and services • Obtain the evidence base before declaring effectiveness of changes <p>Quality and safety improvement</p> <ul style="list-style-type: none"> • Participate in safety improvement strategies such as critical incident reporting • Develop reflection in order to achieve insight into own professional practice • Demonstrates personal commitment to improve own performance in the light of feedback and assessment • Engage with an open no blame culture • Respond positively to outcomes of audit and quality improvement • Co-operate with changes necessary to improve service quality and safety <p>Management and NHS Structures</p> <ul style="list-style-type: none"> • Recognise the importance of equitable allocation of healthcare resources and of commissioning • Recognise the role of doctors as active participants in healthcare systems • Respond appropriately to health service objectives and targets and take part in the development of services • Recognise the role of patients and carers as active participants in healthcare systems and service planning • Show willingness to improve managerial skills (e.g. management courses) and engage in management of the service 	<p>Area 4.2, 4.3, 4.4</p> <p>Area 3</p>		
<p>Examples and descriptors for Core Surgical Training</p>	<p>Self awareness and self management</p> <ul style="list-style-type: none"> • Obtains 360° feedback as part of an assessment • Participates in peer learning and explores leadership styles and preferences • Timely completion of written clinical notes • Through feedback discusses and reflects on how a personally emotional situation affected communication with another person • Learns from a session on time management <p>Team working</p> <ul style="list-style-type: none"> • Works well within the multidisciplinary team and recognises when assistance is required from the relevant team member • Invites and encourages feedback from patients 	<p>Area 1.1 and 1.2</p> <p>Area 2</p>		

	<ul style="list-style-type: none"> Discusses funding allocation processes from central government in outline and how that might impact on the local health organisation 			
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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
Sub-category:	Promoting good health (GMP Domains: 1, 2, 3)			
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 			

	<p>assistance</p> <ul style="list-style-type: none"> • 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 Training	<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 understanding of their condition and how they can be involved in self management • 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.			
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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
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 	Area 1.4		

	<ul style="list-style-type: none"> • 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 • 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, 	<p>Area 1.4</p> <p>Area 1.4</p>		

	<p>the Police or the proper officer of the local authority in relevant circumstances</p> <ul style="list-style-type: none"> • 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 			
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 • 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 	<p>Area 1.4</p> <p>Area 1.4</p> <p>Area 1.4</p>		

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		
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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.

