

# The Intercollegiate Surgical Curriculum

*Educating the surgeons of the future*

## Plastic Surgery

From October 2013

Including Simulation  
(Updated 2015)



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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.

# 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](http://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-CP<sup>1</sup>/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      | <a href="#">Last's Anatomy: Regional and Applied (MRCS Study Guides)</a> by R.J. Last and Chummy Sinnatamby<br><br><a href="#">Netter's Atlas of Human Anatomy 4th Edition Saunders-Elsevier ISBN-13-978-1-4160-3385-1</a>   |
| Physiology   | <a href="#">Ganong's Review of Medical Physiology, 23rd Edition (Lange Basic Science)</a>  |
| Pathology    | <a href="#">Robbins Basic Pathology</a> by Vinay Kumar MBBS MD FRCPATH, Abul K. Abbas MBBS, Nelson Fausto MD, and Richard Mitchell MD PhD  |
| Pharmacology | <a href="#">Principles and Practice of Surgery</a> 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<br><br><a href="#">Bailey and Love's Short Practice of Surgery 25th Edition</a> by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor) |
| Microbiology | <a href="#">Principles and Practice of Surgery</a> by O. James Garden MB ChB MD FRCS(Glasgow) FRCS(Edinburgh) FRCP (Edinburgh) FRACS(Hon) FRCSC(Hon) Professor<br><br><a href="#">Bailey and Love's Short Practice of Surgery 25th Edition</a> by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor)  |



|   |   |
|---|---|
| Radiology                                   | <p><a href="#">Principles and Practice of Surgery</a> 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><a href="#">Grainger &amp; Allison's Diagnostic Radiology, 5th Edition</a>. Andy Adam (Editor), Adrian Dixon (Editor), Ronald Grainger (Editor), David Allison (Editor)</p> <p><a href="#">Bailey and Love's Short Practice of Surgery 25th Edition</a> by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor)</p>  |
| Common surgical conditions                  | <p><a href="#">Principles and Practice of Surgery</a> 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><a href="#">Bailey and Love's Short Practice of Surgery 25th Edition</a> by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor)</p>   |
| Surgical skills                             | Basic surgical skills <a href="#">course</a> and curriculum   |
| Peri-operative care including critical care | <p><a href="#">ATLS® course</a></p> <p><a href="#">CCrISP course</a></p> <p><a href="#">Principles and Practice of Surgery</a> 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><a href="#">Bailey and Love's Short Practice of Surgery 25th Edition</a> by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor)</p>  |
| Surgical care of children                   | <p><a href="#">Principles and Practice of Surgery</a> 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><a href="#">Bailey and Love's Short Practice of Surgery 25th Edition</a> by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor)</p> <p><a href="#">Jones Clinical Paediatric Surgery Diagnosis and Management</a><br/>Editors JM Hutson, M O'Brien, AA Woodward, SW Beasley 6th Edition 2008 Melbourne Blackwell</p> <p><a href="#">Paediatric Surgery: Essentials of Paediatric urology</a> by D Thomas, A Rickwood, P Duffy</p> |
| Care of the dying                           | <p><a href="#">Principles and Practice of Surgery</a> 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>  |

|                       |  |
|-----------------------|--|
|                       | <a href="#">Bailey and Love's Short Practice of Surgery 25th Edition</a> by Norman S. Williams (Editor), Christopher J.K. Bulstrode (Editor), P. Ronan O'Connell (Editor)  |
| Organ transplantation | <a href="#">Principles and Practice of Surgery</a> 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<br><br><a href="#">Bailey and Love's Short Practice of Surgery 25th Edition</a> 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](http://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 1<sup>st</sup> 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.
-

## **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

### GU

- 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"> <li>• To acquire and demonstrate underpinning basic science knowledge appropriate for the practice of surgery, including:-</li> <li>• Applied anatomy: Knowledge of anatomy appropriate for surgery</li> <li>• Physiology: Knowledge of physiology relevant to surgical practice</li> <li>• Pharmacology: Knowledge of pharmacology relevant to surgical practice centred around safe prescribing of common drugs</li> <li>• Pathology: Knowledge of pathological principles underlying system specific pathology</li> <li>• Microbiology: Knowledge of microbiology relevant to surgical practice</li> <li>Imaging:</li> <li>• Knowledge of the principles, strengths and weaknesses of various diagnostic and interventional imaging methods</li> </ul>     | <p>Course completion certificate</p> <p>MRCS</p> |   |
| Knowledge | <p>Applied anatomy:</p> <ul style="list-style-type: none"> <li>• Development and embryology</li> <li>• Gross and microscopic anatomy of the organs and other structures</li> <li>• Surface anatomy</li> <li>• Imaging anatomy</li> </ul> <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:<br/>General physiological principles including:</p> <ul style="list-style-type: none"> <li>• Homeostasis</li> <li>• Thermoregulation</li> <li>• Metabolic pathways and abnormalities</li> <li>• Blood loss and hypovolaemic shock</li> <li>• Sepsis and septic shock</li> <li>• Fluid balance and fluid</li> </ul> |  | <p>Strongly recommended:<br/>Life support<br/>Critical care</p> <p>Desirable<br/>Anatomy<br/>Team-Based<br/>Human Factors</p> |

|  |   |  |  |
|--|---|--|--|
|  | <p>replacement therapy</p> <ul style="list-style-type: none"> <li>• Acid base balance</li> <li>• Bleeding and coagulation</li> <li>• Nutrition</li> </ul> <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"> <li>• 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.</li> <li>• The principles of general anaesthesia</li> <li>• The principles of drugs used in the treatment of common malignancies</li> <li>• 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.</li> </ul> <p>Pathology:</p> <p>General pathological principles including:</p> <ul style="list-style-type: none"> <li>• Inflammation</li> <li>• Wound healing</li> <li>• Cellular injury</li> <li>• Tissue death including necrosis and apoptosis</li> <li>• Vascular disorders</li> <li>• Disorders of growth, differentiation and morphogenesis</li> <li>• Surgical immunology</li> <li>• Surgical haematology</li> <li>• Surgical biochemistry</li> <li>• Pathology of neoplasia</li> <li>• Classification of tumours</li> <li>• Tumour development and growth including metastasis</li> <li>• Principles of staging and grading of cancers</li> </ul> |  |  |
|--|---|--|--|

|  |   |  |  |
|--|---|--|--|
|  | <ul style="list-style-type: none"> <li>• Principles of cancer therapy including surgery, radiotherapy, chemotherapy, immunotherapy and hormone therapy</li> <li>• Principles of cancer registration</li> <li>• Principles of cancer screening</li> <li>• 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</li> </ul> <p>Microbiology:</p> <ul style="list-style-type: none"> <li>• Surgically important micro organisms including blood borne viruses</li> <li>• Soft tissue infections including cellulitis, abscesses, necrotising fasciitis, gangrene</li> <li>• Sources of infection</li> <li>• Sepsis and septic shock</li> <li>• Asepsis and antisepsis</li> <li>• Principles of disinfection and sterilisation</li> <li>• Antibiotics including prophylaxis and resistance</li> <li>• Principles of high risk patient management</li> <li>• Hospital acquired infections</li> </ul> <p>Imaging:</p> <ul style="list-style-type: none"> <li>• Principles of diagnostic and interventional imaging including x-rays, ultrasound, CT, MRI, PET, radiounucleotide scanning</li> </ul> |  |  |
|--|---|--|--|

|           |  |   |   |
|-----------|--|---|---|
| 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"> <li>• Abdominal pain</li> <li>• Abdominal swelling</li> <li>• Change in bowel habit</li> <li>• Gastrointestinal haemorrhage</li> <li>• Rectal bleeding</li> <li>• Dysphagia</li> <li>• Dyspepsia</li> <li>• Jaundice</li> </ul> | <p>To include the following conditions</p> <ul style="list-style-type: none"> <li>• Appendicitis</li> <li>• Gastrointestinal malignancy</li> <li>• Inflammatory bowel disease</li> <li>• Diverticular disease</li> <li>• Intestinal obstruction</li> <li>• Adhesions</li> <li>• Abdominal hernias</li> <li>• Peritonitis</li> <li>• Intestinal perforation</li> <li>• Benign oesophageal disease</li> <li>• Peptic ulcer disease</li> <li>• Benign and malignant hepatic, gall bladder and pancreatic disease</li> <li>• Haemorrhoids and perianal disease</li> <li>• Abdominal wall stomata</li> </ul> | <p>Strongly recommended:<br/>Basic surgical skills<br/>Basic laparoscopic skills<br/>Fracture treatment</p> <p>Desirable<br/>Imaging interpretation</p> <p>Desirable<br/>(Cardiothoracic Surgery / Plastic Surgery):</p> <ul style="list-style-type: none"> <li>• Anastomosis</li> <li>• Angiography</li> <li>• Vascular ultrasound</li> <li>• Surgical approaches to fractures</li> </ul> |
|        | <p>Breast disease</p> <ul style="list-style-type: none"> <li>• Breast lumps and nipple discharge</li> <li>• Acute Breast pain</li> </ul>   | <p>To include the following conditions</p> <ul style="list-style-type: none"> <li>• Benign and malignant breast lumps</li> <li>• Mastitis and breast abscess</li> </ul>   |  |
|        | <p>Peripheral vascular disease<br/>Presenting symptoms or syndrome</p> <ul style="list-style-type: none"> <li>• Chronic and acute limb ischaemia</li> <li>• Aneurismal disease</li> <li>• Transient ischaemic attacks</li> <li>• Varicose veins</li> <li>• Leg ulceration</li> </ul>                       | <p>To include the following conditions</p> <ul style="list-style-type: none"> <li>• Atherosclerotic arterial disease</li> <li>• Embolic and thrombotic arterial disease</li> <li>• Venous insufficiency</li> <li>• Diabetic ulceration</li> </ul>   |  |
|        | <p>Cardiovascular and pulmonary disease</p>  | <p>To include the following conditions</p> <ul style="list-style-type: none"> <li>• Coronary heart disease</li> <li>• Bronchial carcinoma</li> <li>• Obstructive airways disease</li> <li>• Space occupying</li> </ul>  |  |

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|  |  | lesions of the chest   |  |
|  | <p>Genitourinary disease<br/>Presenting symptoms or syndrome</p> <ul style="list-style-type: none"> <li>• Loin pain</li> <li>• Haematuria</li> <li>• Lower urinary tract symptoms</li> <li>• Urinary retention</li> <li>• Renal failure</li> <li>• Scrotal swellings</li> <li>• Testicular pain</li> </ul> | <p>To include the following conditions</p> <ul style="list-style-type: none"> <li>• Genitourinary malignancy</li> <li>• Urinary calculus disease</li> <li>• Urinary tract infection</li> <li>• Benign prostatic hyperplasia</li> <li>• Obstructive uropathy</li> </ul>   |  |
|  | <p>Trauma and orthopaedics<br/>Presenting symptoms or syndrome</p> <ul style="list-style-type: none"> <li>• Traumatic limb and joint pain and deformity</li> <li>• Chronic limb and joint pain and deformity</li> <li>• Back pain</li> </ul>   | <p>To include the following conditions</p> <ul style="list-style-type: none"> <li>• Simple fractures and joint dislocations</li> <li>• Fractures around the hip and ankle</li> <li>• Basic principles of Degenerative joint disease</li> <li>• Basic principles of inflammatory joint disease including bone and joint infection</li> <li>• Compartment syndrome</li> <li>• Spinal nerve root entrapment and spinal cord compression</li> <li>• Metastatic bone cancer</li> <li>• Common peripheral neuropathies and nerve injuries</li> </ul> |  |
|  | <p>Disease of the Skin, Head and Neck<br/>Presenting symptoms or syndrome</p> <ul style="list-style-type: none"> <li>• Lumps in the neck</li> <li>• Epistaxis</li> <li>• Upper airway obstructions</li> </ul>  | <p>To include the following conditions</p> <ul style="list-style-type: none"> <li>• Benign and malignant skin lesions</li> <li>• Benign and malignant lesions of the mouth and tongue</li> </ul>   |  |
|  | <p>Neurology and Neurosurgery<br/>Presenting symptoms or syndrome</p> <ul style="list-style-type: none"> <li>• Headache</li> </ul>   | <p>To include the following conditions</p> <ul style="list-style-type: none"> <li>• Space occupying lesions from bleeding and</li> </ul>   |  |

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|  | <ul style="list-style-type: none"> <li>• Facial pain</li> <li>• Coma</li> </ul>  | tumour  |  |  |
|  | <p>Endocrine Presenting symptoms or syndrome</p> <ul style="list-style-type: none"> <li>• Lumps in the neck</li> <li>• Acute endocrine crises</li> </ul> | <p>To include the following conditions</p> <ul style="list-style-type: none"> <li>• Thyroid and parathyroid disease</li> <li>• Adrenal gland disease</li> <li>• Diabetes</li> </ul> |  |  |

| Module 3  | Basic surgical skills  | Assessment technique | Areas in which simulation should be used to develop relevant skills   |
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| Objective | <ul style="list-style-type: none"> <li>• Preparation of the surgeon for surgery</li> <li>• Safe administration of appropriate local anaesthetic agents</li> <li>• Acquisition of basic surgical skills in instrument and tissue handling.</li> <li>• Understanding of the formation and healing of surgical wounds</li> <li>• Incise superficial tissues accurately with suitable instruments.</li> <li>• Close superficial tissues accurately.</li> <li>• Tie secure knots.</li> <li>• Safely use surgical diathermy</li> <li>• Achieve haemostasis of superficial vessels.</li> <li>• Use suitable methods of retraction.</li> <li>• Knowledge of when to use a drain and which to choose.</li> <li>• Handle tissues gently with appropriate instruments.</li> <li>• Assist helpfully, even when the operation is not familiar.</li> <li>• Understand the principles of anastomosis</li> <li>• Understand the principles of endoscopy</li> </ul> | WBA- PBA, CBD, DOPS  |   |
| Knowledge | <p>Principles of safe surgery</p> <ul style="list-style-type: none"> <li>• Preparation of the surgeon for surgery</li> <li>• Principles of hand washing, scrubbing and gowning</li> <li>• Immunisation protocols for surgeons and patients</li> </ul> <p>Administration of local anaesthesia</p> <ul style="list-style-type: none"> <li>• Choice of anaesthetic agent</li> <li>• Safe practise</li> </ul> <p>Surgical wounds</p> <ul style="list-style-type: none"> <li>• Classification of surgical wounds</li> <li>• Principles of wound management</li> <li>• Pathophysiology of wound healing</li> </ul>   |                      | <p>Strongly recommended:<br/>Basic surgical skills<br/>Tissue handling/suturing</p> <p>Strongly recommended (Paediatric Surgery):</p> <ul style="list-style-type: none"> <li>• Basic suturing and wound management</li> </ul> |

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|                                 | <ul style="list-style-type: none"> <li>• Scars and contractures</li> <li>• Incision of skin and subcutaneous tissue: <ul style="list-style-type: none"> <li>○ Langer's lines</li> <li>○ Choice of instrument</li> <li>○ Safe practice</li> </ul> </li> <li>• Closure of skin and subcutaneous tissue: <ul style="list-style-type: none"> <li>○ Options for closure</li> <li>○ Suture and needle choice</li> </ul> </li> <li>• Safe practice</li> <li>• Knot tying <ul style="list-style-type: none"> <li>○ Range and choice of material for suture and ligation</li> <li>○ Safe application of knots for surgical sutures and ligatures</li> </ul> </li> <li>• Haemostasis: <ul style="list-style-type: none"> <li>○ Surgical techniques</li> <li>○ Principles of diathermy</li> </ul> </li> <li>• Tissue handling and retraction: <ul style="list-style-type: none"> <li>○ Choice of instruments</li> </ul> </li> <li>• Biopsy techniques including fine needle aspiration cytology</li> <li>• Use of drains: <ul style="list-style-type: none"> <li>○ Indications</li> <li>○ Types</li> <li>○ Management/removal</li> </ul> </li> <li>• Principles of anastomosis</li> <li>• Principles of surgical endoscopy</li> </ul> |  | <p>t</p> <p>Desirable<br/>(Cardiothoracic<br/>Surgery / Plastic<br/>Surgery):</p> <ul style="list-style-type: none"> <li>• Anastomosis</li> <li>• Endoscopy</li> </ul> |
| Clinical Skills                 | <p>4 Preparation of the surgeon for surgery</p> <ul style="list-style-type: none"> <li>• Effective and safe hand washing, gloving and gowning</li> <li>• Administration of local anaesthesia</li> <li>• Accurate and safe administration of local anaesthetic agent</li> </ul> <p>4 Preparation of a patient for surgery</p> <ul style="list-style-type: none"> <li>• Creation of a sterile field</li> <li>• Antisepsis</li> <li>• Draping</li> </ul>  |  |  |
| Technical Skills and Procedures | <p>4 Preparation of the surgeon for surgery</p> <ul style="list-style-type: none"> <li>• Effective and safe hand washing, gloving and gowning</li> </ul> <p>4 Administration of local anaesthesia</p> <ul style="list-style-type: none"> <li>• Accurate and safe administration of local anaesthetic agent</li> </ul> <p>4 Incision of skin and subcutaneous tissue:</p> <ul style="list-style-type: none"> <li>• Ability to use scalpel, diathermy and scissors</li> </ul> <p>4 Closure of skin and subcutaneous tissue:</p> <ul style="list-style-type: none"> <li>• Accurate and tension free apposition of wound edges</li> </ul> <p>4 Knot tying:</p> <ul style="list-style-type: none"> <li>• Single handed</li> </ul>   |  |  |

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|  | <ul style="list-style-type: none"> <li>• Double handed</li> <li>• Instrument</li> <li>• Superficial</li> <li>• Deep</li> </ul>   |  |  |
|  | <p>3 Haemostasis:</p> <ul style="list-style-type: none"> <li>• Control of bleeding vessel (superficial)</li> <li>• Diathermy</li> <li>• Suture ligation</li> <li>• Tie ligation</li> <li>• Clip application</li> <li>• Transfixion suture</li> </ul> |  |  |
|  | <p>4 Tissue retraction:</p> <ul style="list-style-type: none"> <li>• Tissue forceps</li> <li>• Placement of wound retractors</li> </ul>  |  |  |
|  | <p>3 Use of drains:</p> <ul style="list-style-type: none"> <li>• Insertion</li> <li>• Fixation</li> <li>• Removal</li> </ul>   |  |  |
|  | <p>3 Tissue handling:</p> <ul style="list-style-type: none"> <li>• Appropriate application of instruments and respect for tissues</li> <li>• Biopsy techniques</li> </ul>  |  |  |
|  | <p>4 Skill as assistant:</p> <ul style="list-style-type: none"> <li>• Anticipation of needs of surgeon when assisting</li> </ul>   |  |  |

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| 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:<br/>Life Support<br/>Critical Care<br/>ATLS / APLS</p> <p>Desirable:<br/>Team working<br/>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   |
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| Objective | <p>To assess and manage preoperative risk<br/>           To manage patient care in the peri-operative period<br/>           To conduct safe surgery in the operating theatre environment<br/>           To assess and manage bleeding including the use of blood products<br/>           To care for the patient in the post-operative period including the assessment of common complications<br/>           To assess, plan and manage post-operative fluid balance<br/>           To assess and plan perioperative nutritional management<br/>           To prevent, recognise and manage delirium in the surgical patient within the appropriate legal framework in place across the UK (see <b>footnote</b>).</p> <p><b>Footnote</b><br/>           The relevant legislation includes:</p> <ul style="list-style-type: none"> <li>• Mental Capacity Act (2005)</li> <li>• Mental Health Act (1983 and 2007)</li> <li>• Adults with Incapacity (Scotland) Act (2000)</li> <li>• Mental Health (Care and Treatment) (Scotland) Act (2003)</li> <li>• Adult Support and Protection (Scotland) Act (2007)</li> </ul> | WBA<br>Course test completion certificate |   |
| Knowledge | <p>Pre-operative assessment and management:</p> <ul style="list-style-type: none"> <li>• Cardiorespiratory physiology</li> <li>• Diabetes mellitus and other relevant endocrine disorders</li> <li>• Fluid balance and homeostasis</li> <li>• Renal failure</li> <li>• Pathophysiology of sepsis – prevention and prophylaxis</li> <li>• Thromboprophylaxis</li> </ul>  |   | <p>Strongly recommended:<br/>           Basic surgical skills<br/>           Life Support<br/>           Critical Care</p> <p>Strongly recommended (Paediatric Surgery):</p> <ul style="list-style-type: none"> <li>• Safe surgery</li> </ul> <p>Desirable<br/>           Human Factors</p> |

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|  | <ul style="list-style-type: none"> <li>• Laboratory testing and imaging</li> <li>• Risk factors for surgery and scoring systems</li> <li>• Pre-medication and other preoperative prescribing</li> <li>• Principles of day surgery</li> </ul> <p>Intraoperative care:</p> <ul style="list-style-type: none"> <li>• Safety in theatre including patient positioning and avoidance of nerve injuries</li> <li>• Sharps safety</li> <li>• Diathermy, laser use</li> <li>• Infection risks</li> <li>• Radiation use and risks</li> <li>• Tourniquet use including indications, effects and complications</li> <li>• Principles of local, regional and general anaesthesia</li> <li>• Principles of invasive and non-invasive monitoring</li> <li>• Prevention of venous thrombosis</li> <li>• Surgery in hepatitis and HIV carriers</li> <li>• Fluid balance and homeostasis</li> </ul> <p>Post-operative care:</p> <ul style="list-style-type: none"> <li>• Post-operative monitoring</li> <li>• Cardiorespiratory physiology</li> <li>• Fluid balance and homeostasis</li> <li>• Diabetes mellitus and other relevant endocrine disorders</li> <li>• Renal failure</li> <li>• Pathophysiology of blood loss</li> <li>• Pathophysiology of sepsis including SIRS and shock</li> <li>• Multi-organ dysfunction syndrome</li> <li>• Post-operative complications in general</li> <li>• Methods of postoperative analgesia</li> </ul> <p>To assess and plan nutritional management</p> <ul style="list-style-type: none"> <li>• Post-operative nutrition</li> <li>• Effects of malnutrition, both excess and depletion</li> </ul> |  | Team-working |
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|  | <ul style="list-style-type: none"> <li>• Metabolic response to injury</li> <li>• Methods of screening and assessment of nutritional status</li> <li>• Methods of enteral and parenteral nutrition</li> </ul> <p>Haemostasis and Blood Products:</p> <ul style="list-style-type: none"> <li>• Mechanism of haemostasis including the clotting cascade</li> <li>• Pathology of impaired haemostasis e.g. haemophilia, liver disease, massive haemorrhage</li> <li>• Components of blood</li> <li>• Alternatives to use of blood products</li> <li>• Principles of administration of blood products</li> <li>• Patient safety with respect to blood products</li> </ul> <p>Coagulation, deep vein thrombosis and embolism:</p> <ul style="list-style-type: none"> <li>• Clotting mechanism (Virchow Triad)</li> <li>• Effect of surgery and trauma on coagulation</li> <li>• Tests for thrombophilia and other disorders of coagulation</li> <li>• Methods of investigation for suspected thromboembolic disease</li> <li>• Principles of treatment of venous thrombosis and pulmonary embolism including anticoagulation</li> <li>• Role of V/Q scanning, CT pulmonary angiography, D-dimer and thrombolysis</li> <li>• Place of pulmonary embolectomy</li> <li>• Prophylaxis of thromboembolism:</li> <li>• Risk classification and management of DVT</li> <li>• Knowledge of methods of prevention of DVT, mechanical and pharmacological</li> </ul> <p>Antibiotics:</p> <ul style="list-style-type: none"> <li>• Common pathogens in</li> </ul> |  |  |
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|                 | <p>surgical patients</p> <ul style="list-style-type: none"> <li>• Antibiotic sensitivities</li> <li>• Antibiotic side-effects</li> <li>• Principles of prophylaxis and treatment</li> </ul> <p>Metabolic and endocrine disorders in relation perioperative management</p> <ul style="list-style-type: none"> <li>• Pathophysiology of thyroid hormone excess and deficiency and associated risks from surgery</li> <li>• Causes and effects of hypercalcaemia and hypocalcaemia</li> <li>• Complications of corticosteroid therapy</li> <li>• Causes and consequences of Steroid insufficiency</li> <li>• Complications of diabetes mellitus</li> <li>• Causes and effects of hyponatraemia</li> <li>• Causes and effects of hyperkalaemia and hypokalaemia</li> </ul> <p>Delirium</p> <ul style="list-style-type: none"> <li>• Epidemiology and prognosis of delirium</li> <li>• Causes and clinical features of delirium</li> <li>• The impact of delirium on patient, family and carers</li> </ul> |  |  |
| Clinical Skills | <p>3 Pre-operative assessment and management:</p> <ul style="list-style-type: none"> <li>• History and examination of a patient from a medical and surgical standpoint</li> <li>• Interpretation of pre-operative investigations</li> <li>• Management of co morbidity</li> <li>• Resuscitation</li> <li>• Appropriate preoperative prescribing including premedication</li> </ul> <p>3 Intra-operative care:</p> <ul style="list-style-type: none"> <li>• Safe conduct of intraoperative care</li> <li>• Correct patient positioning</li> <li>• Avoidance of nerve injuries</li> </ul>   |  |  |

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|  | <ul style="list-style-type: none"> <li>• Management of sharps injuries</li> <li>• Prevention of diathermy injury</li> <li>• Prevention of venous thrombosis</li> </ul> <p>3 Post-operative care:</p> <ul style="list-style-type: none"> <li>• Writing of operation records</li> <li>• Assessment and monitoring of patient's condition</li> <li>• Post-operative analgesia</li> <li>• Fluid and electrolyte management</li> <li>• Detection of impending organ failure</li> <li>• Initial management of organ failure</li> <li>• Principles and indications for Dialysis</li> <li>• Recognition, prevention and treatment of post-operative complications</li> </ul> <p>3 Haemostasis and Blood Products:</p> <ul style="list-style-type: none"> <li>• Recognition of conditions likely to lead to the diathesis</li> <li>• Recognition of abnormal bleeding during surgery</li> <li>• Appropriate use of blood products</li> <li>• Management of the complications of blood product transfusion</li> </ul> <p>3 Coagulation, deep vein thrombosis and embolism</p> <ul style="list-style-type: none"> <li>• Recognition of patients at risk</li> <li>• Awareness and diagnosis of pulmonary embolism and DVT</li> <li>• Role of duplex scanning, venography and d-dimer measurement</li> <li>• Initiate and monitor treatment of venous thrombosis and pulmonary embolism</li> <li>• Initiation of prophylaxis</li> </ul> <p>3 Antibiotics:</p> <ul style="list-style-type: none"> <li>• Appropriate prescription of antibiotics</li> </ul> |  |  |
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|  | <p>3 Assess and plan preoperative nutritional management</p> <ul style="list-style-type: none"> <li>• Arrange access to suitable artificial nutritional support, preferably via a nutrition team including Dietary supplements, Enteral nutrition and Parenteral nutrition</li> </ul> <p>3 Metabolic and endocrine disorders</p> <ul style="list-style-type: none"> <li>• History and examination in patients with endocrine and electrolyte disorders</li> <li>• Investigation and management of thyrotoxicosis and hypothyroidism</li> <li>• Investigation and management of hypercalcaemia and hypocalcaemia</li> <li>• Peri-operative management of patients on steroid therapy</li> <li>• Peri-operative management of diabetic patients</li> <li>• Investigation and management of hyponatraemia</li> <li>• Investigation and management of hyperkalaemia and hypokalaemia</li> </ul> <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> |  |   |
| <p>Technical Skills and Procedures</p> | <p>2 Central venous line insertion</p> <p>4 Urethral catheterisation</p>   |  | <p>Strongly recommended (Paediatric Surgery)</p> <p>Desirable</p> |

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| 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"> <li>• who have sustained a head injury</li> <li>• who have sustained a spinal cord injury</li> <li>• who have sustained abdominal and urogenital trauma</li> <li>• who have sustained vascular trauma</li> <li>• who have sustained a single or multiple fractures or dislocations</li> <li>• who have sustained traumatic skin and soft tissue injury</li> <li>• who have sustained burns</li> <li>• Safely assess the multiply injured patient.</li> <li>• Contextualise any combination of the above</li> <li>• Be able to prioritise management in such situation as defined by ATLS, APLS etc</li> </ul> <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<br>Course test and certificate |   |
| Knowledge | <p>General</p> <ul style="list-style-type: none"> <li>• Scoring systems for assessment of the injured patient</li> <li>• Major incident triage</li> <li>• Differences In children</li> </ul> <p>Shock</p> <ul style="list-style-type: none"> <li>• Pathogenesis of shock</li> <li>• Shock and cardiovascular physiology</li> <li>• Metabolic response to injury</li> <li>• Adult respiratory distress syndrome</li> <li>• Indications for using</li> </ul>  |                                    | <p>Strongly recommended:<br/>Life Support<br/>Critical Care<br/>Wound management<br/>ATLS / APLS</p> <p>Desirable:<br/>Team-working<br/>Human Factors<br/>Trauma management</p> |

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|                 | <p>uncross matched blood</p> <p>Wounds and soft tissue injuries</p> <ul style="list-style-type: none"> <li>• Gunshot and blast injuries</li> <li>• Stab wounds</li> <li>• Human and animal bites</li> <li>• Nature and mechanism of soft tissue injury</li> <li>• Principles of management of soft tissue injuries</li> <li>• Principles of management of traumatic wounds</li> <li>• Compartment syndrome</li> </ul> <p>Burns</p> <ul style="list-style-type: none"> <li>• Classification of burns</li> <li>• Principle of management of burns</li> </ul> <p>Fractures</p> <ul style="list-style-type: none"> <li>• Classification of fractures</li> <li>• Pathophysiology of fractures</li> <li>• Principles of management of fractures</li> <li>• Complications of fractures</li> <li>• Joint injuries</li> </ul> <p>Organ specific trauma</p> <ul style="list-style-type: none"> <li>• Pathophysiology of thoracic trauma</li> <li>• Pneumothorax</li> <li>• Head injuries including traumatic intracranial haemorrhage and brain injury</li> <li>• Spinal cord injury</li> <li>• Peripheral nerve injuries</li> <li>• Blunt and penetrating abdominal trauma</li> <li>• Including spleen</li> <li>• Vascular injury including iatrogenic injuries and intravascular drug abuse</li> <li>• Crush injury</li> <li>• Principles of management of skin loss including use of skin grafts and skin flaps</li> </ul> |  |  |
| Clinical Skills | <p>General</p> <p>4 History and examination</p> <p>3 Investigation</p> <p>3 Referral to appropriate surgical subspecialties</p> <p>4 Resuscitation and early management of patient who has sustained thoracic, head, spinal, abdominal or limb injury</p>   |  |  |

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|                                 | <p>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"> <li>• Management of the unconscious patient</li> <li>• Initial management of skin loss</li> <li>• Initial management of burns</li> <li>• Prevention and early management of the compartment syndrome</li> </ul> |  |           |
| 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 |

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| 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<br>MRCS          |   |
| Knowledge | <ul style="list-style-type: none"> <li>• Physiological and metabolic response to injury and surgery</li> <li>• Fluid and electrolyte balance</li> <li>• Thermoregulation Safe prescribing in children</li> <li>• Principles of vascular access in children</li> <li>• Working knowledge of trust and Local Safeguarding Children Boards (LSCBs) and Child Protection Procedures</li> <li>• Basic understanding of child protection law</li> <li>• Understanding of Children's rights</li> <li>• Working knowledge of types and categories of child maltreatment, presentations, signs and</li> </ul> |                      | <p>Strongly recommended:<br/>Critical Care<br/>Child protection</p> <p>Desirable<br/>Team-working</p> |

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|                 | <p>other features (primarily physical, emotional, sexual, neglect, professional)</p> <ul style="list-style-type: none"> <li>• Understanding of one personal role, responsibilities and appropriate referral patterns in child protection</li> <li>• Understanding of the challenges of working in partnership with children and families</li> <li>• Recognise the possibility of abuse or maltreatment</li> <li>• Recognise limitations of own knowledge and experience and seek appropriate expert advice</li> <li>• Urgently consult immediate senior in surgery to enable referral to paediatricians</li> <li>• Keep appropriate written documentation relating to child protection matters</li> <li>• Communicate effectively with those involved with child protection, including children and their families</li> </ul> |  |  |
| Clinical Skills | <p>3 History and examination of the neonatal surgical patient</p> <p>3 History and examination of paediatric surgical patient</p> <p>3 Assessment of respiratory and cardiovascular status</p> <p>3 Undertake consent for surgical procedures (appropriate to the level of training) in paediatric patients</p>   |  |  |



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

| 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"> <li>Principles of transplant immunology including tissue typing, acute, hyperacute and chronic rejection</li> </ul> |                      |   |

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|  | <ul style="list-style-type: none"><li>• Principles of immunosuppression</li><li>• Tissue donation and procurement</li><li>• Indications for whole organ transplantation</li></ul> |  |  |
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| <b>Module 10</b>                           | <b>Health Promotion</b>  |
| <b>General Aspects</b>                     |  |
| 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"> <li>• Damaging health and social issues such as excessive alcohol consumption, obesity, smoking and illicit drugs and the harmful effects they have on health</li> <li>• The connection between mental health and physical health</li> <li>• The importance of health education for promoting self-care for patients</li> </ul> |
| 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"> <li>• Nutrition (Module 5, Perioperative Care)</li> <li>• Drugs and alcohol (Module 1, Pharmacology)</li> <li>• Screening (Module 1, Pathology)</li> <li>• Child protection (Module 7, Surgical Care of the Paediatric Patient)</li> </ul>  |
| <b>Obesity</b>                             |  |
| Objective                                  | <ul style="list-style-type: none"> <li>• Recognise the health risks posed by obesity including an increased incidence of coronary heart disease, type 2 diabetes, hypertension, stroke, and some major cancers.</li> <li>• Assess and explain the higher risks for obese individuals undergoing surgery.</li> </ul>  |
| Knowledge                                  | <ul style="list-style-type: none"> <li>• Classification of excess body mass</li> <li>• Social, psychological and environmental factors that underpin obesity</li> <li>• Physiological and metabolic effects of obesity on the surgical patient</li> <li>• Available treatments for obesity including diet, exercise, medication and surgery</li> </ul>             |
| 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>   |
| <b>Dementia</b>                      |   |
| Objective                            | <ul style="list-style-type: none"> <li>Adapt surgical treatment in order to deliver high quality and person-centred care for patients with dementia</li> <li>Apply the appropriate legal framework to the treatment of patients with cognitive impairment</li> </ul>  |
| Knowledge                            | <ul style="list-style-type: none"> <li>Clinical features of dementia and the distinction between it and delirium</li> <li>The impact of dementia on patient, family and carers</li> <li>Principles and key provisions of the relevant legislation regarding the safeguarding of vulnerable adults across the UK (see <b>footnote</b>).</li> </ul>   |
| 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 <b>footnote</b>).</p> <p><b>Footnote</b><br/>The relevant legislation includes:</p> <ul style="list-style-type: none"> <li>Mental Capacity Act (2005)</li> <li>Mental Health Act (1983 and 2007)</li> <li>Adults with Incapacity (Scotland) Act (2000)</li> <li>Mental Health (Care and Treatment) (Scotland) Act (2003)</li> <li>Adult Support and Protection (Scotland) Act (2007).</li> </ul> |
| <b>Exercise and physical fitness</b> |   |
| Objective                            | <ul style="list-style-type: none"> <li>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</li> </ul>   |
| Knowledge                            | <ul style="list-style-type: none"> <li>Physical inactivity as an independent risk factor for ill health and obesity</li> <li>Relationship between physical exercise programmes and healthy eating and smoking cessation programmes</li> <li>Government behaviour change programmes such as 'Let's Get Moving' and 'Shift into Sports'</li> </ul>  |

|                 |  |
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|                 |  |
| Clinical Skills | 4 Utilisation of all patient interactions as opportunities for health and fitness promotion<br>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.