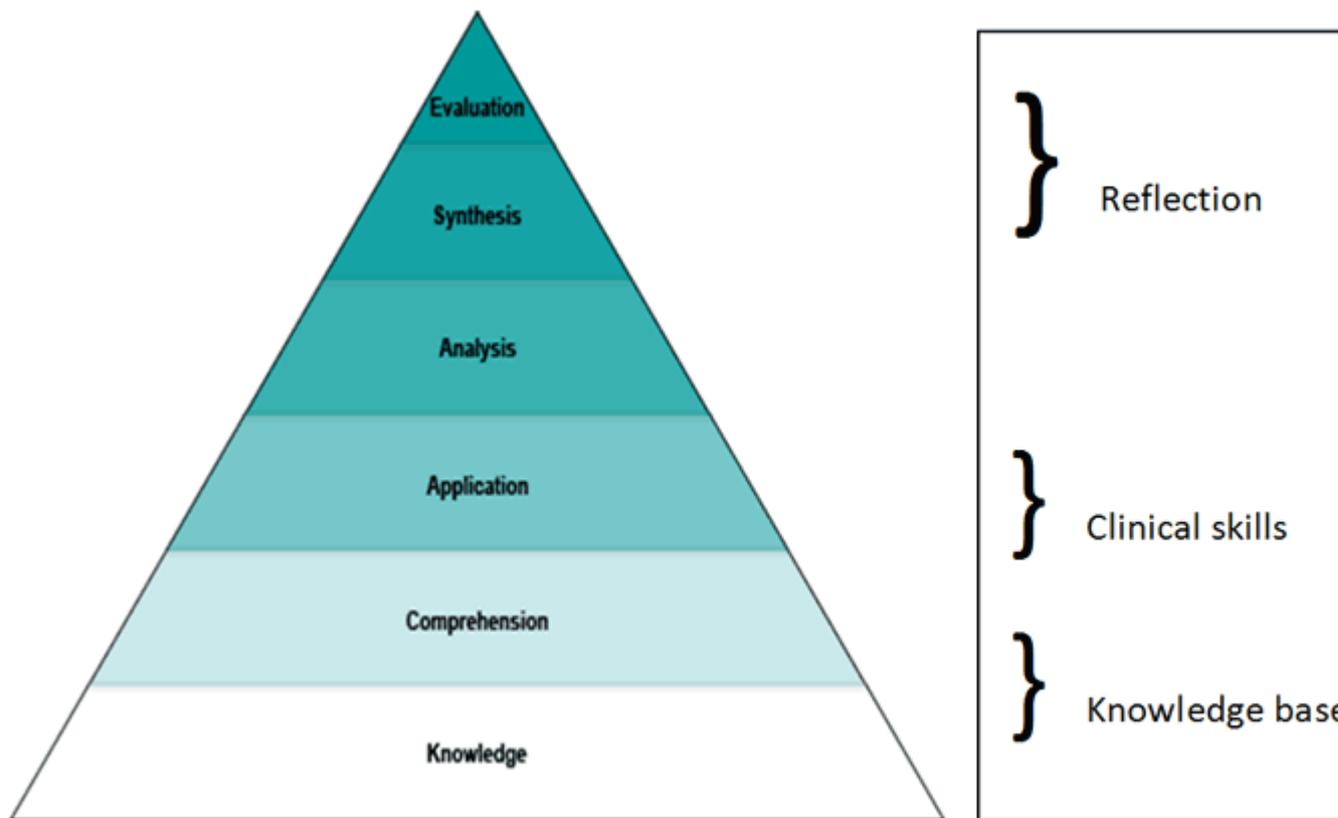
2. Discussion tools

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.

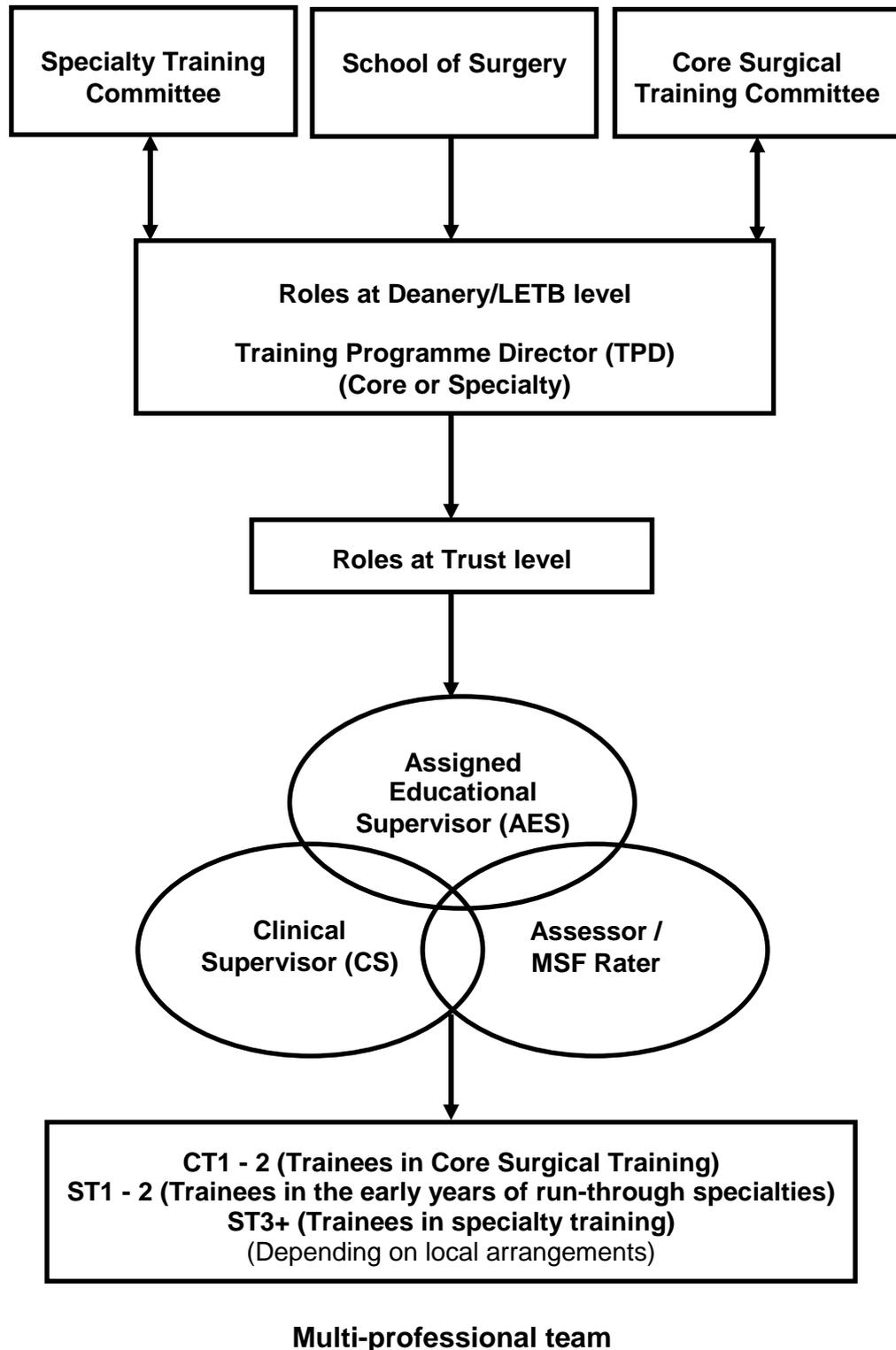
It may be entirely appropriate for a surgeon involved in training to hold more than one role (e.g. Assigned Educational Supervisor, Clinical Supervisor and Assessor) where the workload is manageable and the trainee continues to receive training input from several sources. The role of assessor is not 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 specialty 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.

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 breast 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	
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
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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
Microdochoectomy	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 targetted 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

Major Trauma Surgery Training Interface Group Fellowship Curriculum 2018

Syllabus for a Training Interface Fellowship in Trauma Surgery

The intention of this syllabus is to train trainees in trauma surgery to the level required by Major Trauma Centres. This syllabus draws on and uses text from:

- 1) Trauma Systems in England – A Strategy for Major Trauma Workforce Generation and Sustainability. Royal College of Surgeons of England Briefing Note. March 2014. Tai N, Bircher M.
- 2) Major Trauma Workforce Sustainability – Outcomes of the Royal College of Surgeons of England Major Trauma Workgroup
- 3) Scoping Document – Establishment of Formal Trauma Training Pathway within a General Surgical Training Programme. February 2016. Tai N, Brooks A.

Objective

To provide a syllabus for trainees appointed to a 12-month Training Interface Fellowship post in Trauma Surgery. The syllabus will be an optional component within the parent curricula of General Surgery, Vascular Surgery, Trauma and Orthopaedic Surgery, Oral and Maxillofacial Surgery and Plastic Surgery. It is written to allow trainees to follow one of two pathways:

- a) The Resuscitative Surgeon – responsible for immediate life saving surgery in major trauma
- b) The Major Trauma Consultant – responsible for delivering and co-ordinating on-going patient care.

Background

Trauma care has evolved, or is evolving, into the creation of a series of networks across the four nations of the UK. Each network has a Major Trauma Centre to which all severely injured patients are brought for emergency treatment and for initial recovery. The Major Trauma Centres are supported by Major Trauma Units within which patients with lesser degrees of injury may receive their emergency and ongoing treatment. Major Trauma Units may also receive patients from the Major Trauma Centre for ongoing care and rehabilitation once active medical issues have been resolved. Protocols are in place to guide close working relationships between Major Trauma Centres and Major Trauma Units and to foster Continuing Professional Development within trauma care for all grades of staff.

Trauma care comprises four stages:

- 1) Immediate
 - Life support and identification of location and extent of injury
 - Follows the Advanced Trauma Life Support (ATLS) process
 - Provided at the scene of injury and in the Emergency Department
- 2) Resuscitative Surgery
 - The surgery that is required to control haemorrhage and remove and/or control sources of infection
- 3) Continued Care and Co-ordination of Specialty Treatment (recovery and reconstruction)
 - Overlaps with and then takes over from the Immediate Care Team Leader
 - Continues through the Resuscitative Surgery stage and recovery from that until the patient enters the Rehabilitation stage
 - Requires identification of all medical problems; management and/or referral for specialty management
 - Co-ordinates all inter-specialty treatment ensuring the correct treatments are given at the correct time
- 4) Rehabilitation
 - Overlaps with the recovery phase and continues after all active medical issues are resolved until the patient has made as much physical and psychological progress as is possible towards restoration of their pre-injury lifestyle.

Immediate Care (stage 1) is included in the curricula for all surgical specialties through the need to meet learning outcomes similar to those of the ATLS course.

Rehabilitation care (stage 4), for the large part, lies outside the remit of surgical care.