| <b>Early Years training in Plastic Surgery</b> |   |
|--|---|
| <b>Objective</b>                               | To gain experience in early care of patients with the following: <ul style="list-style-type: none"> <li>• Thermal injury, soft tissue trauma, including hand, limb and facial injuries.</li> <li>• Skin and soft tissue tumours including malignancy</li> <li>• Common elective procedures as laid out in the curriculum</li> </ul>                                       |
| <b>Knowledge</b>                               | Basic science relevant to management of common emergency and elective plastic surgery conditions including anatomy, physiology, pathology and pharmacology.<br>Knowledge of the principles of allotransplantation<br>Knowledge of relevant imaging techniques.<br>Principles of patient management relevant to common emergency and elective plastic surgical conditions. |
| <b>Clinical Skills</b>                         | Ability to systematically undertake examination of the hand and upper limb.<br>Ability to carry out initial assessment and management of burns cases requiring resuscitation.<br>Ability to diagnose common skin tumours including malignancy.  |
| <b>Technical Skills</b>                        | Exploration of traumatic wounds including hand trauma cases.<br>Repair of divided hand extensor tendon.<br>Repair of divided digital nerve.<br>Repair of divided flexor tendons<br>Split and full thickness skin grafting.<br>Excision of skin and soft tissue lesions.<br>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.<br>Exploration, debridement and closure of wound<br>Harvesting split skin graft<br>Harvesting of full thickness skin graft<br>Repair of divided extensor tendon<br>Repair divided digital nerve<br>Excision and closure of simple skin lesions |
| Case Based Discussion   | At least 1 per attachment   |
| mini CEX  | Clinical assessment of injured hand<br>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<br>Should be able to demonstrate knowledge of <ul style="list-style-type: none"> <li>- applied and surgical anatomy of the breast, its blood, nerve supply and function,</li> <li>- development of the breast and congenital deformity and variations of breast form and associated structures,</li> <li>- hormonal control of the breast and its pathology, when deranged,</li> <li>- breast physiology in pregnancy and</li> </ul> |   |

|  |  |  |
|--|--|--|
|  | <p>lactation,</p> <ul style="list-style-type: none"> <li>- benign pathologies of the breast,</li> <li>- presentation, clinical features of breast cancer, its staging, prognosis and management pathways,</li> <li>- effect of ionizing radiation on the breast and implants,</li> <li>- planning incisions on the breast.</li> <li>- closure and management of breast wounds.</li> <li>- self-perception and self-consciousness in relation to breast conformation and proportion including the social and sexual dimensions,</li> <li>- pathology of deranged self-image.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- content, structure, physical and biological properties of breast implants,</li> <li>- spectrum of implants available and their applications,</li> <li>- design, principles and applications of tissue expanders,</li> <li>- nature, physiology and behaviour of implant capsules,</li> <li>- management of capsular contractures.</li> <li>- biology, implications, avoidance of and management of implant infection,</li> <li>- various designs and approaches to breast augmentation and their applications.</li> <li>- the issues surrounding breast size and its assessment.</li> <li>- complications of breast augmentation and their management.</li> <li>- various designs and patterns of breast reduction and mastopexy,</li> <li>- complications and management of breast reduction/remodelling.</li> <li>- presentation, management and complications of gynaecomastia.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- assessment of envelope and volume in relation to breast asymmetry, both developmental and acquired,</li> <li>- classification and management pathways of the tuberous breast,</li> <li>- management pathways and choices</li> </ul> |  |
|--|--|--|

|                             |  |   |
|-----------------------------|--|---|
|                             | <ul style="list-style-type: none"> <li>in breast asymmetry,</li> <li>- impact of breast reconstruction choices on symmetry,</li> <li>- effect of time, ageing and pregnancy on breast asymmetry correction,</li> <li>- various techniques of breast reconstruction, their applications, design and planning,</li> <li>- complications of breast reconstruction,</li> <li>- techniques for nipple reconstruction, including considerations of sequence and timing,</li> <li>- features of dysmorphophobia,</li> <li>- psychosexual dimension in aesthetic breast surgery.</li> </ul>  |   |
| <b>Clinical Skills</b>      | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- assess and undertake non-operative of the management of the acute surgical patient,</li> <li>- take a targeted breast history,</li> <li>- perform patient examination including breast examination with reference to aesthetic considerations.</li> </ul> <p><b>INTERMEDIATE</b><br/>Demonstrate knowledge of the management algorithms for the procedures covered in this section including investigations.</p> <p><b>ADVANCED</b><br/>Should be able to</p> <ul style="list-style-type: none"> <li>- demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning,</li> <li>- assess and accurately record aesthetic concerns about the breast,</li> <li>- formulate management plans in relation to aesthetic interventions,</li> <li>- clearly explain, consent and counsel potential patients for aesthetic breast surgery,</li> <li>- assess the psychological suitability for aesthetic breast surgery and appropriately refer for expert psychological advice as necessary,</li> <li>- undertake risk benefit analysis of non-pathological based surgery,</li> <li>- deal with disappointment and postoperative dissatisfaction</li> </ul> |   |
| <b>Technical Skills and</b> | <p><b>BASIC</b><br/>Should be able to perform</p>  | Desirable<br>Aesthetic surgery – Breast |

|                   |  |  |
|-------------------|--|--|
| <b>Procedures</b> | <ul style="list-style-type: none"> <li>- planning, execution and closing incisions on the breast with reference to aesthetic principles and sub units.</li> <li>- designing and conduction of excision of skin lesions of the breast,</li> <li>- undertaking an aesthetic approach to removal of benign lesions of the breast,</li> <li>- scar revision in aesthetic breast surgery</li> </ul> <p>INTERMEDIATE</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- correction of the inverted nipple (various techniques),</li> <li>- bilateral breast augmentation by various routes, in various planes,</li> <li>- Wise pattern bilateral breast reduction,</li> <li>- vertical pattern bilateral breast reduction,</li> <li>- bilateral mastopexy of periareolar, vertical and Wise patterns,</li> <li>- excision of gynaecomastia, incorporating various forms of liposuction as appropriate.</li> </ul> |  |
|-------------------|--|--|

| <b>Topic</b>     | <b>Aesthetic</b>  |  |
|------------------|---|--|
| <b>Category</b>  | ST3-6 Intermediate Years  | <b>Areas in which simulation should be used to develop relevant skills</b> |
| <b>Module 2</b>  | <b>Aesthetic Surgery of Face, Orbit &amp; Neck Rejuvenation</b>   |  |
| <b>Objective</b> | <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>  |  |
| <b>Knowledge</b> | <p>BASIC</p> <p>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- psychology of the desire for anti-aging interventions,</li> <li>- features denoting high-risk groups of patients that may present for surgical rejuvenation,</li> <li>- normal facial anatomy and its common variants, including clear</li> </ul> |  |

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|  | <p>understanding of the blood supply, sensory and motor innervation,</p> <ul style="list-style-type: none"> <li>- facial musculature and the course and distribution of the facial nerve,</li> <li>- the fascial planes of the face and the brow and the pattern of fascial compartments of the brow, face and neck,</li> <li>- anatomy of the eyelids,</li> <li>- cosmetic units of the face,</li> <li>- the effect of sun exposure on the texture and elasticity of the skin and the patterns of aging,</li> <li>- effect of various laser/light treatments on the dermis,</li> <li>- mechanisms of healing of partial thickness injury in facial skin,</li> <li>- formulation and application of chemical peeling agents.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- accurate assessment and analysis of the pattern of face aging,</li> <li>- injectable fillers available, their uses, contraindications and interactions,</li> <li>- pharmacology of paralytic agents, the different formulations and the muscle groups to which they may be applied,</li> <li>- role of fillers and paralytics in the overall patient management plan,</li> <li>- indications for, and design of, endoscopic and open browlift and foreheadplasty,</li> <li>- fixation methods in brow lift,</li> <li>- indications and contraindications for facelift,</li> <li>- anatomy of the SMAS layer and how it may be modified,</li> <li>- facial fat pads and how they change with time,</li> <li>- variation of designs for facelift incisions,</li> <li>- different methods of facelifting,</li> <li>- different methods of necklifting,</li> <li>- designs and variations of blepharoplasty, upper and lower,</li> <li>- role of submental lipectomy and liposuction,</li> <li>- management of complications of rejuvenation surgery.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to demonstrate</p> |  |
|--|--|--|

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|                        | <p>knowledge of</p> <ul style="list-style-type: none"> <li>- applications, indications, limitations and complications of blepharoplasty alone and in combination with other techniques.</li> </ul>   |  |
| <b>Clinical Skills</b> | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- assess and deliver non-operative management of the acute surgical patient,</li> <li>- take history to include features relevant to the assessment and management of the aesthetic features of the head and neck,</li> <li>- examine the patient to include relevant aesthetic features of the head and neck.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to</p> <ul style="list-style-type: none"> <li>- assessment and analysis of all the features of the aging eyelid</li> <li>- demonstrate knowledge of the management algorithms, combinations and permutations of the rejuvenation procedures covered in this section including appropriate investigations,</li> <li>- record accurate assessment of the pattern of symptoms and physical features.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to</p> <ul style="list-style-type: none"> <li>- demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning,</li> <li>- prepare an overall management plan for a given patient,</li> <li>- assess the psychological suitability for rejuvenation surgery and appropriately refer for expert advice as necessary,</li> <li>- undertake risk benefit analysis of non-pathological based surgery,</li> <li>- counsel and consent a patient for rejuvenation intervention.</li> <li>- define the subgroup of patients that can be managed by nonsurgical intervention,</li> <li>- recognise and counsel the unrealistic patient,</li> <li>- manage the situation whereby a patient's best interests are served by declining to treat that patient,</li> <li>- deal with disappointment and postoperative dissatisfaction.</li> </ul> |  |

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

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

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

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

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

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

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

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

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



# 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  |  |
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| Category  | ST3-6 Intermediate Years   | <b>Areas in which simulation should be used to develop relevant skills</b> |
| Module 1  | <b>Classification, primary management and transfer</b>   |  |
| 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"> <li>ATLS</li> <li>EMSB or ABLIS</li> <li>PALS/APLS</li> </ul> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>-anatomy of the body surface, physiology, pathophysiology of burn injury,</li> <li>- factors influencing burn healing,</li> <li>- blood supply of skin,</li> <li>- the timing and rationale for antibiotic use</li> <li>- timing of initial surgery,</li> <li>- appropriate pre-operative investigations,</li> <li>- classification of burn injury,</li> <li>- resuscitation options,</li> </ul> |  |

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

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

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|  | <p>burn patient.<br/>- PHDU practices.</p> <p>ADVANCED<br/>Should demonstrate knowledge of<br/>- microbiology of burns,<br/>- nutritional support.</p>  |   |
| <b>Clinical Skills</b>                 | <p>BASIC<br/>Should demonstrate ability to<br/>- assess burn injury,<br/>- manage large burn wounds,<br/>- apply temporary dressings e.g. negative pressure.</p> <p>INTERMEDIATE<br/>Should demonstrate ability to<br/>- manage more complex burns,<br/>- resuscitate burns with TBSA &lt;40%,<br/>- explain the problems associated with the extremes of age and of polytrauma,<br/>- prescribe appropriate antibiotics (antibiotic stewardship),</p>  |   |
| <b>Technical Skills and Procedures</b> | <p>BASIC<br/>Should be able to perform<br/>- appropriate pre-washing and prepping burn during dressing change,<br/>- escharotomy and fasciotomy,<br/>- application of a range of burns dressings e.g. Biobrane, Flamazine.</p> <p>INTERMEDIATE<br/>Should be able to perform<br/>- elective tracheostomy,<br/>- adequate debridement of injured soft tissues to achieve a stable wound approaching elective conditions (including fascial excision),<br/>- planning of future soft tissue reconstruction.</p> | Strongly recommended<br>Burns treatment |
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| <b>Topic</b>    | <b>BURNS</b>             |  |
| <b>Category</b> | ST3-6 Intermediate Years | <b>Areas in which simulation should be used to develop relevant skills</b> |
| <b>Module 3</b> | <b>Early surgery</b>     |  |

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

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

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| <b>Topic</b>     | <b>BURNS</b>   |  |
| <b>Category</b>  | ST3-6 Intermediate Years   | <b>Areas in which simulation should be used to develop relevant skills</b> |
| <b>Module 4</b>  | <b>Late surgery</b>  |  |
| <b>Objective</b> | <i>Acquire competence in later burn management including the planning and execution of reconstructive surgery.</i>   |  |
| <b>Knowledge</b> | <b>BASIC</b><br>Should demonstrate knowledge of <ul style="list-style-type: none"> <li>- anatomy of skin and soft tissues,</li> <li>- pathophysiology of hypertrophic scars and keloids,</li> <li>- principles of scar management,</li> <li>- effect of growth on burn scars,</li> <li>- use of grafts and local flaps.</li> </ul> <b>INTERMEDIATE</b><br>Should demonstrate knowledge of <ul style="list-style-type: none"> <li>- indications for use of skin substitutes, distant flaps and free flaps,</li> <li>- 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</li> </ul> |  |

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

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

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

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| <b>Topic</b>                           | <b>BURNS</b>  |
| <b>Category</b>                        | ST3-6 Intermediate Years  |
| <b>Module 6</b>                        | <b>Paediatric burns</b>   |
| <b>Objective</b>                       | <i>Acquire competence in the diagnosis and management of paediatric burns and the recognition of the need for multidisciplinary management.</i>   |
| <b>Knowledge</b>                       | <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"> <li>- as defined by PALS/APLS,</li> <li>- paediatric fluid regimens,</li> <li>- toxic shock syndrome,</li> <li>- non-accidental injury.</li> </ul> <p>INTERMEDIATE.</p> <p>As per modules 1-5, in the context of the paediatric patient.</p> <p>Demonstrates knowledge of PHDU practices.</p> |
| <b>Clinical Skills</b>                 | <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>  |
| <b>Technical Skills and Procedures</b> | <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>   |



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

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|   | <p>reconstruction, and formulate an appropriate multi-disciplinary management plan</p> <ul style="list-style-type: none"> <li>- 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</li> </ul>  |
| <p><b>Technical Skills and Procedures</b></p> | <p><b>BASIC</b><br/>Should be able to:</p> <ul style="list-style-type: none"> <li>- apply a negative pressure dressing to a chest wall defect</li> <li>- perform skin grafting to a chest wall defect</li> </ul> <p>perform a range of local skin flaps for a chest wall defect</p> <p><b>INTERMEDIATE</b><br/>Should be able to perform:</p> <ul style="list-style-type: none"> <li>- primary debridement of a chest wall wound</li> <li>- pectoralis major and rectus abdominis pedicled muscle flaps for median sternotomy coverage</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform:</p> <ul style="list-style-type: none"> <li>- fasciocutaneous / musculocutaneous / muscle-only flap reconstruction for thoracic defects (e.g. serratus anterior, trapezius, latissimus dorsi or parascapular flaps).</li> <li>- reconstruction of defect with omental flap (in concert with general surgery colleague)</li> </ul> |

# 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

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

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

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

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

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

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

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





## Complex Wound Syllabus

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

# 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

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| <b>Topic</b>     | <b>CRANIOFACIAL</b>   |
| <b>Category</b>  | ST3-6 Intermediate Years  |
| <b>Module 1</b>  | <b>General Principles</b>   |
| <b>Objective</b> | <p><i>Principles of the MDT and the 'Craniofacial Assessment'</i><br/> <i>e.g. Psychology of facial difference and speech and language assessment</i></p> <p><i>Anatomy &amp; Embryology of the craniofacial complex</i><br/> <i>Cephalometrics and facial analysis</i><br/> <i>Trauma</i><br/> <i>Emergency procedures</i><br/> <i>Surgical approaches to the craniofacial complex</i></p>   |
| <b>Knowledge</b> | <p><b>BASIC</b><br/> Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>- 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</li> <li>- multidisciplinary assessment of 'The Craniofacial Patient' (parameters including visual, audiological, airway, speech, feeding, psychological and neurological),</li> <li>- 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,</li> <li>- criteria that would constitute grounds for admission to Intensive Care Unit,</li> <li>- issues of non-accidental injury and child protection, and the referral pathways for protection of the 'at-risk' child.</li> <li>- emergency diagnosis of elevated intracranial pressure (ICP) and/or intracranial haemorrhage</li> </ul> <p><b>INTERMEDIATE</b><br/> Should be able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>- cephalometric characteristics of craniofacial syndromes</li> <li>- technique of intermaxillary fixation</li> </ul> <p><b>ADVANCED</b><br/> Should be able to demonstrate knowledge of:</p> |