This syllabus aims to set the requirements to train surgeons in **Resuscitative Surgery** (stage 2) and in being the **Major Trauma Consultant** responsible for ongoing active medical treatment and the co-ordination of specialty care (stage 3).

Certain aspects of these two roles are already included in surgical curricula, but the evolution of Major Trauma Centres now requires a steady flow of trainees with a special interest in major trauma and with skills beyond those taught within the existing curricula.

Specific Aims

The one-year fellowship training posts will train trainees, in the first instance, from General Surgery, Vascular Surgery, Trauma and Orthopaedic Surgery, Oral and Maxillofacial Surgery or Plastic Surgery in the skills required to be a Resuscitative Surgeon or a Major Trauma Consultant.

Relative workforce requirements for Resuscitative Surgeons and Major Trauma Consultants will vary year by year. The number of Fellowship posts available in each of these two streams will be made clear during each annual advertisement, recruitment and selection process. The Person Specifications will include the detailed requirements for each training pathway within this syllabus. Those wishing to be considered for a Fellowship focussing on Resuscitative Surgery will need the operative and non-operative skills necessary to carry out emergency laparotomy to the level required for Certification and so will generally be General Surgery trainees. Those wishing to be considered for a Fellowship focussing on the Major Trauma Consultant stream could be training in any of the above named surgical specialties.

The Trauma TIG Training Programme Director will determine which trainees follow the Resuscitative Surgeon pathway and which the Major Trauma Consultant pathway. This decision will take account of workforce requirements and the skills and experience individual trainees have previously acquired in their specialty training.

The syllabus is competence based. Successful completion of the Fellowship will require the trainee to meet the requirements for either a Resuscitative Surgeon or a Major Trauma Consultant. Should a trainee achieve the required competences in one component and then wish to gain skills in the other, then this will be possible if supported by the Assigned Educational Supervisor and Training Programme Director.

Entry Requirements

- 1) Support from existing Training Program Director for the trainee to apply.
This will require confirmation that the trainee has completed or is expected to complete the certification requirements in their parent specialty by the time of taking up the TIG fellowship.
 - Fulfilment of Trauma Training Interface Fellowship person specification essential criteria
 - Successful completion of FRCS in the trainee's specialty
 - Confirmation that the certification requirements of the parent specialty have been met before the start of the TIG fellowship
 - Successful appointment at National Selection Process
 - To be pre-certification (still in training) at the time of appointment.

Selection Process

A national selection process, in keeping with other Training Interface Fellowships, is run under the auspices of the HEE South West and with input from the Trauma TIG.

Learning Outcomes

The abilities and skills described throughout this syllabus apply equally to children and adults.

Resuscitative Surgeon

- 1) Ability to provide and lead the immediate care needed by severely injured patients
- 2) Ability to manage unstable life threatening trauma
- 3) Ability to appropriately select patients for operative, interventional radiological or conservative treatment and to provide ongoing care for all three groups
- 4) Carry out stabilisation surgery to control haemorrhage and contamination following blunt or penetrating trauma to the head and neck, thorax, abdomen, pelvis, upper and lower limbs, including junctional zones

These outcomes require the trainee to gain sufficient knowledge, skills and behaviours in the following clinical areas to allow them to practice independently:

- a) General principles of trauma mechanisms
- b) General principles of trauma pathophysiology
- c) General principles of assessment of the trauma patient
- d) General principles of life saving surgery to control haemorrhage and contamination
- e) General principles of the management of burns, injuries in pregnant women, airway injuries and head injuries
- f) Injuries to the thorax and abdomen
- g) Injuries to the head and neck
- h) Injuries to the extremities and to soft tissue
- i) Injuries to the peripheral vascular system.

Major Trauma Consultant

- 1) Ability to provide and lead the immediate care needed by severely injured patients while co-ordinating arrangements for definitive patient stabilisation
- 2) Ability to lead and co-ordinate all the multi-disciplinary care required by trauma patients to ensure the most effective overall treatment plan
- 3) Ability to provide day to day care for trauma patients:
 - identifying all injuries
 - interpreting and discussing all imaging with radiologists
 - identifying any complications which develop
 - treat, or refer for specialist treatment, all injuries and complications in both the early life saving and later reconstructive phases of treatment
 - communicate all relevant information to the patient, family and multi-disciplinary team
- 4) Act as a lead for discharge arrangements and on-going rehabilitation

These outcomes require the trainee to gain sufficient knowledge, skills and behaviours in the following clinical areas to allow them to practice independently:

- a) On-going care of injured patients, including the recognition and management of complications
- b) The impact on and management principles of trauma to:
 - a. The central nervous system
 - b. The peripheral nervous system
 - c. The musculoskeletal system
 - d. The pelvis
 - e. The urinary system
 - f. Soft tissue
 - g. The face, head and neck (including the eyes)
 - h. The thorax and its contents

- i. The abdomen and its contents
- j. The peripheral vascular system
- c) Care of the elderly trauma patient
- d) Care of vulnerable people who have suffered trauma
- e) Management of common complications
- f) Trauma system management.