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

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

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

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

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

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| <b>Topic</b>           | <b>CRANIOFACIAL</b>   |
| <b>Category</b>        | ST3-6 Intermediate Years  |
| <b>Module 6</b>        | <b>Orbital surgery</b>  |
| <b>Objective</b>       | <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>  |
| <b>Knowledge</b>       | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- applied anatomy of the orbit and contents</li> <li>- examination of the eye and basic vision</li> <li>- eyelid anatomy and eyelid malposition</li> <li>- growth of the orbit</li> <li>- definition of terms eg hypertelorism, dystopia, telecanthus</li> <li>- differential diagnosis/genetics of hypertelorism syndromes</li> <li>- MDT assessment of hypertelorism syndromes</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- medial and lateral canthal fixation methods</li> <li>- orbital Prostheses – types, indications</li> <li>- retrobulbar haemorrhage</li> </ul> |
| <b>Clinical Skills</b> | <p><b>BASIC</b><br/>Emergencies – see module 1</p>  |

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| <b>Topic</b>     | <b>CRANIOMAXILLOFACIAL TRAUMA</b>  |  |
| <b>Category</b>  | ST3-6 Intermediate Years   | <b>Areas in which simulation should be used to develop relevant skills</b> |
| <b>Module</b>    | <b>Craniomaxillofacial trauma</b>  |  |
| <b>Objective</b> | <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> |  |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should demonstrate knowledge of :</p> <ul style="list-style-type: none"> <li>- anatomy of scalp, face, nose, ears, eyelids, orbit and contents</li> <li>- anatomy of craniofacial skeleton and temporomandibular joint (TMJ)</li> <li>- anatomy and physiology of parotid and lacrimal apparatus</li> <li>- bone healing</li> <li>- aetiology of facial trauma</li> <li>- priorities of management</li> <li>- assessment of airway and level of consciousness (Glasgow coma scale)</li> <li>- assessment of head injury</li> </ul>   |  |



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

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

## Ear Reconstruction

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| <b>Topic</b>           | <b>Ear reconstruction</b>  |  |
| <b>Category</b>        | ST3-6 Intermediate Years   | <b>Areas in which simulation should be used to develop relevant skills</b> |
| <b>Module</b>          | <b>Ear deformities and ear reconstruction</b>  |  |
| <b>Objective</b>       | <i>Competence in the diagnosis and principles of management of all aspects of ear deformities and ear reconstruction</i>   |  |
| <b>Knowledge</b>       | <p><b>BASIC</b><br/>Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>- anatomy and embryology of the external, middle and inner ear,</li> <li>- 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,</li> <li>- various classifications of ear deformities including acquired ear deformities</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>- principles of osseointegration,</li> <li>- local and regional flaps around the ear including the scalp,</li> <li>- development of the mandible and syndromes associated with ear deformities,</li> <li>- different techniques of correcting the prominent ear</li> <li>- principles of tissue expansion.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- 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,</li> <li>- techniques to correct ear lobe deformities.</li> </ul> |  |
| <b>Clinical Skills</b> | <p><b>BASIC</b><br/>Should demonstrate ability to undertake</p> <ul style="list-style-type: none"> <li>- clinical assessment of the ear and identifying</li> </ul>   |  |

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

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

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

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



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

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

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

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

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

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

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

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|  | <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- closed K-wiring for: <ul style="list-style-type: none"> <li>CMC/PIP joint dislocations</li> <li>phalangeal/metacarpal fractures</li> <li>distal radius fractures (pins &amp; plaster)</li> </ul> </li> <li>- open fixation of metacarpal fractures,</li> <li>- repair of ulnar collateral ligament of MCPJ of thumb (Gamekeeper's thumb).</li> </ul> <p>ADVANCED</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- open fixation of phalangeal fractures.</li> </ul> |  |
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| <b>Topic</b>     | <b>HAND</b>   |  |
| <b>Category</b>  | ST3-6 Intermediate Years  | <b>Areas in which simulation should be used to develop relevant skills</b> |
| <b>Module 3</b>  | <b>Osteoarthritis and Inflammatory Arthritis</b>  |  |
| <b>Objective</b> | <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>  |  |
| <b>Knowledge</b> | <p>BASIC</p> <p>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- pathophysiology of osteoarthritis, inflammatory arthritis and septic arthritis including appreciation of patterns of disease</li> <li>- pharmacology for the medical treatment of these disorders</li> <li>- imbalances and deformities associated with inflammatory arthritis</li> <li>- pathomechanics of common rheumatoid hand deformities including: <ul style="list-style-type: none"> <li>distal radioulnar joint subluxation and carpal translocation</li> <li>MCPJ subluxation and ulnar drift</li> <li>digital boutonnière and swan neck</li> <li>thumb deformity and CMC disease</li> </ul> </li> <li>- principles of arthroplasty.</li> </ul> |  |

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



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

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

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| <b>Topic</b>     | <b>HAND</b>  |  |
| <b>Category</b>  | ST3-6 Intermediate Years   | <b>Areas in which simulation should be used to develop relevant skills</b> |
| <b>Module 5</b>  | <b>Nerve and nerve-related disorders</b>   |  |
| <b>Objective</b> | <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> |  |

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

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

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

# 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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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| <b>Topic</b>     | <b>Head &amp; Neck Surgery</b>   |  |
| <b>Category</b>  | ST3-6 Intermediate Years   | <b>Areas in which simulation should be used to develop relevant skills</b> |
| <b>Module 6</b>  | <b>Facial Reanimation</b>  |  |
| <b>Objective</b> | <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>   |  |
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| <b>Knowledge</b>       | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- epidemiology,</li> <li>- anatomy of the facial nerve,</li> <li>- aetiological causes of facial palsy,</li> <li>- prognostic factors and implications for patient treatment recommendations,</li> <li>- range of reconstructive options</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- non-surgical treatments (Botox, biofeedback, electrical stimulation of facial musculature),</li> <li>- static sling procedures (tendon, fascia, artificial),</li> <li>- dynamic sling procedures (temporalis, masseter),</li> <li>- principles of facial nerve reconstruction (direct suturing, nerve grafting, cross facial nerve grafting).</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- free muscle transfer techniques (cross facial nerve grafting, gracilis, pectoralis minor, rectus abdominis),</li> <li>- reconstructive aesthetic techniques (endoscopic browlift, facelift, upper &amp; lower blepharoplasties),</li> </ul> |  |
| <b>Clinical Skills</b> | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- take focused facial nerve related history eliciting factors localising site of injury,</li> <li>- undertake competent facial nerve examination ,</li> <li>- initiate appropriate investigations (CT, MRI, EMG, nerve conduction studies).</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- interpret CT, MRI, EMG &amp; nerve conduction studies,</li> <li>- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues.</li> </ul>  |  |



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

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

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

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

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

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

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

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

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| <b>Topic</b>     | <b>LOWER LIMB</b>  |  |
| <b>Category</b>  | ST3-6 Intermediate Years   | <b>Areas in which simulation should be used to develop relevant skills</b> |
| <b>Module 4</b>  | <b>Vascular injuries and amputation</b>  |  |
| <b>Objective</b> | <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> |  |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- anatomy of vasculature, including well-known variations e.g. peronea magna,</li> <li>- response of vessels to injury and repair,</li> </ul>   |  |

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

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

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|  | <ul style="list-style-type: none"> <li>- consequences of infection following trauma and surgery,</li> <li>- complications of free flap surgery,</li> <li>- complications following the use of local flaps,</li> <li>- those complications which require referral to specialist centres.</li> </ul> <p>INTERMEDIATE<br/>Should demonstrate knowledge of the management of all complications following soft tissue reconstruction including recognition of skeletal complications.</p> <p>ADVANCED<br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- basic science and evidence-base underpinning the management of complications,</li> <li>- orthopaedic principles of managing delayed union and non-union</li> </ul>           |
| <b>Clinical Skills</b>                 | <p>BASIC<br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- undertake clinical assessment of complications and in particular recognise a compromised free or local flap, in conjunction with general patient parameters.</li> <li>- use relevant adjunctive techniques such as ultrasound.</li> </ul> <p>INTERMEDIATE<br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- use a range of free flap monitoring techniques.</li> </ul>  |
| <b>Technical Skills and Procedures</b> | <p>BASIC<br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- washout of haematoma/collection.</li> <li>- application of leeches to flap tip with venous congestion.</li> <li>- simple debridement of non-viable flap and appropriate application of temporary dressing.</li> </ul> <p>INTERMEDIATE<br/>Should be able to take back free flap to theatre with consultant assistance.</p> <p>ADVANCED<br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- salvage or amputation of limb following flap failure,</li> <li>- bone debridement in conjunction with orthopaedic surgeons.</li> <li>- raising flaps to assist orthopaedic team for skeletal revision surgery including cancellous bone graft</li> </ul> |
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| <b>Topic</b>     | <b>LOWER LIMB</b>   |
| <b>Category</b>  | ST3-6 Intermediate Years  |
| <b>Module 6</b>  | <b>Paediatric injuries</b>  |
| <b>Objective</b> | <i>Acquire competence in the diagnosis and management of children with lower limb injuries.</i>   |
| <b>Knowledge</b> | <p>BASIC<br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- principles of management of children's injuries – skeletal and soft tissue – and appreciate differences from adults,</li> </ul> |



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

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

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

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|  | <ul style="list-style-type: none"> <li>- recognise where further mammographic views or MRI may be required and request these appropriately,</li> <li>- 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.</li> </ul>   |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- appropriate pre-op skin prep and draping and antibiotic prophylaxis,</li> <li>- palpable excision biopsy, palpable wide local excision,</li> <li>- sentinel lymph node biopsy, dual modality and blue dye only,</li> <li>- node sample in centres where SNB not employed,</li> <li>- simple mastectomy</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- axillary lymph node dissection (level 3) both primary and delayed.</li> </ul> |

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

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

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

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

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



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

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

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|                               | <p>carcinoma.</p> <ul style="list-style-type: none"> <li>- vulval reconstruction with fasciocutaneous flaps</li> <li>- coverage of exposed testis following Fourniers</li> <li>- urethral reconstruction options following malignancy or</li> <li>- trauma, including flap, FTSG, transplantation of urethra, tubed bladder wall</li> </ul>  |  |
| <p><b>Clinical Skills</b></p> | <p><b>BASIC</b><br/>Ability to demonstrate</p> <ul style="list-style-type: none"> <li>- 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.</li> </ul> <p><b>INTERMEDIATE</b><br/>Ability to demonstrate</p> <ul style="list-style-type: none"> <li>- 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.</li> </ul> <p><b>ADVANCED</b><br/>Ability to manage and lead</p> <ul style="list-style-type: none"> <li>- 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.</li> </ul> |  |

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

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

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



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

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

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

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| <b>Topic</b>    | <b>Skin Surgery</b>      |
| <b>Category</b> | ST3-6 Intermediate Years |

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

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

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

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

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

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| <b>Topic</b>     | <b>Skin Surgery</b>  |
| <b>Category</b>  | ST3-6 Intermediate Years   |
| <b>Module 5</b>  | <b>Scarring, wounds and other surgical conditions of the skin</b>  |
| <b>Objective</b> | <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> |

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

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| <b>Topic</b>                           | <b>Skin Surgery</b>  |
| <b>Category</b>                        | ST3-6 Intermediate Years   |
| <b>Module 6</b>                        | <b>Multidisciplinary team workings, allied professionals, palliative care and follow up regimes, trials, research and national guidelines</b>  |
| <b>Objective</b>                       | <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>  |
| <b>Knowledge</b>                       | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- national guidelines (NICE) for the diagnosis, treatment and follow up of BCC, SCC's, Bowen's, Melanoma, dermatofibrosarcoma protuberans and suprafascial sarcoma,</li> <li>- surgical and non surgical options.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- management of the patient with recurrent disease (surgical, non-surgical and radiotherapy options),</li> <li>- 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.</li> </ul> |
| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>Should demonstrate ability in using communication and referral pathways to specialist MDM's</p> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- interpret lymphoscintigraphy, CT, MRI, PET, FNA, USS and pathology minimum dataset,</li> <li>- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues,</li> <li>- apply psychological assessment tools for evaluation of psychological needs (patient questionnaires).</li> </ul>  |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- excision of small skin recurrences / <i>in transit</i> metastases,</li> <li>- recording surgical procedures,</li> <li>- handling of surgical specimens,</li> <li>- orientation and appropriate carriage medium for skin specimens,</li> <li>- performing FNA.</li> </ul>  |

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| <b>Topic</b>     | <b>Vascular anomalies</b>   |
| <b>Category</b>  | ST3-6 Intermediate Years  |
| <b>Module</b>    | <b>Vascular Anomalies</b>   |
| <b>Objective</b> | <i>Competence in the assessment, surgical management and aftercare of vascular anomalies.</i>   |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- classification and natural history of the common types of vascular anomalies including haemangiomas and vascular malformations affecting different vessels</li> <li>- diagnostic criteria of main types of vascular anomalies including ability to distinguish high and low flow lesions as originally described by Mulliken</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- 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)</li> <li>- indications for radiological investigations and safety issues pertaining to those investigations including MRI, CT and angiography</li> <li>- pharmacological interventions that are or have been used in the treatment of haemangiomas eg corticosteroids (systemic and intralesional), propranolol and possible side effects</li> <li>- principles of management of vascular tumours and malformations</li> <li>- problems related to multiple lesions eg haemangiomas including visceral or venous malformations</li> <li>- different types of laser treatment for vascular malformations eg pulsed dye laser and long pulse Neodymium:YAG laser including the role of topical cooling</li> <li>- role of the MDT in management of Vascular Anomalies</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of :</p> <ul style="list-style-type: none"> <li>- difficult to classify lesions eg glomangiomas, rapidly involuting congenital haemangiomas, non-involuting congenital haemangiomas, tufted haemangiomas and haemangioendotheliomas</li> <li>- appearance of different vascular lesions on ultrasound, MRI, CT and angiography</li> <li>- 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</li> <li>- 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</li> </ul> |

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

## **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

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

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



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

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|   | <ul style="list-style-type: none"> <li>- clinically assess fractures, dislocations and ligamentous injuries of the hand and wrist,</li> <li>- assess the unstable wrist,</li> <li>- manage common fractures of the hand and wrist,</li> <li>- apply a range of plaster splints.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- manage more complex fractures of the hand and wrist,</li> <li>- manage distal radius and scaphoid fractures by standard techniques.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- clinically assess and manage complex fractures of the distal radius and scaphoid,</li> <li>- manage ligamentous injury of the carpus and distal radioulnar joint,</li> <li>- manage malunion and non-union of fractures of the phalanges, carpus and distal radius.</li> </ul>  |
| <p><b>Technical Skills and Procedures</b></p> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- 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.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- closed K-wiring for: <ul style="list-style-type: none"> <li>CMC/PIP joint dislocations</li> <li>phalangeal/metacarpal fractures</li> <li>distal radius fractures (pins &amp; plaster)</li> </ul> </li> <li>- open fixation of metacarpal fractures,</li> <li>- open fixation of uncomplicated distal radius fractures,</li> <li>- repair of ulnar collateral ligament of MCPJ of thumb (Gamekeeper's thumb),</li> <li>- application of external fixator to upper limb.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- open fixation of phalangeal fractures,</li> <li>- operative treatment of intra-articular fractures of the PIP joint,</li> <li>- open fixation of complex distal radius fractures,</li> <li>- scaphoid fracture fixation (acute and for non-union),</li> <li>- vascularised bone grafting for scaphoid non-union,</li> <li>- operative stabilisation of acute carpal disruptions,</li> <li>ligament stabilisation procedures for chronic problems of the, scapholunate, lunotriquetral CMC joints and midcarpal instability,</li> <li>- bone transport, and</li> </ul> <p>Should be able to use bone substitutes.</p> |
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| <b>Topic</b>           | <b>HAND</b>  |
| <b>Category</b>        | ST7/8 Final Years and TIG Fellows  |
| <b>Module 3</b>        | <b>Osteoarthritis and Inflammatory Arthritis</b>   |
| <b>Objective</b>       | <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>  |
| <b>Knowledge</b>       | <p><b>BASIC</b><br/>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- pathophysiology of osteoarthritis, inflammatory arthritis and septic arthritis including appreciation of patterns of disease.</li> <li>- imbalances and deformities associated with inflammatory arthritis</li> <li>- pathomechanics of common rheumatoid hand deformities including: <ul style="list-style-type: none"> <li>distal radioulnar joint subluxation and carpal translocation</li> <li>MCPJ subluxation and ulnar drift</li> <li>digital boutonnière and swan neck</li> <li>thumb deformity and CMC disease</li> </ul> </li> <li>- principles of arthroplasty.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- principles and detailed management of the common osteoarthritic disorders of the hand and wrist including the basal joint of the thumb,</li> <li>- principles and detailed management of rheumatoid arthritis in the hand and wrist,</li> <li>- aetiology, pathomechanics of deformity in inflammatory arthritides including understanding disease patterns,</li> <li>- biomechanics of small joint replacement,</li> <li>- place of soft tissue reconstruction, joint fusion, replacement, interposition and excision arthroplasty in the treatment of the rheumatoid hand and wrist,</li> <li>- planning and prioritising treatment within an MDT setting.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- principles and detailed management of more complex and osteoarthritic disorders of the hand including secondary osteoarthritis,</li> <li>- surgical and non-surgical management of the wrist, tendons, small joints and imbalance disorders (swan neck and boutonnière) occurring in rheumatoid arthritis,</li> <li>- pathology, mechanisms of deformity and management of other inflammatory conditions (non-rheumatoid) affecting the hand and wrist,</li> <li>- management of Kienböck's disease and Madelung's deformity.</li> </ul> |
| <b>Clinical Skills</b> | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- clinically assess the arthritic patient and recognise the typical patterns of disease,</li> <li>- demonstrate conservative management techniques including splinting, exercises and understanding of occupational therapy assessment and provision of aids to daily living,</li> <li>- undertake external K-wire removal.</li> </ul> <p><b>INTERMEDIATE</b></p>   |