Educational Principles to be Followed

As described in the parent specialty curriculum;

https://www.iscp.ac.uk/curriculum/surgical/curriculum_principles.aspx

Educational Framework to be Followed

As described in the parent specialty curriculum;

https://www.iscp.ac.uk/curriculum/surgical/curriculum_framework.aspx

Training Methods

The principles of training will be the same as for all surgical specialties as described in the trainees' parent specialty curricula; <https://www.iscp.ac.uk/curriculum/surgical/teaching.aspx>

Deaneries and LETBs will be expected to use the full range of teaching methods available (workplace, formal teaching, personal study and simulation) to ensure that all areas of the syllabus are covered.

Trainees will be placed in one (or possibly two) Major Trauma Centres over the one-year duration of the Fellowship.

Training System

As described in the parent specialty curriculum; <https://www.iscp.ac.uk/curriculum/surgical/training.aspx>

The Trauma TIG will provide specialty advice and will contribute to the Quality Assurance and Management systems as described in the parent specialty curriculum.

Assessment System

As described in the parent specialty curriculum; <https://www.iscp.ac.uk/curriculum/surgical/assessment.aspx>

Summative assessment will be through the ARCP based on the Assigned Educational Supervisor report.

The full range of Workplace Based Assessments (particularly the Procedure Based Assessment and Case Based Discussion) will be used for formative feedback and to demonstrate acquisition of knowledge and skills; <https://www.iscp.ac.uk/curriculum/surgical/assessment.aspx>.

Requirements for Successful Completion

Demonstrable attainment of the requirements of the syllabus as shown in the Assigned Educational Supervisor's report and at the ARCP.

Detailed Syllabus

Resuscitative Surgeon

GENERAL PRINCIPLES	
OBJECTIVES	
Pathophysiology of trauma: Knowledge of the pathophysiology of different types of trauma	
Major Incident Management: Ability to make the correct decisions in Major Incidents.	
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.	
KNOWLEDGE	
Anatomy of head and neck, thorax, abdomen and extremities	4
Aetiology and Epidemiology	4
Pathophysiology of shock	4
Recognition of the possibility of non-accidental injury	4
Differences in children and the elderly	4
Principles of management of severely injured patients	4
Importance of mechanism of injury – gunshot, stabbing, seat belt	4
Indications for uncross matched blood	4
Coagulopathy	4
Pathophysiology of peritonitis and sepsis	4
Trauma Scoring Systems	4
Pathophysiology of trauma	
Blunt trauma	4
Penetrating (low and high energy) trauma	4
Blast injury	4
Burns	4
Paediatric trauma	
Paediatric physiology	4
Paediatric trauma laparotomy	4
Trauma Laparotomy	4
Indications for laparostomy	4

Trauma thoracotomy	4
Indications for thoracotomy	4
Incisions used in particular circumstances	4
Damage control surgery: Damage control vs. definitive laparotomy	4
Anatomical approach to major vessels	4
Pregnant woman with severe abdominal trauma: Indications for Caesarean section	4
Burns:	
Knowledge of fluid replacement regimes for burns patients	4
CLINICAL SKILLS	
Triage	4
History and examination	4
Resuscitation	4
Investigations	4
Appropriate use of radiographs, CT and ultrasound	4
Indications for intervention	4
Recognition of injuries requiring other specialties	4
Management of hollow organ injury	4
Understand indications for Damage Control vs Definitive Surgery	4
TECHNICAL SKILLS	
Trauma Laparotomy	4
Exposure of retroperitoneal structures	4
Techniques for arresting haemorrhage including liver packing	4
Safe anastomotic techniques for gut and blood vessels	4
Appropriate formation of stomas	4
Trauma thoracotomy	4
Incisions – clam shell, lateral, sternotomy	4
Lung resection	4
Cardiac repair without bypass	4
Damage control surgery	4
Management of the postoperative patient in difficult circumstances e.g. acidosis, coagulopathy, rewarming	4
Extremity injury	4
Safe control of major vessels	4
Repair of vessels	4
Use of temporary shunts	4
Fasciotomy	4
Decision to amputate	4
Amputation AK	4
Amputation BK	4
Amputation of upper limb	4