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|  | <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- undertake detailed examination of the patient with inflammatory arthritis to demonstrate the features of: <ul style="list-style-type: none"> <li>distal radioulnar joint subluxation and carpal translocation</li> <li>MCPJ subluxation and ulnar drift</li> <li>digital boutonnière and swan neck</li> <li>thumb deformity and CMCJ disease</li> </ul> </li> <li>- diagnose pathology through local anaesthetic joint injection techniques,</li> <li>- undertake treatment by joint injection,</li> <li>- includes simulation-based exercises for joint injection techniques</li> </ul> <p>ADVANCED</p> <p>Should demonstrate knowledge of detailed management algorithms for the conditions covered in this module including complex conditions.</p>   |
| <b>Technical Skills and Procedures</b> | <p>BASIC</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- harvesting of iliac bone graft / radius bone graft,</li> <li>- simulation-based exercises of wrist arthroscopy</li> </ul> <p>INTERMEDIATE</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- arthrodesis of DIPJ / PIPJ/ MCPJ,</li> <li>- trapeziectomy plus/minus soft tissue ligamentous reconstruction,</li> <li>- total wrist arthrodesis</li> <li>- Darrachs procedure</li> <li>- Suave-Kapandje procedure</li> <li>- diagnostic wrist arthroscopy</li> </ul> <p>ADVANCED</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- therapeutic wrist arthroscopy e.g. TFCC debridement</li> <li>- limited arthrodesis including STT, 4-corner, radiolunate</li> <li>- 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</li> <li>- joint replacement arthroplasty: PIP / CMCJ / Wrist / DRUJ</li> </ul> |
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| <b>Topic</b>     | <b>HAND</b>   |
| <b>Category</b>  | ST7/8 Final Years and TIG Fellows   |
| <b>Module 4</b>  | <b>Tendon and tendon-related disorders</b>  |
| <b>Objective</b> | <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> |
| <b>Knowledge</b> | <p>BASIC</p> <p>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- mechanisms of tendon injury and healing,</li> <li>- pathophysiology of related tendon disorders.</li> </ul>             |

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

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| <b>Topic</b>    | <b>HAND</b>                              |
| <b>Category</b> | ST7/8 Final Years and TIG Fellows        |
|                 | <b>Nerve and nerve-related disorders</b> |

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| <b>Module 5</b>  |  |
| <b>Objective</b> | <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>   |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- topographic anatomy of peripheral nerve including brachial plexus,</li> <li>- response of peripheral nerve to injury and repair,</li> <li>- pathophysiology of nerve compressive disorders.</li> <li>- appropriate outcome assessment instruments.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- techniques of nerve repair,</li> <li>- mechanisms of brachial plexus injury, the patterns of injury and outline treatment options,</li> <li>- pathophysiology and classification of CRPS and neuropathic pain problems.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- appropriate use of nerve grafts and other conduits,</li> <li>- techniques of nerve reconstruction, neurotisation, and muscle transfers for reanimation of the upper limb,</li> <li>- principles of management and classification systems pertinent to cerebral palsy and tetraplegia,</li> <li>- pharmacological and non-pharmacological methods for the relief of nerve-related pain problems.</li> </ul> |

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

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| <b>Topic</b>    | <b>HAND</b>                       |
| <b>Category</b> | ST7/8 Final Years and TIG Fellows |



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| <b>Module 6</b>  | <b>The Child's Hand, Vascular Disorders and Tumours</b>   |
| <b>Objective</b> | <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>   |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- principles of management of children's hand disorders including classification, reconstructive principles and timing of operations for congenital difference,</li> <li>- embryology of the upper limb and the mechanisms of malformation,</li> <li>- patterns of normal growth and development,</li> <li>- management of vascular injury including compartment syndrome,</li> <li>- principles of management of soft tissue and bony tumours particularly the more common swellings found around the hand.,</li> <li>- management of upper limb tumours with reference to surgical oncology including biopsy techniques, excision margins, management of regional lymph nodes, formal amputations.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- the following conditions of the Child's Hand: trigger digits, polydactyly including thumb duplication, simple syndactyly, epiphyseal injury (Salter Harris)</li> <li>- management of vascular insufficiency syndromes, - haemangiomas and vascular malformations,</li> <li>- management of soft tissue and bony tumours including formal amputations, reconstructions,</li> <li>- principles of management of skin cancer occurring in the upper limb and management of the regional lymph nodes.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- the following conditions of the Child's Hand: 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</li> <li>- vascular lesions including vascular malformations,</li> <li>- management of acute and chronic vascular insufficiency syndromes including compartment syndrome / Volkmann's ischaemic contracture.</li> <li>- classification systems and histopathology relevant to neoplasms of the upper limb including skin cancer, sarcoma and bone tumours,</li> <li>- modalities of treatment including non-surgical and surgical options,</li> </ul> |

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

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|  | <ul style="list-style-type: none"><li>- cleft hand correction</li><li>- recreation of first web space (various conditions)</li><br/><li>- excision of major vascular malformations and reconstruction resultant defects</li><li>- excision of malignant tumours of bone and soft tissue including compartmentectomy and reconstruction of resultant defects.</li><li>- axillary lymphadenectomy</li></ul> |
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## 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

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

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

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



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

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

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

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

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|  | <ul style="list-style-type: none"> <li>- infiltration of ears with local anaesthesia including greater auricular nerve blocks,</li> <li>- application of prominent ear head dressing.</li> </ul> <p>INTERMEDIATE<br/>Should demonstrate ability to</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> <li>- closed approach to the septum with or without concomitant rhinoplasty</li> <li>- submucous resection of spurs</li> <li>- approach to the septum during open rhinoplasty</li> <li>- enlargement of septal perforation to reduce symptoms</li> <li>- cartilage graft harvest from nasal septum,</li> <li>- adjustment of nasal dorsum including dorsal hump, reduction and dorsal augmentation.</li> </ul> <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> <li>- primary otoplasty with cartilage-scoring techniques,</li> <li>- primary otoplasty with suture-only techniques,</li> <li>- management of complications including haemorrhage, infection and necrosis of skin and cartilage.</li> </ul> <p>ADVANCED<br/>Should be able to perform</p> <p><i>Rhinoplasty</i></p> <ul style="list-style-type: none"> <li>- harvesting calvarial bone graft,</li> <li>- septoplasty surgery including scoring and SMR techniques,</li> <li>- septoplasty with or without cartilage grafting</li> <li>- management of complications including haemorrhage,</li> <li>- secondary procedures to correct unsatisfactory results,</li> <li>- closure of septal perforation</li> <li>- reconstruction of septum for nasal support</li> </ul> <p><i>Otoplasty</i></p> <ul style="list-style-type: none"> <li>- secondary procedures to correct unsatisfactory results including ear reconstruction techniques (see Ear Reconstruction Module),</li> <li>- techniques to correct other deformities such as cup ear, lop ear and Stahl's deformity.</li> </ul> |
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| <b>Topic</b>     | <b>AESTHETIC</b>  |
| <b>Category</b>  | ST7/8 Final Years and TIG Fellows   |
| <b>Module 4</b>  | <b>Rejuvenation/restoration of the trunk, body contouring, liposuction &amp; fat grafting</b>                                 |
| <b>Objective</b> | <i>Acquire competence in the assessment, planning correction and management of all aspects of body lifting and contouring</i> |
| <b>Knowledge</b> | BASIC<br>Should demonstrate knowledge of  |

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|                        | <ul style="list-style-type: none"> <li>- anatomy of the skin and subcutis,</li> <li>- patterns and organisation of the blood and nerve supply of the relevant regions of the skin,</li> <li>- pattern of relaxed skin tension lines over the whole body,</li> <li>- pathogenesis of thromboembolic disease, and the prophylaxis and management of these disorders,</li> <li>- selection of appropriate prophylactic antibiotics.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- principles of bariatric surgery,</li> <li>- metabolic consequences of bariatric surgery,</li> <li>- pathogenesis, effects and management of tissue necrosis,</li> <li>- appropriate placement of incisions for best aesthetic outcome,</li> <li>- complications of skin-tailoring surgery,</li> <li>- principles of liposuction and know of the different devices and their relative risks and benefits,</li> <li>- effects of postoperative changes in body weight and pregnancy in this group of patients,</li> <li>- pathology and principles of fat grafting.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- psychological condition of dysmorphophobia,</li> <li>- condition of monosymptomatic hyperchondriacal psychosis,</li> <li>- psychosexual impacts of body image disorder,</li> <li>- patterns of acquired skin excess,</li> <li>- syndromic abnormalities of skin laxity,</li> <li>- forms of lipodystrophy, its patterns and presentations,</li> <li>- specific complications of the various techniques of liposuction,</li> <li>- techniques, donor sites and morbidity of fat grafting,</li> <li>- the developing research into trophic/non-volumetric effects of fat grafts.</li> </ul> |
| <b>Clinical Skills</b> | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- assess and deliver non-operative management of the acute surgical patient,</li> <li>- take history to include features relevant to the assessment and management of body contour problems,</li> <li>- examine the patient with reference to patterns of skin excess and laxity to include assessment and documentation of symptomatically displeasing body contours.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- undertake clinical assessment for the perceived deformities covered in this module.</li> <li>- translate presenting complaints into an appropriate plan for potential intervention,</li> <li>- recognise the patient seeking treatment of obesity by body contouring.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- make a surgical plan for the individual patient in respect of conditions covered in this module using skills of analysis and judgement,</li> <li>- assess the psychological suitability for body contouring surgery and appropriately refers for psychological advice as necessary,</li> </ul>   |

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|   | <ul style="list-style-type: none"> <li>- perform risk-benefit analysis of non-pathological based surgery,</li> <li>- counsel and consent a patient for an episode of body contouring surgery,</li> <li>- communicate the range of secondary effects of a given operation and suggest adjuvant procedures or alternative techniques,</li> <li>- accurately assess local volume excess and translate that into a plan for liposuction,</li> <li>- recognise lipodystrophies,</li> <li>- recognise local fat deficiencies which will benefit from fat grafting,</li> <li>- recognise and counsel the unrealistic patient,</li> <li>- explain to patient when body contouring surgery not in best interests of patient,</li> <li>- deal with disappointment and postoperative dissatisfaction.</li> </ul>  |
| <p><b>Technical Skills and Procedures</b></p> | <p><b>BASIC</b><br/>Should be able to undertake</p> <ul style="list-style-type: none"> <li>- wound management and dressing care,</li> <li>- management of the necrotic wound and its defect,</li> <li>- range of wound closure techniques,</li> <li>- application of closed suction drainage.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- various patterns of abdominoplasty.</li> <li>- correction of lax abdominal musculature,</li> <li>- regional liposuction,</li> <li>- scar revision including management of the 'dogear',</li> <li>- fat graft harvest and preparation of fat grafts,</li> <li>- undertakes local lipofilling with fat graft.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform:</p> <ul style="list-style-type: none"> <li>- modified abdominoplasty in the presence of unfavourable abdominal scarring.</li> <li>- brachioplasty.</li> <li>- BELT/body lift,</li> <li>- buttock lift,</li> <li>- thigh lift,</li> <li>- liposuction of the arms or distal to the mid thigh, major circumferential liposuction,</li> <li>- complex combination procedures,</li> <li>- major staged fat graft for general contour restoration,</li> <li>- secondary contouring procedures to correct unsatisfactory results.</li> </ul> |

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



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|   | <ul style="list-style-type: none"> <li>- formulate management plan for the optimal enhancement of the facial aesthetic patient by non-surgical techniques,</li> <li>- optimize the sequencing of the recommended treatments,</li> <li>- undertake basic functional and psychological assessment of patient's needs,</li> <li>- 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.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- record the patient's pretreatment status and progress using charts.</li> <li>- 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.</li> <li>- 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).</li> <li>- modify the original prescription of dermatological formulations based on patient response.</li> </ul> |
| <p><b>Technical Skills and Procedures</b></p> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- injection techniques to the facial area including simulation exercises,</li> <li>- steroid injection for hypertrophic or keloidal scar,</li> <li>- filler injections for facial rhytids or small depressed scars.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to administer</p> <ul style="list-style-type: none"> <li>- botulinum toxin injections to glabella, forehead, periorbital, perioral and cervical areas for targeted muscle paralysis.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- laser resurfacing treatment for skin resurfacing including fractionated CO2, erbium, NdYAG (hair removal)</li> <li>- chemical peel for facial rejuvenation using trichloroacetic acid / glycolic acid,</li> <li>- micropigmentation techniques for aesthetic enhancement.</li> <li>- microneedling for refinement of mature scar.</li> </ul>   |
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# 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

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

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

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| <b>Topic</b>     | <b>BURNS</b>  |
| <b>Category</b>  | ST7/8 Final Years   |
| <b>Module 2</b>  | <b>Resuscitation and critical care</b>  |
| <b>Objective</b> | <i>Acquire competence in the initial resuscitation of a burn patient and ongoing critical care.</i> |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p>   |

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

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|  | <ul style="list-style-type: none"> <li>- adequate debridement of injured soft tissues to achieve a stable wound approaching elective conditions (including fascial excision),</li> <li>- planning of future soft tissue reconstruction.</li> </ul> <p>ADVANCED</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- endotracheal intubation,</li> <li>- bronchoscopy,</li> <li>- basic ventilator management,</li> <li>- amputation of non-salvageable limbs.</li> </ul> |
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| <b>Topic</b>           | <b>BURNS</b>  |
| <b>Category</b>        | ST7/8 Final Years   |
| <b>Module 3</b>        | <b>Early surgery</b>  |
| <b>Objective</b>       | <i>Acquires competence in the planning and execution of appropriate early surgery in burns.</i>   |
| <b>Knowledge</b>       | <p>BASIC</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- anatomy of skin,</li> <li>- classification of burn injury by zones,</li> <li>- benefits and disadvantages of both early excision and conservative management.</li> </ul> <p>INTERMEDIATE</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- options available for early surgery,</li> <li>- requirements of special sites,</li> <li>- principles of management of more complex injuries, including polytrauma,</li> <li>- planning and prioritising treatment within an MDT setting.</li> </ul> <p>ADVANCED</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- management of more complex injuries, and polytrauma,</li> <li>- surgical management of the burn,</li> <li>- principles and use of dermal and epidermal substitutes,</li> <li>- principles of cell culture.</li> </ul> |
| <b>Clinical Skills</b> | <p>BASIC</p> <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- clinically assesses burn injuries and demonstrates recognition of injury patterns.</li> <li>- use simple management techniques including use of appropriate dressings,</li> <li>- prescribe appropriate antibiotics,</li> <li>- plan burn excision and grafting,</li> <li>- use of epidermal substitutes such as Biobrane.</li> </ul> <p>INTERMEDIATE</p>  |

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|  | <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- formulate management algorithms for the common patterns of burn injury,</li> <li>- plan total and staged burn excision and grafting,</li> <li>- apply psychological assessment tools for evaluation of psychological needs (patient questionnaires).</li> </ul> <p>ADVANCED</p> <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- formulate management algorithms for complex burn injuries,</li> <li>- 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,</li> <li>- manage and lead the multi-disciplinary teams in respect of provision of psycho-social care</li> <li>- 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.</li> </ul> |
| <b>Technical Skills and Procedures</b> | <p>BASIC</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- dressings care,</li> <li>- skin grafts of small to moderate areas.</li> </ul> <p>INTERMEDIATE</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- skin grafts of large areas,</li> <li>- plan and raise flaps where grafts are not appropriate,</li> <li>- early excision of paediatric burns to prevent systemic upset.</li> </ul> <p>ADVANCED</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- resurfacing procedures using temporary skin cover,</li> <li>- resurfacing using skin substitutes,</li> <li>- limb amputations.</li> </ul>   |
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| <b>Topic</b>     | <b>BURNS</b>  |
| <b>Category</b>  | ST7/8 Final Years   |
| <b>Module 4</b>  | <b>Late surgery</b>   |
| <b>Objective</b> | <i>Acquire competence in later burn management including the planning and execution of reconstructive surgery.</i>  |
| <b>Knowledge</b> | <p>BASIC</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- anatomy of skin and soft tissues,</li> <li>- pathophysiology of hypertrophic scars and keloids,</li> <li>- principles of scar management,</li> </ul> |

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|  | <ul style="list-style-type: none"> <li>- effect of growth on burn scars,</li> <li>- use of grafts and local flaps.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- indications for use of skin substitutes, distant flaps and free flaps,</li> <li>- 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.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- principles of management of more complex injuries,</li> <li>- surgical options for late reconstruction,</li> <li>- novel therapies.</li> </ul>  |
| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- clinically assess burn scars and contractures demonstrating recognition of injury patterns,</li> <li>- use simple management techniques including use of splints and pressure garments,</li> <li>- plan release of burn scars using grafting and local flaps.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- formulate management algorithms for the common patterns of burn scarring,</li> <li>- plan for the use of skin substitutes, distant flaps and free flaps.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- describe detailed management algorithms for complex burn injuries,</li> <li>- show understanding of the complexities of burn injury reconstruction in patients with polytrauma and significant co-morbidities.</li> </ul> |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to perform burn scar grafting and local flaps including the Z-plasty and its variations.</p> <p><b>INTERMEDIATE</b><br/>Should be able to use skin substitutes and distant flaps of small and medium areas.</p> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- resurfacing with skin substitutes, distant flaps and free flaps of medium and large areas.</li> <li>- late major amputations.</li> </ul>   |