Pregnant woman with severe abdominal trauma:	
Caesarean section	3
Burns:	
Escharotomy	4
Fluid replacement	4
Surgical airway management in severe head and neck injury:	
Cricothyroidotomy	4
Tracheostomy	4

ABDOMEN AND THORAX	
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
Concept of low energy, high energy transfer injury	4
Pathogenesis of shock	4
Closed and penetrating abdominal injury	
Anatomy	4
Concept of energy, low high energy transfer injury	4
Pathogenesis of shock	4
CLINICAL SKILLS	
Indications for and interpretation of CT	4
Indications for radiological intervention for haemorrhage control	4
Closed thoracic injury	
Assessment and initial management of multiply injured patient	4
Recognise need for operative intervention and organise	4
Understand indications for ER thoracotomy	4
Postoperative management and recognition of complications	4
Penetrating thoracic injury	
Assessment and initial management of multiply injured patient	4
Recognise need for operative intervention and organise	4
Recognise and treat sucking chest wound	4
Understand indications for ER thoracotomy	4
Postoperative management and recognition of complications	4

Closed and penetrating abdominal injury	
Assessment and initial management of multiply injured patient	4
Recognise need for laparotomy and organise	4
Arrest haemorrhage by suture/ligation/packing	4
Indication for pelvic fixator	3
Drains for biliary/pancreatic injury	4
Management of retroperitoneal haematoma	4
Postoperative management and recognition of complications	4
TECHNICAL SKILLS	
Closed and Penetrating thoracic injury	
Chest drain insertion	4
Lateral thoracotomy	4
Median sternotomy	4
Clamshell thoracotomy	4
Hilar control of massive pulmonary haemorrhage	4
Non-segmental lung resection	4
Pulmonary tractotomy using staplers	4
Pericardotomy	4
Control and suture of myocardial laceration	4
Closed and penetrating abdominal injury	
Laparotomy – trauma	4
Packing/debridement of liver trauma	4
Splenectomy	4
Splenic repair	4
Small bowel resection	4
Distal pancreatectomy	4
Pancreatic debridement and drainage	4
Mobilisation and repair of the duodenum	4
Medial rotation of left hemicolon and colectomy when appropriate	4
Medial rotation of right hemicolon and colectomy when appropriate	4
Hartmann's Procedure	4
Nephrectomy	4
Bladder repair	4
Ileostomy – construction	4
Colostomy – construction	4
Temporary abdominal closure Bogota Bag or Topical Negative Pressure Dressing	4

HEAD AND NECK	
OBJECTIVE	
Identification, assessment and initial management of trauma to the Head and Neck	
KNOWLEDGE	
Anatomy of the Head and Neck	4
CLINICAL SKILLS	

Immobilisation of patients with suspected cervical spine injury	4
Observation of patients with head injury	4
Interpretation of plain radiographs and CT scans of cervical spine	3
Interpretation of CT brain/skull	3
Decision to refer to Neurosurgeon	4
TECHNICAL SKILLS	
Exposure, control and repair of vascular, airway or GI tract structures in the neck	3
Cryothyroidotomy	4
Formal tracheostomy	4
Burr holes	1
Craniotomy/Craniectomy	1
Evacuation of Extradural/Subdural haematoma	1
Debridement of injured brain	1
Lateral canthotomy for orbital decompression	1

EXTREMITY AND SOFT TISSUE	
OBJECTIVE	
Assessment and management of blunt and penetrating injury of the soft tissues and skeleton.	
KNOWLEDGE	
Anatomy of the limbs	4
Blunt and penetrating soft tissue and skeletal injury	
Anatomy	4
Concept of low energy, high energy transfer injury	4
Pathogenesis of shock	4
Principles of soft tissue coverage and simple flaps	4
Principles of Topical Negative Pressure Dressings	4
Understanding of wound contamination/infection	4
CLINICAL SKILLS	
Blunt and penetrating soft tissue and skeletal injury	
Assessment and initial management of multiply injured patient	4
Arrest haemorrhage by pressure and tourniquet	4
Appropriate immobilisation during assessment	4
Recognition of major vascular trauma	4
Assessment of ischaemic limb	4
Recognition and treatment of acute compartment syndrome	4
Postoperative management and recognition of complications	4
TECHNICAL SKILLS	
Proximal arterial control	
Femoral	4
Brachial	4
Subclavian	4
Soft Tissue Management	