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| <b>Topic</b>    | <b>BURNS</b>      |
| <b>Category</b> | ST7/8 Final Years |



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| <b>Module 5</b>                        | <b>Infection and other complications</b>  |
| <b>Objective</b>                       | <i>Acquire competence in the diagnosis and management of burn infections and other complications</i>  |
| <b>Knowledge</b>                       | <p><b>BASIC</b><br/>Should demonstrate knowledge of the microbiology of burns.</p> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- metabolic derangement occurring in the burn patient,</li> <li>- concept and practice of antibiotic stewardship.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- antibiotic and antiseptic regimens and their rationale,</li> <li>- controversies regarding metabolic management,</li> <li>- multi-organ effects and systemic disturbance caused by burns.</li> </ul>                |
| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>Should demonstrate ability to undertake wound assessment.</p> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability for the clinical assessment and management algorithms for the infections and other burn complications.</p> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- clinically assess the unstable complex burn patient</li> <li>- make decisions on appropriate management issues.</li> <li>- interpret the range of investigations in the unstable complex burn patient to formulate management plans.</li> <li>- manage the iatrogenic injury.</li> </ul> |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to undertake surgical management of wound infection.</p> <p><b>INTERMEDIATE</b><br/>Should be able to perform radical excision of burn wound for infection.</p> <p><b>ADVANCED</b><br/>Should be able to perform amputation and other life-saving surgery in the case of infection and other complications.</p>  |
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| <b>Topic</b>     | <b>BURNS</b>  |
| <b>Category</b>  | ST7/8 Final Years   |
| <b>Module 6</b>  | <b>Paediatric burns</b>   |
| <b>Objective</b> | <i>Acquire competence in the diagnosis and management of paediatric burns and the recognition of the need for multidisciplinary management.</i> |

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| <b>Knowledge</b>                       | <p><b>BASIC</b><br/>The knowledge requirements are as per modules 1-5, in the context of the paediatric patient.<br/>Should demonstrate knowledge</p> <ul style="list-style-type: none"> <li>- as defined by PALS/APLS,</li> <li>- paediatric fluid regimens,</li> <li>- toxic shock syndrome,</li> <li>- non-accidental injury.</li> </ul> <p><b>INTERMEDIATE.</b><br/>As per modules 1-5, in the context of the paediatric patient.<br/>Demonstrates knowledge of PHDU practices.</p> <p><b>ADVANCED</b><br/>As per modules 1-5, in the context of the paediatric patient.<br/>Should demonstrate knowledge</p> <ul style="list-style-type: none"> <li>- other child protection issues.</li> <li>- PICU practices</li> </ul> |
| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>As per modules 1-5, in the context of the paediatric patient.<br/>Works with other agencies in the event of non-accidental injury.</p> <p><b>INTERMEDIATE</b><br/>As per modules 1-5, in the context of the paediatric patient.<br/>Works with the paediatric elements of the MDT.<br/>Applies the law in respect of non-accidental injury and communicates with appropriate parties.</p> <p><b>ADVANCED</b><br/>As per modules 1-5, in the context of the paediatric patient.</p>   |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>As per modules 1-5, in the context of the paediatric patient.<br/>Should be able to apply Biobrane and similar dressings.</p> <p><b>INTERMEDIATE</b><br/>As per modules 1-5, in the context of the paediatric patient.<br/>Should be able to perform early excision of burns to prevent systemic upset.</p> <p><b>ADVANCED</b><br/>As per modules 1-5, in the context of the paediatric patient.</p>   |
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## 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

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

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

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

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

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

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|  | and bilateral cleft lip and palate, closure of the nasal layer.<br><br>ADVANCED<br>Should be able to perform <ul style="list-style-type: none"> <li>- repair of the palate and associated involved structures according to one of the currently accepted techniques (complete within timely manner),</li> <li>- muscle dissection, and demonstrate the vascular pedicle in repeated fashion'</li> <li>- adaptations of the standard procedure for anatomical variation.</li> </ul> |
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| <b>Topic</b>     | <b>CLEFT</b>  |
| <b>Category</b>  | ST7/8 TIG Fellows   |
| <b>Module 4</b>  | <b>Secondary speech surgery</b>   |
| <b>Objective</b> | <i>To develop competence in the management of speech disorders associated with cleft palate and related disorders</i>   |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- the surgical anatomy, pathological anatomy and physiology of palatal function and abnormalities after cleft closure, including the pathophysiology of velopharyngeal incompetence (VPI).</li> <li>- the feeding mechanisms and relationship of infant feeding patterns to later speech development,</li> <li>- the physiology of the middle ear, Eustachian tube and causes of deafness in the cleft patient,</li> <li>- the clinical and investigative tools for examining speech development,</li> <li>- the place of surgical and orthodontic assistance to treatment of speech disorder</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to describe:</p> <ul style="list-style-type: none"> <li>- the range of normal speech development mechanisms and how these are at risk in cleft disorders,</li> <li>- the impact of chronic otitis media on speech skills at school entry</li> <li>- the techniques used by speech and language therapists inputting into cleft management, and</li> <li>- the operations available for the amelioration of speech disorders including VPI.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to describe:</p> <ul style="list-style-type: none"> <li>- the indications for investigation of speech disorder, methods and limitations,</li> <li>- the radiation protection protocols linked to such investigations, and</li> <li>- adult communication problems related to previous cleft palate repair and previous surgery for VPI.</li> </ul> |



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| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>Should have ability to</p> <ul style="list-style-type: none"> <li>- elicit speech disorders</li> <li>- liaise with Speech Therapists.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should have ability to</p> <ul style="list-style-type: none"> <li>- interpret findings of nasendoscopy,</li> <li>- assess likelihood of patient co-operation with nasendoscopy,</li> <li>- formulate a treatment plan based on the nasendoscopy findings</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to:</p> <ul style="list-style-type: none"> <li>- interpret an audiogram and tympanometry study,</li> <li>- describe the principles of brain stem evoked response audiometry,</li> <li>- and formulate an appropriate referral based on clinical history and audiogram.</li> </ul> |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Not applicable.</p> <p><b>INTERMEDIATE</b><br/>Should be able to perform:</p> <ul style="list-style-type: none"> <li>- nasendoscopy in the diagnosis of speech disorder.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform:</p> <ul style="list-style-type: none"> <li>- skilful dissection of a previously repaired cleft palate as part of a correction for speech disorder</li> <li>- pharyngoplasty (various techniques).</li> </ul>  |
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| <b>Topic</b>     | <b>CLEFT</b>  |
| <b>Category</b>  | ST7/8 TIG Fellows   |
| <b>Module 5</b>  | <b>Dento-alveolar defect including alveolar bone grafting</b>   |
| <b>Objective</b> | <i>To develop competence in the management of alveolar defects associated with cleft lip and palate.</i>  |
| <b>Knowledge</b> | <p><b>BASIC:</b><br/>Should be able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>- the evolution of secondary dentition,</li> <li>- the clinical and investigative tools available to the orthodontist,</li> <li>- the related investigations and the basis for treatment of the secondary dentition, and</li> <li>- the anatomy of various potential sites for cancellous bone graft harvesting</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to describe:</p> |

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|  | <ul style="list-style-type: none"> <li>- options and patient preferences for orthodontic treatment.</li> <li>- indications for pre-surgical orthodontic treatment,</li> <li>- the role of Paediatric Dentists including the basics of oral and dental hygiene,</li> <li>- the use of synthetic substitutes in dento-alveolar surgical practice, and</li> <li>- the methods of assessment of success of bone grafting, with scoring techniques and relevant background in reasonable outcomes.</li> </ul> <p>ADVANCED:<br/>Should be able to describe:</p> <ul style="list-style-type: none"> <li>- overview of surgical aspects of stomatological practice</li> <li>- principles of restorative dentistry, and role of such care within the holistic management of patients.</li> </ul> |
| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>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><b>INTERMEDIATE</b><br/>Should be able to:</p> <ul style="list-style-type: none"> <li>- liaise appropriately with Orthodontic colleagues, and</li> <li>- liaise with and refer to Paediatric and Restorative Dental colleagues.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to devise complete management plan for the preoperative and postoperative care of the patient undergoing alveolar bone grafting.</p>   |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to perform low scar access with harvest of iliac bone graft.</p> <p><b>INTERMEDIATE</b><br/>Should be able to perform bone grafting of the alveolus.</p> <p><b>ADVANCED</b><br/>Should be able to perform closure of an alveolar fistula with appropriate technique.</p>   |
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| <b>Topic</b>     | <b>CLEFT</b>   |
| <b>Category</b>  | ST7/8 TIG Fellows  |
| <b>Module 6</b>  | <b>Orthognathic surgery / Working with the Cleft MDT</b>   |
| <b>Objective</b> | <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> |

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| <p><b>Knowledge</b></p>       | <p><b>BASIC</b><br/>Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>- the range of residual deformities that pertain at the cessation of facial growth,</li> <li>- the nasal septal deformities associated with clefting,</li> <li>- the self-image problems extending into adult life,</li> <li>- National guidelines for the diagnosis, treatment and follow up of cleft patients.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate understanding of</p> <ul style="list-style-type: none"> <li>- the role of the orthodontist in cleft care,</li> <li>- the surgical principles of orthognathic appliances and their use in practice, and</li> <li>- NICE Improving Outcomes guidance and Peer review.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- the surgical anatomy and pathological anatomy of the residual deformities of facial growth,</li> <li>- the principal methods of use in orthognathics including distraction osteogenesis,</li> <li>- methodology for research and audit with respect to cleft practice in local, national and international settings.</li> </ul> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- 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,</li> <li>- the processes by which an individual can successfully adjust to disfigurement and explain how the multidisciplinary team can assist with that process.</li> </ul> |
| <p><b>Clinical Skills</b></p> | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- assemble appropriate professionals to solve adults, concerns,</li> <li>- communicate and refer within the specialist MDT.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- undertake orthodontic measurement of mid-facial growth,</li> <li>- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues, and</li> <li>- analyse and develop diagnostic and surgical planning within the context of an MDT, and</li> <li>- lead clinical discussion of cleft-related disorders for neonate, infant, pre-school, and later ages following consultations</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- undertake appropriate referral and liaison with Orthodontists,</li> <li>- to plan a program of orthognathic surgery including distraction osteogenesis,</li> <li>- to discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent, and</li> </ul>  |

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|  | - to lead whole clinic process for an entire MDT session                                |
| <b>Technical Skills and Procedures</b> | BASIC<br>Not applicable<br>INTERMEDIATE<br>Not applicable<br>ADVANCED<br>Not applicable |

## 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.

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

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|   | <p>guiding patient decision-making regarding choices available and timing of those treatments.</p> <ul style="list-style-type: none"> <li>- 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.</li> </ul> |
| <p><b>Technical Skills and Procedures</b></p> | <p><b>BASIC</b><br/>Should be able to stabilise the complex wound patient for safe transfer to specialist centre.<br/>Should be able to apply negative pressure dressing.</p> <p><b>INTERMEDIATE</b><br/>Should be able to perform primary debridement and application of temporary wound dressings in theatre.</p> <p><b>ADVANCED</b><br/>Should be able to perform appropriate reconstruction of soft tissue defect using the range of available reconstructive techniques.</p>   |
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# 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

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| <b>Topic</b>     | <b>CRANIOFACIAL</b>   |
| <b>Category</b>  | ST 7& 8 Final Years   |
| <b>Module 1</b>  | <b>General Principles</b>   |
| <b>Objective</b> | <p><i>Principles of the MDT and the 'Craniofacial Assessment'</i><br/> <i>e.g. Psychology of facial difference and speech and language assessment</i></p> <p><i>Anatomy &amp; Embryology of the craniofacial complex</i><br/> <i>Cephalometrics and facial analysis</i><br/> <i>Orthognathic surgery relating to craniofacial syndromes</i><br/> <i>Craniofacial radiology</i><br/> <i>Trauma</i><br/> <i>Emergency procedures</i><br/> <i>Surgical approaches to the craniofacial complex</i><br/> <i>Craniofacial aesthetic surgery</i></p>   |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>         Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>- 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</li> <li>- multidisciplinary assessment of 'The Craniofacial Patient' (parameters including visual, audiological, airway, speech, feeding, psychological and neurological),</li> <li>- 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,</li> <li>- criteria that would constitute grounds for admission to Intensive Care Unit,</li> <li>- issues of non-accidental injury and child protection, and the referral pathways for protection of the 'at-risk' child.</li> </ul> <p>Should be able to describe the management of extravasation injuries</p> <p><b>INTERMEDIATE</b><br/>         Should be able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>- cephalometrics: skeletal and dental occlusal relationships, SNA angle, SNB angle, facial reference points</li> <li>- 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.</li> <li>- distraction osteogenesis: history and application: mandible, alveolus, midface, orbit and cranium.</li> </ul> |



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|                               | <p><b>ADVANCED</b><br/>Should be able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>- anatomy of surgical approaches to craniofacial skeleton and relevant local flaps (temporalis, superficial temporal etc),</li> <li>- facial analysis: choice of camera systems, CT, MRI and software analysis in surgical planning,</li> <li>- Craniofacial Radiology – recognition of tumour and threats to neurological function,</li> <li>- the multidisciplinary assessment of ‘The Craniofacial Patient’: specific tests – VEPs, sleep studies and psychological assessment scales,</li> <li>- 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,</li> <li>- the processes by which an individual can successfully adjust to disfigurement, and how the multidisciplinary team can assist with that process.</li> </ul>  |
| <p><b>Clinical Skills</b></p> | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- care for the pre and post-operative patient/child undergoing craniofacial surgery including assessment for anaesthetic risk factors, postoperative fluid management, antibiotic prescribing,</li> <li>- manage the airway both in the peri-operative environment, and post-operatively.</li> <li>- take informed consent for the procedures covered in this module,</li> <li>- present cases within the Craniofacial MDT</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- counsel parents of new patients including those following antenatal scan diagnosis for relevant syndromes.</li> <li>- apply psychological assessment tools for evaluation of psychological needs (patient questionnaires),</li> <li>- plan appropriate treatment schedule within the context of the craniofacial MDT</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to:</p> <ul style="list-style-type: none"> <li>- formulate a management plan within the MDT as a fully integrated member/leader of the team and be able to communicate with patients/families,</li> <li>- manage and lead the multi-disciplinary teams in respect of provision of psycho-social care,</li> <li>- 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,</li> <li>- maintain and demonstrate the skills articulated in APLS/PALS, and</li> <li>- recognise signs of non-accidental injury, risk factors, family pathology.</li> </ul> |

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| <p><b>Technical Skills and Procedures</b></p> | <p><b>BASIC</b><br/> Trauma:<br/> Should be able perform tracheostomy (emergency and percutaneous) and nasal packing for epistaxis</p> <p><b>INTERMEDIATE</b><br/> Should be able to perform</p> <ul style="list-style-type: none"> <li>- intermaxillary fixation</li> <li>- emergency management of retrobulbar haemorrhage</li> <li>- emergency management of elevated ICP and/or intracranial haemorrhage,</li> <li>- various surgical approaches to the craniofacial skeleton: coronal and upper and lower buccal sulcus incisions.</li> </ul> <p><b>ADVANCED</b><br/> Should be able to perform<br/> Orthognathic surgery relating to craniofacial syndromes.<br/> 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.<br/> Indications compared to traditional techniques.<br/> Device selection and application of chosen distraction device at all levels of the craniofacial skeleton. Knowledge of outcome studies.</p> <p>Implants and prostheses.<br/> 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.<br/> Endoscopic techniques, subperiosteal surgery, genioplasty, advanced rhinoplasty.</p> |

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| <b>Topic</b>                           | <b>CRANIOFACIAL</b>   |
| <b>Category</b>                        | ST 7&8 Final Years  |
| <b>Module 2</b>                        | <b>Craniosynostosis</b>   |
| <b>Objective</b>                       | <i>Management of single suture and syndromic craniosynostosis</i>   |
| <b>Knowledge</b>                       | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- surgical anatomy, pathological anatomy and pathophysiology of craniosynostosis,</li> <li>- common phenotypes and head shapes, and</li> <li>- positional vs synostotic plagiocephaly: torticollis.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- basic clinical genetics of craniosynostosis syndromes,</li> <li>- recognition of different syndromic craniosynostoses (Apert, Crouzon, Pfeiffer, Saethre-Chotzen, Carpenter, Muenke etc),</li> <li>- strategies for the management of intracranial hypertension and its multifactorial influences.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate detailed knowledge of:</p> <ul style="list-style-type: none"> <li>- protocols of surgical management (Multidisciplinary: ENT, Ophthalmology, Neurosurgery etc),</li> <li>- indications for intervention: crisis, urgent, elective, aesthetic – both functional and psychological,</li> <li>- indications and applications of distraction osteogenesis,</li> <li>- indications for FOR/Le Fort III, Monobloc and bipartition osteotomies, distraction vs bone graft techniques.</li> </ul> |
| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>Should be able to</p> <ul style="list-style-type: none"> <li>- explain to parents the challenges of these conditions at different stages of life from birth to adolescence,</li> <li>- describe the impact on the family of the birth of a child with a craniofacial anomaly and provide or arrange support.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should have ability to</p> <ul style="list-style-type: none"> <li>- manage globe subluxation,</li> <li>- manage the compromised airway,</li> <li>- recognise elevated ICP,</li> <li>- recognise complications of transcranial surgery,</li> <li>- apply psychological assessment tools for evaluation of psychological needs (patient questionnaires).</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- formulate plan for surgical correction of problems arising in patients with craniosynostosis, and</li> <li>- deploy the skills of the MDT appropriately.</li> </ul>  |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to close a coronal incision</p>  |