Wound debridement and lavage	4
Fasciotomy -Lower leg	4
Fasciotomy -Thigh	4
Fasciotomy -Upper limb	4
Application of dressings	4
Application of Topical Negative Pressure Dressings	4
Split skin grafting	1

VASCULAR TRAUMA	
OBJECTIVE	
Identification, assessment and management of injuries to blood vessels	
KNOWLEDGE	
Surgical anatomy	
Relationship of vascular structures to fractures, nerves, associated structures	4
Mechanisms of vascular injury	
Traumatic	4
Iatrogenic	4
Pathophysiology of trauma and muscle ischaemia	4
Pathophysiology of A-V fistula	4
Investigations	
Indications	4
Invasive	4
Non-invasive	4
Operative approach to specific injuries	
Arterial or venous	4
Open surgery	4
Endovascular	4
Combined arterial and venous	4
Orthopaedic/neurological	4
Technical options for repair	4
Fasciotomy	4
CLINICAL SKILLS	
Symptoms and signs of acute arterial/venous injury	4
Investigation	
Ankle/brachial pressure index	4
Duplex	4
CT angiogram	4
DSA	4
Manage multiply injured patient	4
Manage systemic effects of arterial trauma – rhabdomyolysis	4
TECHNICAL SKILLS	
Control with compression	4
Surgical options	
Exposure and control of major vessels	
Thoracic aorta	4
Abdominal aorta (infra and supra renal)	4
Subclavian and axillary arteries	4

Femoral and popliteal arteries	4
Use of shunts	4
Ligation	4
Direct suture repair	4
End to end anastomosis	2
Interposition vein/prosthetic graft	2
Panel/spiral grafts	2
Fasciotomy	4
Radiological	
Intra-operative imaging techniques	1
options for control of bleeding	1

Major Trauma Consultant

ON GOING CARE OF INJURED PATIENTS	
OBJECTIVES	
Ensure continuity of day-to-day care for trauma in-patients	4
Co-ordinate, prioritise and de-conflict multiple clinical inputs from different clinical teams and harmonise care paths	4
Understand and apply principles of critical care management as applied to trauma	4
Understand principles of trauma orthopaedic, neurological, maxillo-facial and plastic/reconstructive surgery interventions in order to facilitate/deconflict management	4
Understand essence of psychological/rehabilitative/therapeutic strategies to allow for successful discharge planning and onward rehabilitation/community re-integration.	4
Recognise at-risk patients, failure-to-progress, and deterioration.	4
KNOWLEDGE	
Central Nervous System	
Anatomy and Physiology	4
Principles of clinical presentation, clinical diagnosis, imaging and indications for operative/non-operative treatment of raised intracranial pressure due to extradural haemorrhage, subdural haemorrhage, parenchymal haemorrhage, cerebral oedema	4
Principles of post-craniotomy management	4
Management of mild and moderate traumatic brain injury	4
Recognition of the deteriorating Head Injury patient and principles of management of confusional states, traumatic amnesia, cognitive decline	4
Principles of neuro-rehabilitation treatment pathways	4
Peripheral Nervous System	
Principles of management of peripheral nerve injury and post-operative management	4
Spinal Injury	
Spinal anatomy and normal function	4
Classification and categorisation of skeletal spinal injury and spinal cord injury	4
Principles of clinical presentation, clinical diagnosis, imaging and indications for operative/non-operative stabilisation of spinal skeletal injury	4