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|  | <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- harvesting techniques for autologous grafts including iliac crest bone, rib, costochondral and cranial bone.</li> <li>- canthopexies, canthoplasties and eyelid balance, and</li> <li>- coronal flaps</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- major segmental osteotomies and advancements of the craniofacial complex,</li> <li>- distraction osteogenesis,</li> <li>- cranioplasties,</li> <li>- fronto-orbital surgery,</li> <li>- frontofacial surgery</li> </ul> |
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| <b>Topic</b>     | <b>CRANIOFACIAL</b>   |
| <b>Category</b>  | ST 7&8 Final Years  |
| <b>Module 3</b>  | <b>Craniofacial tumours in adults and children</b>  |
| <b>Objective</b> | <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>  |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should be able to describe common adult tumours eg BCC, SCC, melanoma, and their pathology, natural history and treatment protocols</p> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- other adult tumours – eg NF, neuroblastoma with their pathology, natural history and treatment protocols,</li> <li>- common paediatric tumours eg NF, fibrous dysplasia, teratomas and their pathology, natural history and treatment protocols,</li> <li>- differences in clinical behaviours between adult and paediatric tumours.</li> <li>- adjunctive techniques eg interventional radiology and IMRT and chemo-irradiation,</li> <li>- role of palliation in adults and children</li> <li>- management of end of life,</li> <li>- complex craniofacial vascular anomalies and malformations, and</li> <li>- role of the surgeon in the MDT</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- applied surgical anatomy, segmental resection and reconstruction</li> </ul> |

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|  | <p>(alloplastic, autologous, microsurgical), functional preservation, aesthetic techniques,</p> <ul style="list-style-type: none"> <li>- rare transcranial tumours and related contemporary literature,</li> <li>- management of the facial nerve in adult and paediatric tumours with indications for facial nerve sacrifice and rehabilitation</li> </ul>  |
| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>Should be able to present cases to the MDT</p> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to diagnose, investigate the conditions covered in this module.<br/>Should demonstrate ability to counsel patients and deliver bad news concerning adult and paediatric patients.</p> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- formulate treatment plans for the conditions covered in this module</li> <li>- lead decision making in the MDT,</li> <li>- co-ordinate the patient treatment pathway.</li> </ul>  |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to perform reconstructive techniques including grafts and local flaps</p> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- elevation 'workhorse' free flaps including latissimus dorsi and radial forearm flap (includes these exercises performed as surgical simulation)</li> <li>- manage Le Fort I down-fracture for skull base access</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- accessing craniofacial skeleton via various approaches (see module 1),</li> <li>- planning and resecting of craniofacial vascular lesions,</li> <li>- various approaches to the orbit (tumours)</li> <li>- reconstruction with free perforator flaps or composite free tissue transfer,</li> <li>- operating within a multidisciplinary team,</li> </ul> |
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| <b>Topic</b>     | <b>CRANIOFACIAL</b>  |
| <b>Category</b>  | ST7 & 8 Final Years  |
| <b>Module 4</b>  | <b>Craniofacial syndromes of tissue deficiency</b>   |
| <b>Objective</b> | <i>Acquire competence in the management of hemifacial microsomia, Treacher Collins syndrome, mandibular deficiencies - Pierre Robin, Romberg's disease, morphoea, craniofacial clefts &amp; encephalocoels, Binder's syndrome, holoprosencephaly, arrhinia</i> |
| <b>Knowledge</b> | BASIC  |

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

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| <b>Topic</b>                           | <b>CRANIOFACIAL</b>   |
| <b>Category</b>                        | ST7&8 Final Years   |
| <b>Module 5</b>                        | <b>Craniofacial overgrowth syndromes</b>  |
| <b>Objective</b>                       | <i>Acquire competence in the management of hemifacial hypertrophy, facial infiltrating lipomatosis, tissue overgrowth secondary to vascular malformations, Beckwith Wiedemann Syndrome, proboscis</i>   |
| <b>Knowledge</b>                       | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- hamartomas, teratomas, and dysplasias</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- differential diagnosis of overgrowth asymmetries</li> <li>- radiological diagnosis</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- techniques for facial nerve preservation</li> <li>- indications for surgery within the MDT setting</li> </ul> <p>Should demonstrate knowledge of the planes of facial resuspension.</p> |
| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>Should demonstrate ability to manage patients with reference to</p> <ul style="list-style-type: none"> <li>- maintenance of vital functions including airway, feeding etc</li> <li>- preservation of oral, nasal, palpebral sphincters</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to undertake a clinical assessment of the craniofacial conditions covered in this module.</p> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- formulate a treatment plan for the conditions covered in this module.</li> </ul>  |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Not applicable</p> <p><b>INTERMEDIATE</b><br/>Should be able to perform emergency procedures (see module 1)</p> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- 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</li> <li>- tissue reduction with preservation of neuromuscular function</li> </ul>  |

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| <b>Topic</b>           | <b>CRANIOFACIAL</b>   |
| <b>Category</b>        | ST 7&8 Final Years  |
| <b>Module 6</b>        | <b>Orbital surgery</b>  |
| <b>Objective</b>       | <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>  |
| <b>Knowledge</b>       | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- applied anatomy of the orbit and contents</li> <li>- examination of the eye and basic vision</li> <li>- eyelid anatomy and eyelid malposition</li> <li>- growth of the orbit</li> <li>- definition of terms eg hypertelorism, dystopia, telecanthus</li> <li>- differential diagnosis/genetics of hypertelorism syndromes</li> <li>- MDT assessment of hypertelorism syndromes</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- visual physiology, squint &amp; principles of strabismus surgery</li> <li>- medial and lateral canthal fixation methods</li> <li>- orbital Prostheses – types, indications</li> <li>- superior orbital fissure syndrome</li> <li>- orbital apex syndrome</li> <li>- relative afferent papillary defect</li> <li>- retrobulbar haemorrhage</li> <li>- reasons and timing for orbital translocation</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- orbital osteotomies</li> <li>- microphthalmos – orbital expansion (expanders &amp; osteomies)</li> <li>- impact on orbital translocation on vision</li> <li>- use of Box, Bipartition and advancement osteotomies of the orbit</li> </ul> |
| <b>Clinical Skills</b> | <p><b>BASIC</b><br/>Emergencies – see module 1</p> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- plan orbital osteotomies</li> <li>- formulate a management plan with respect to both techniques and timing</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- formulate management plans with Ophthalmology and Neurosurgery in the context of the MDT</li> <li>- plan minimal access and endoscopic approaches</li> </ul>   |



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| <b>Technical Skills and Procedures</b> | <b>BASIC</b><br>Not applicable  |
|  | <b>INTERMEDIATE</b><br>Should be able to perform split calvarial bone graft harvest and fixation of bone graft  |
|  | <b>ADVANCED</b><br>Should be able to perform <ul style="list-style-type: none"> <li>- minimal access incisions</li> <li>- box osteotomies</li> <li>- facial bipartition</li> <li>- vertical orbital dystopia correction</li> <li>- orbital reconstruction – autologous or alloplastic</li> <li>- transcranial and subcranial orbital expansion</li> <li>- Mommaerts osteotomies</li> <li>- orbital access approaches (tumours)</li> </ul> |
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## Ear Reconstruction

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

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| <b>Topic</b>                  | <b>EAR RECONSTRUCTION</b>  |
| <b>Category</b>               | ST7/8 Final Years  |
| <b>Module (Single module)</b> | <b>Ear deformities and ear reconstruction</b>  |
| <b>Objective</b>              | <i>Competence in the diagnosis and management of all aspects of ear deformities and ear reconstruction</i>   |
| <b>Knowledge</b>              | <p><b>BASIC</b><br/>Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>- anatomy and embryology of the external, middle and inner ear,</li> <li>- 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,</li> <li>- various classifications of ear deformities including acquired ear deformities</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>- principles of osseointegration,</li> <li>- local and regional flaps around the ear including the scalp,</li> <li>- development of the mandible and syndromes associated with ear deformities,</li> <li>- different techniques of correcting the prominent ear principles of tissue expansion.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> |

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

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|  | <ul style="list-style-type: none"><li>- dissecting skin envelope, temporalis fascial flap raising and inseting,</li><li>raising other local flaps for skin cover of framework, conchal cartilage graft harvest, carving and inseting into defect,</li><li>- various operations for ear lobe reconstruction.</li></ul> |
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# 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

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

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

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

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

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| <b>Topic</b>    | <b>GENITOURINARY RECONSTRUCTION</b> |
| <b>Category</b> | ST7/8 Later Years and Interface     |
| <b>Module 3</b> | <b>Genital reassignment</b>         |



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| <b>Objective</b>       | <i>Acquire competence in the management of gender reassignment.</i>   |
| <b>Knowledge</b>       | <p><b>BASIC</b><br/>Should demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>- definition of transsexualism.</li> <li>- aetiology sex ratio.</li> <li>- diagnosis of gender dysphoria</li> <li>- problems associated with gender dysphoria - psychosocial, physical support for surgery, financial support for surgery.</li> <li>- MDT.</li> <li>- Requirement for NHS Management:             <ol style="list-style-type: none"> <li>4. Live as other gender for two years</li> <li>5. Hormones</li> <li>6. Surgery</li> </ol> </li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of techniques available for male to female reassignment:</p> <ul style="list-style-type: none"> <li>- penile flap – glans reduced as clitoris, penile skin as flap for vagina, scrotum for labia / clitoral hood – usually two stage</li> <li>- modified McIndoe – SSG or FTSG from penis for vagina.</li> <li>- others – Bowel for vagina</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of techniques available for female to male reassignment</p> <ul style="list-style-type: none"> <li>- mastectomy.</li> <li>- 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"> <li>- random pattern abdominal tube pedicle</li> <li>- groin flap</li> <li>- SIEA flap</li> <li>- gracillis flap</li> <li>- radial forearm flap</li> </ul> </li> <li>- urethral reconstruction options,             <ul style="list-style-type: none"> <li>- SSG</li> <li>- FTSG</li> <li>- transplantation of urethra</li> <li>- tubed bladder wall</li> </ul> </li> <li>- ancillary procedures             <ul style="list-style-type: none"> <li>- testicular implants</li> <li>- vaginectomy</li> <li>- facial feminising techniques</li> <li>- breast augmentation</li> </ul> </li> </ul> |
| <b>Clinical Skills</b> | <p><b>BASIC</b><br/>Ability to demonstrate</p> <ul style="list-style-type: none"> <li>- working within an MDT and the ability to assess the psychological state of the patient.</li> </ul> <p><b>INTERMEDIATE</b><br/>Ability to demonstrate</p> <ul style="list-style-type: none"> <li>- 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</li> </ul>  |

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|   | <p>treatments.</p> <p><b>ADVANCED</b><br/>Ability to manage and lead</p> <ul style="list-style-type: none"> <li>- 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 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.</li> </ul> |
| <p><b>Technical Skills and Procedures</b></p> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- raising local flaps</li> <li>- insertion of testicular prosthesis.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- elevation of complex flaps including, groin flap, radial forearm flap, abdominal tubed pedicle, SIEA flap and gracilis flap.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- specific operations for gender reassignment</li> </ul>  |

# 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

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

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

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

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|   | <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- assess and manage patients presenting with locally advanced disease</li> <li>- interpret CT, MRI &amp; PET scans,</li> <li>- recognise where further pathology or imaging studies may be required and request these appropriately,</li> <li>- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate skills of</p> <ul style="list-style-type: none"> <li>- communication of a cancer diagnosis with patients,</li> <li>- discussion of complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent,</li> <li>- analysis and diagnostic synthesis, judgement and surgical planning pertaining to conditions described in this module.</li> <li>- communication within the MDT.</li> </ul>  |
| <p><b>Technical Skills and Procedures</b></p> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- incision biopsy of lesion</li> <li>- excision biopsy of lesion</li> <li>- FNA / core sample of lymph node</li> <li>- Lymph node sampling [in centres where SNB not available]</li> <li>- local flap reconstruction (rotation / transposition / advancement)</li> <li>- split and full thickness skin grafts.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- sentinel lymph node biopsy, dual modality and blue dye only</li> <li>- selective / modified radical neck dissection</li> <li>- elevation of regional flaps</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- radical or extended neck dissection</li> <li>- reconstruction with regional flaps</li> <li>- free flap surgery</li> <li>- 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.</li> </ul> |
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| <b>Topic</b>     | <b>HEAD &amp; NECK SURGERY</b>  |
| <b>Category</b>  | ST7/8 Final Years and TIG Fellows   |
| <b>Module 3</b>  | <b>Non skin-related neoplasia of the head &amp; neck</b>  |
| <b>Objective</b> | <i>Competence in the diagnosis, assessment and management of all types of non-skin related cancer of the head and neck.</i>   |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- epidemiology</li> <li>- types of cancer – oral cavity, nasopharynx, oropharynx, larynx,</li> <li>- reconstructive options</li> <li>- TNM Staging of skin cancer</li> <li>- prognostic factors (tumour and patient related) and implications for patient treatment recommendations</li> <li>- cancer network guidelines in treatment of non-skin cancers of the head &amp; neck</li> <li>- understanding the MDT</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- indications for non-surgical treatment</li> <li>- adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies.</li> <li>- cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis.</li> <li>- palliative treatment options for head &amp; neck cancer.</li> <li>- hospice care</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- association between specific high risk benign skin conditions with associated increased skin cancer risk</li> <li>- important adjuvant and neo-adjuvant historical and current trials (clinical/surgical, chemotherapy, radiotherapy, hormonal and biological).</li> <li>- role of HPV virus in cancer aetiology</li> </ul> |

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



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| <b>Topic</b>     | <b>HEAD &amp; NECK SURGERY</b>  |
| <b>Category</b>  | ST7/8 Final Years and TIG Fellows   |
| <b>Module 4</b>  | <b>Techniques for reconstruction of the head &amp; neck</b>   |
| <b>Objective</b> | <i>Acquire competence in the planning, execution and management of appropriate soft tissue reconstruction of head &amp; neck defects.</i>   |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- classification of flaps (random v axial / muscle flap - Mathes and Nahai / type of tissue being transferred)</li> <li>- factors affecting outcome in flap surgery (patient related, operative, adjuvant therapy related),</li> <li>- principles of flap surgery (replace “like with like”, reconstructive units, back-up plan and “life boat”, donor site considerations)</li> <li>- principles of microsurgery</li> <li>- anatomy of perforators and angiosomes – relevant to planning of local, regional and distal flaps.</li> <li>- anatomy of local, regional and free flaps suitable for head &amp; neck reconstruction.</li> <li>- advantages and disadvantages of local, regional and free flaps in the head &amp; neck,</li> <li>- appropriate use of local, regional and free flaps in the head &amp; neck,</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- relevant surgical anatomy and neurovascular supply of flaps used in head &amp; neck reconstruction</li> <li>- pre-operative investigations for specific flaps</li> <li>- ability to interpret angiographic abnormalities when planning reconstruction,</li> <li>- complications of autologous tissue reconstruction including donor site morbidity</li> <li>- post-operative flap monitoring techniques</li> <li>- airway management of the head &amp; neck,</li> <li>- 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,</li> <li>- planning and prioritising treatment within the head &amp; neck MDT setting,</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> |

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|                         | <ul style="list-style-type: none"> <li>- assessment of outcome</li> <li>- long term outcomes of head &amp; neck reconstruction</li> <li>- flap salvage and options following failure,</li> <li>- 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.</li> <li>- outline the process by which an individual can successfully adjust to disfigurement and explain how the multidisciplinary team can assist with that process.</li> </ul>  |
| <b>Clinical Skills</b>  | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- take focused history eliciting factors important for decisions regarding suitability / type of reconstruction,</li> <li>- clinically assess the soft tissue defect,</li> <li>- keep contemporaneous and appropriate record,</li> <li>- demonstrate simple management techniques including use of appropriate dressings,</li> <li>- plan both local and free flaps appropriately for defect,</li> <li>- co-ordinate soft tissue reconstruction in conjunction with ablative team.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- counsel patient regarding advantages and disadvantages of reconstruction - specifically setting realistic expectations, reconstruction as a process, template in-patient stay and complications,</li> <li>- take informed consent and participate in joint decision-making.</li> <li>- manage patients in post-operative period,</li> <li>- manage complications of surgery applicable to the clinic setting.</li> <li>- use psychological assessment tools for evaluation of psychological needs (patient questionnaires).</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- clinically assess complex reconstructive requirements and make decisions on appropriate management,</li> <li>- interpret investigations and formulate management plans,</li> <li>- 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,</li> <li>- manage and lead multi-disciplinary teams in respect of provision of psycho-social care,</li> <li>- 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.</li> </ul> |
| <b>Technical Skills</b> | <b>BASIC</b>  |