Principles of post-operative management and spinal-rehabilitation treatment pathways	4
Principles of prevention and management of acute and long term complications related to cord injury	4
Musculo-skeletal Injury	
Long bone and major joint anatomy and normal function	4
Recognition of clinical features of musculo-skeletal injury (look/feel/move); principles of diagnosis and first-line imaging for injuries of long bones, joints and appendages (feet/hands).	4
Principles of operative/non-operative stabilisation of musculo-skeletal injury of long bones	4
Principles of management of open fractures and BOAST 4 guidelines	4
Principles of post-operative management and recognition of developing complications including compartment syndrome	4
Pelvic Injury	
Pelvic anatomy	4
Classification and categorisation of types of pelvic fracture	4
Principles of management of the stable and unstable pelvic fracture via conservative and operative means	4
Principles of post-operative management and rehabilitation	4
Principles of management of associated ano-rectal, nervous, urological or genital injuries	4
Urological Injury	
Anatomy of kidneys, ureters, bladder and male/female urethra	4
Principles of imaging to assess integrity of urinary tract	4
Principles of operative and conservative management of urological injury	4
Principles of management of post-operative patients following nephrectomy, renal repair, ureteric stenting, bladder repair, suprapubic or perurethral urinary drainage	4
Recognition of complications including urinary collection, urinary retention, blocked outflow tract, fistula	4
Principles of late reconstruction	4
Soft Tissue Injury	
Principles of types of penetrating (ballistic, non-ballistic) and blunt soft tissue and degloving injury	4
Principles of assessment of viability	4
Principles of debridement, soft tissue cover and management of simple and complicated soft tissue injury	4
Post-operative management of skin grafts and simple flaps	4
Maxillo-facial, ophthalmic and ENT Injury	
Classification of facial fractures	4
Assessment (clinical, imaging) of facial and peri-orbital skeleton	4
Principles of management of stable and unstable mid-face fractures	4
Principles of ward assessment of visual and auditory acuity	4
Principles of management of facial swelling, facial nerve damage, damage to integrity of facial tissues	4
Thoracic Injury	
Thoracic and mediastinal anatomy	4
Chest drains – indications	

CLINICAL SKILLS	
Thoracic Injury	
Principles of diagnosis (clinical, imaging), indications for operative/conservative therapy and ongoing management of thoracic trauma including pneumothorax (Simple, Open, Tension, Re-accumulation) and haemothorax	4
Chest drains – indications for insertion, re-insertion, removal	4
Management of the post-thoracotomy ward patient	4
Cardiac Tamponade	4
Management of the post-median, post myocardial repair sternotomy patient	4
Lung contusion	4
Flail chest	4
Diaphragmatic injury	4
Recognition of retained haemothorax/empyema	4
Abdominal Injury	
Intra-peritoneal and retro-peritoneal anatomy and physiology	4
Principles and types of solid and hollow viscus injury	4
Principles of conservative and non-conservative (surgical, interventional radiological) therapy for solid and hollow viscus injury	4
Principles of management of the post-laparotomy patient	4
Abdominal wounds, laparostomy and stoma care, enteral and parenteral nutrition, Ileus, fistula, dehiscence, abscess, peritonitis, delayed haemorrhage	4
Vascular Injury	
Vascular anatomy (torso, periphery) and physiology	4
Principles of clinical presentation and investigation of vascular injury (arterial, venous) and limb ischaemia	4
Principles of management (non-operative, operative, endovascular) of vascular trauma	4
Principles of post-operative management of the residual limb (stump)	4
Principles of management of fasciotomies	4
TECHNICAL SKILLS	
Thoracic Injury	
Chest drains – insertion, re-insertion, removal	4
Cardiac Tamponade	4
Lung contusion	4

CARE OF THE ELDERLY TRAUMA PATIENT	
OBJECTIVES	
Agitation, Dementia, Delirium and post-admission confusion	4
Mobility, cognitive and swallowing/speech dysfunction and role of therapies	4
URTI, LRTI, UTI	4
The post-fall from standing patient	4
Exacerbation of chronic conditions (COPD, DM and mobility disorders)	4
Principles of rehabilitation	4
Principles of end of life care	4
KNOWLEDGE	
Care of the vulnerable trauma patient	
Principles of adult and child safeguarding	4
Principles of managing patients who are Deprived of Liberty	4
Principles of managing alcohol and drug dependency in the trauma in-patient	4
Principles of managing trauma in-patients who have self-harmed	4
Principles of managing trauma in-patients with acute mental health crises (anxiety, depression, schizo-affective disorder, bi-polar disorder)	4
CLINICAL SKILLS	
Management of common complications	
Pain and Oral, IV, PCA and regional analgesia techniques	4
Infection (SIRS, Sepsis)	4
Nutritional dysfunction	4
Metabolic and Endocrine dysfunction	4
Common electrolyte disturbances	4
Prevention and treatment of thrombo-embolism	4
Trauma system management	
Understand the importance of performance improvement processes	4
Administer or contribute to an active process of continued trauma quality improvement, understanding data collection, outcome and process analysis, scope of actions, mitigations and quality mechanisms	4
Understand the key components of trauma system methodology, including by-pass protocols, pre-hospital care guidelines, data collection activity and infrastructure, data analysis, injury prevention schemes, post-graduate trauma education and research and rehabilitation	4