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| <b>and Procedures</b> | <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- exposure of vessels</li> <li>- positioning of patient on operating table</li> <li>- protection of pressure areas.</li> <li>- prevention of nerve injuries / neurapraxia.</li> <li>- skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis.</li> <li>- selection / arrangement of appropriate level of post-operative care.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- pre-operative marking of patient</li> <li>- raising range of pedicled autologous flaps</li> <li>- in-setting of flap.</li> <li>- harvesting vein graft</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- microvascular anastomoses</li> <li>- flap salvage for failing flaps</li> <li>- flap shaping techniques</li> <li>- flap revision techniques</li> </ul> |
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| <b>Topic</b>     | <b>HEAD &amp; NECK SURGERY</b>   |
| <b>Category</b>  | ST7/8 Final Years and TIG Fellows  |
| <b>Module 5</b>  | <b>Reconstruction of specific head and neck sites</b>  |
| <b>Objective</b> | <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>   |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- anatomy of tissues suitable for planning of local, regional and distal flaps to specific sites in the head &amp; neck,</li> <li>- vascular anatomy relevant to planning of local, regional and distal flaps to specific sites in the head &amp; neck,</li> <li>- recognise the appropriate use, advantages and disadvantages of local, regional and free flaps in reconstruction of specific sites in the head &amp; neck</li> <li>- factors affecting outcome in flap surgery (patient-related, operative, adjuvant therapy-related).</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- airway management of the head &amp; neck</li> <li>- ability to interpret angiographic abnormalities when planning reconstruction of specific sites in the head and neck,</li> <li>- pre-operative investigations for specific flaps,</li> <li>- complications of autologous tissue reconstruction including donor site</li> </ul> |

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|  | <p>morbidity,<br/> - post-operative flap monitoring techniques,<br/> - planning and prioritising treatment within the head &amp; neck MDT setting.</p> <p>ADVANCED<br/> Should demonstrate knowledge of<br/> - long-term outcomes of head &amp; neck reconstruction,<br/> - assessment of outcome,<br/> - flap salvage and options following failure,<br/> - use of osseointegrated implants and head and neck prosthetics,<br/> - effects of radiotherapy.</p>  |
| <b>Clinical Skills</b>                 | <p>BASIC<br/> Should demonstrate ability to<br/> - take focused history eliciting factors important for decisions regarding suitability / type of reconstruction for a specific head and neck site,<br/> - clinically assess specific head and neck defects,<br/> - keep contemporaneous and appropriate records,<br/> - effect simple wound management techniques including use of appropriate dressings,<br/> - plan both local, regional and free flaps appropriate for specific defect,<br/> - demonstrate soft tissue reconstruction in conjunction with ablative team,</p> <p>INTERMEDIATE<br/> Should demonstrate ability to<br/> - discuss advantages and disadvantages of reconstruction - specifically setting of realistic expectation, reconstruction as a process, template in-patient stay and complications,<br/> - understand importance of informed consent and joint decision making,<br/> - manage complications of surgery in pre, peri and post-operative phases.</p> <p>ADVANCED<br/> Should demonstrate ability to<br/> - clinically assess complex reconstructive requirements and make decisions on appropriate management for specific sites in the head and neck,<br/> - interpret investigations to formulate management plan,<br/> - manage tissues previously treated with radiotherapy.</p> |
| <b>Technical Skills and Procedures</b> | <p>BASIC<br/> Should be able to perform<br/> - exposure of vessels,<br/> - positioning of patient on operating table,<br/> - protection of pressure areas,<br/> - prevention of nerve injuries / neurapraxia,<br/> - skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis regimens,<br/> - selection / arrangement of appropriate post-operative care.</p> <p>INTERMEDIATE<br/> Should be able to perform<br/> - pre-operative marking of patient,<br/> - raising local, regional and pedicled autologous flaps relevant to specific sites of the head and neck,</p>   |

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|  | <ul style="list-style-type: none"> <li>- in-setting of flap.</li> </ul> <p>ADVANCED</p> <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- treatment of specific sites of the head and neck following previous radiotherapy,</li> <li>- salvage surgery of specific sites of the head and neck,</li> <li>- microvascular anastomoses,</li> <li>- flap salvage for failing flaps,</li> <li>- flap revision techniques,</li> <li>- use of osseointegrated implants and facial prosthetics.</li> </ul> |
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| <b>Topic</b>           | <b>HEAD &amp; NECK SURGERY</b>  |
| <b>Category</b>        | ST7/8 Final Years and TIG Fellows   |
| <b>Module 6</b>        | <b>Facial reanimation</b>   |
| <b>Objective</b>       | <i>Competence in the diagnosis of facial palsy and management by both static and dynamic procedures as well as non-surgical treatments.</i>   |
| <b>Knowledge</b>       | <p>BASIC</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- epidemiology,</li> <li>- anatomy of the facial nerve,</li> <li>- aetiological causes of facial palsy,</li> <li>- prognostic factors and implications for patient treatment recommendations,</li> <li>- range of reconstructive options</li> </ul> <p>INTERMEDIATE</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- non-surgical treatments (Botox, biofeedback, electrical stimulation of facial musculature),</li> <li>- static sling procedures (tendon, fascia, artificial),</li> <li>- dynamic sling procedures (temporalis, masseter),</li> <li>- principles of facial nerve reconstruction (direct suturing, nerve grafting, cross facial nerve grafting).</li> </ul> <p>ADVANCED</p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- free muscle transfer techniques (cross facial nerve grafting, gracilis, pectoralis minor, rectus abdominis),</li> <li>- reconstructive aesthetic techniques (endoscopic browlift, facelift, upper &amp; lower blepharoplasties),</li> <li>- use of ancillary surgical techniques (autologous fat transfer, re-positioning parotid ducts etc),</li> <li>- cranial nerve transfers (hypoglossal, accessory).</li> </ul> |
| <b>Clinical Skills</b> | <p>BASIC</p> <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- take focused facial nerve related history eliciting factors localising site</li> </ul>   |

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|   | <p>of injury,</p> <ul style="list-style-type: none"> <li>- undertake competent facial nerve examination ,</li> <li>- initiate appropriate investigations (CT, MRI, EMG, nerve conduction studies).</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- interpret CT, MRI, EMG&amp; nerve conduction studies,</li> <li>- assess and manage patients presenting with locally advanced disease,</li> <li>- recognise where further investigations may be required and request these appropriately,</li> <li>- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- undertake analysis and diagnostic synthesis, judgement and surgical planning pertinent to facial palsy,</li> <li>- discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent.</li> </ul>   |
| <p><b>Technical Skills and Procedures</b></p> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- exploration, protection and identification of facial nerve branches,</li> <li>- direct repair of facial nerve,</li> <li>- nerve grafting of facial nerve,</li> <li>- techniques of Botox injection of face, techniques of biofeedback and electrical stimulation of facial musculature,</li> <li>- surgical access and identification of deep layers of the face.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- cross facial nerve grafting,</li> <li>- insertion of static slings,</li> <li>- dynamic slings (Temporalis, masseter).</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- free muscle tissue transfer techniques (gracilis, pectoralis minor, rectus abdominis),</li> <li>- cranial nerve transfers (hypoglossal, accessory),</li> <li>- ancillary reconstructive techniques (autologous fat transfer, re-positioning parotid ducts etc),</li> <li>- reconstructive aesthetic techniques (endoscopic browlift, facelift, upper &amp; lower blepharoplasties).</li> </ul> |
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## 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

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

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|  | <p>reconstruction: direct closure, skin graft, local and free flaps,<br/>- options of bone fixation, including internal versus external fixation.</p> <p>ADVANCED<br/>Should demonstrate knowledge of<br/>- role of major trauma centres,<br/>- management of multiply injured patient,<br/>- factors determining decision making in choice of flaps and tissue for soft tissue reconstruction.</p>   |
| <b>Clinical Skills</b>                 | <p>BASIC<br/>Should demonstrate ability to<br/>- take a focused history for lower limb injury,<br/>- clinically assess and undertake non-operative management of acute injury,<br/>- recognise life-threatening injuries,<br/>- examine to including assessment of severity of injury,<br/>- assess vascular status,<br/>- assess for the presence of compartment syndrome.</p> <p>INTERMEDIATE<br/>Should demonstrate ability to<br/>- examine neurological status of limb,<br/>- apply the management algorithms pertinent to the conditions covered in this module.</p> <p>ADVANCED<br/>Should be able to demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning pertaining to lower limb injury.</p> |
| <b>Technical Skills and Procedures</b> | <p>BASIC<br/>Should be able to perform<br/>- application of appropriate dressings in emergency room,<br/>- reduction of fracture in emergency department,<br/>- application of a plaster cast.</p> <p>INTERMEDIATE<br/>Should be able to measure compartment pressures and interpret results.</p> <p>ADVANCED<br/>Should be able to stabilise associated injuries and bleeding.</p>   |

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| <b>Topic</b>     | <b>LOWER LIMB</b>   |
| <b>Category</b>  | ST7 & 8 Final Years   |
| <b>Module 2</b>  | <b>Debridement, stabilisation and compartment syndrome</b>  |
| <b>Objective</b> | <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> |
| <b>Knowledge</b> | <p>BASIC<br/>Should demonstrate knowledge of<br/>- principles of fracture management,</p>   |



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

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

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|  | skeleton.  |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- direct closure,</li> <li>- skin graft,</li> <li>- temporary dressings – negative pressure and antibiotic bead pouch,</li> <li>- exposure of recipient vessels in leg.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- nerve repair (direct),</li> <li>- planning and raising appropriate fasciocutaneous flaps, both proximally and distally based,</li> <li>- raising gastrocnemius muscle flap for proximal third/knee defects,</li> <li>- performing most steps in the raising and anastomosing of free flaps,</li> <li>- harvesting of vein graft</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- raising and anastomosing ALT, LD and radial forearm free flaps under supervision,</li> <li>- harvesting a free fibula flap.</li> <li>- nerve repair using sural nerve graft.</li> <li>- using interposition vein grafts to perform anastomoses outside zone of injury.</li> </ul> |
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| <b>Topic</b>           | <b>LOWER LIMB</b>   |
| <b>Category</b>        | ST7 & 8 Final Years   |
| <b>Module 4</b>        | <b>Vascular injuries and amputation</b>   |
| <b>Objective</b>       | <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>  |
| <b>Knowledge</b>       | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- anatomy of vasculature, including well-known variations e.g. peronea magna,</li> <li>- response of vessels to injury and repair,</li> <li>- primary management of vascular injuries and the devascularised limb,</li> <li>- appropriate use of investigations,</li> <li>- timing of surgery for acutely ischaemic limb,</li> <li>- indications for amputation and the levels,</li> <li>- rehabilitation of amputation patients.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- role of vascular shunts,</li> <li>- role of angiography,</li> <li>- techniques of vessel repair,</li> <li>- challenges for primary amputation.,</li> <li>- how to deal with the nerves during amputation and the need for a myodesis,</li> <li>- role of adductor myodesis for transfemoral amputation.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- methods for secondary amputation for infection, failed reconstruction etc.,</li> <li>- how to manage the revascularised limb post-operatively,</li> <li>- pharmacological and non-pharmacological methods for the relief of pain, including phantom limb and neuropathic pain.</li> <li>- requirements of a good amputation stump to allow proper prosthesis fitting,</li> <li>- role of fillet of limb (foot) technique,</li> <li>- knowledge of need to reconstruct large veins proximal to trifurcation.</li> </ul> |
| <b>Clinical Skills</b> | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- control bleeding.</li> <li>- interpretation of angiograms.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- clinically assess and prepare management algorithms for the conditions covered in this module,</li> <li>- counsel a patient for limb amputation.</li> </ul>  |

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|   | <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- clinically assess complex injuries and make decisions on subsequent management,</li> <li>- interpret investigations and formulate management plan in secondary amputation e.g. CT, angiography etc.,</li> <li>- manage iatrogenic vessel injury.</li> </ul>  |
| <p><b>Technical Skills and Procedures</b></p> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- exposure of vessels,</li> <li>- insertion of shunts,</li> <li>- harvesting vein graft,</li> <li>- application of skin graft to amputation stump if required.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- vein graft for vascular injury,</li> <li>-uncomplicated transtibial amputation,</li> <li>-uncomplicated through knee and transfemoral amputation.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- repair of complex vessel defect,</li> <li>- continuation to suitable reconstruction of revascularised limb if appropriate,</li> <li>- modification of skin flaps for amputation due to complex soft tissue injury,</li> <li>- fillet of foot for amputation where soft tissue is deficient.</li> </ul> |
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| <b>Topic</b>                           | <b>LOWER LIMB</b>  |
| <b>Category</b>                        | ST7 & 8 Final Years  |
| <b>Module 5</b>                        | <b>Complications</b>   |
| <b>Objective</b>                       | <i>Acquire competence in the diagnosis and management of both bone and soft tissue complications and recognition of the need for multidisciplinary management.</i>   |
| <b>Knowledge</b>                       | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- consequences of infection following trauma and surgery,</li> <li>- complications of free flap surgery,</li> <li>- complications following the use of local flaps,</li> <li>- those complications which require referral to specialist centres.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of the management of all complications following soft tissue reconstruction including recognition of skeletal complications.</p> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- basic science and evidence-base underpinning the management of complications,</li> <li>- orthopaedic principles of managing delayed union and non-union</li> </ul>   |
| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- undertake clinical assessment of complications and in particular recognise a compromised free or local flap, in conjunction with general patient parameters.</li> <li>- use relevant adjunctive techniques such as ultrasound.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- clinically assess and plan management algorithms for the conditions covered in this module,</li> <li>- use a range of free flap monitoring techniques.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- undertake detailed assessment of, and advise on, complex problems including reconstruction/salvage of the limb if primary reconstruction has failed,</li> <li>- analyse and advise on modifications needed to standard therapy regimens to address specific complications.</li> </ul> |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- washout of haematoma/collection.</li> <li>- application of leeches to flap tip with venous congestion.</li> <li>- simple debridement of non-viable flap and appropriate application of temporary dressing.</li> </ul> <p><b>INTERMEDIATE</b></p>  |

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|  | Should be able to take back free flap to theatre with consultant assistance.<br><br>ADVANCED<br>Should be able to perform <ul style="list-style-type: none"> <li>- salvage or amputation of limb following flap failure,</li> <li>- bone debridement in conjunction with orthopaedic surgeons.</li> <li>- raising flaps to assist orthopaedic team for skeletal revision surgery including cancellous bone graft</li> </ul> |
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| <b>Topic</b>           | <b>LOWER LIMB</b>   |
| <b>Category</b>        | ST7 & 8 Final Years   |
| <b>Module 6</b>        | <b>Paediatric injuries and outcome measures</b>   |
| <b>Objective</b>       | <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>   |
| <b>Knowledge</b>       | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- principles of management of children's injuries – skeletal and soft tissue – and appreciate differences from adults,</li> <li>- normal growth and development, in particular the importance of growth plates,</li> <li>- outcome measures such as Sickness Impact Profile (SIP),</li> <li>- short Form-36 (SF36) and Enneking score. Recognition of the need for specialist centres for revision surgery.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- management of open lower limb injuries in children.</li> <li>- how to apply outcome measures to practice and interpret published work, including limitations.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- management of paediatric lower limb injuries and the specific bone and soft tissue considerations needed with regard to growth,</li> <li>- controversies regarding paediatric open lower limb injuries,</li> <li>- how to plan and undertake an outcome study and audit outcomes for lower limb trauma.</li> </ul> |
| <b>Clinical Skills</b> | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- clinically assess the injured child,</li> <li>- communicate and liaise with parents,</li> <li>- work and communicate within the relevant multidisciplinary team (MDT),</li> <li>- recognise non-accidental injury.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to plan management algorithms for the paediatric patient with lower limb injury.</p> <p><b>ADVANCED</b></p>  |



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|  | <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- use skills of analysis and diagnostic synthesis, judgement, and surgical planning,</li> <li>- in respect of the child, to advise regarding timing of reconstruction and effect of growth on reconstructive surgery previously performed,</li> <li>- provide detailed advice on the treatment pathway, including interpretation of specialist imaging, within the context of the relevant MDT.</li> </ul> |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to stabilise the child with lower limb injury for safe transfer to specialist centre.</p> <p><b>INTERMEDIATE</b><br/>Should be able to perform primary debridement and application of temporary wound dressings in theatre.</p> <p><b>ADVANCED</b><br/>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

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| <b>Topic</b>     | <b>ONCOPLASTIC BREAST</b>  |
| <b>Category</b>  | ST7 & 8 Final Years and TIG Fellows  |
| <b>Module 1</b>  | <p><b>Basic Sciences and Breast Assessment</b></p> <ul style="list-style-type: none"> <li>• Basic sciences - embryology, development, anatomy, physiology and genetics, stem cell biology, biology of scarring and wound healing; Management of abnormal scars</li> <li>• Breast assessment - examination, investigations including imaging and biopsy techniques</li> </ul> |
| <b>Objective</b> | <i>Acquire competence in basic sciences pertinent to the breast and competence in clinical diagnosis and investigation</i>   |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- topographical and segmental anatomy of the breast, vascular neuronal and lymphatic supply / drainage of breast, anatomy of chest wall, abdomen and axilla,</li> <li>- lymphatic system physiology,</li> <li>- embryology of breast,</li> </ul>                              |

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|  | <ul style="list-style-type: none"> <li>- endocrine physiology and endocrine effects on the breast at puberty, pregnancy, lactation, menopause and in mastalgia,</li> <li>- effect of hormonal therapeutics on the breast (OCP, HRT, SERM's &amp; AI's)</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- developmental abnormalities - accessory nipples, accessory breast tissue</li> <li>- concept and limitations of triple assessment</li> </ul> <p><b>ADVANCED</b><br/>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>   |
| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- take a focused breast history related to any breast symptom,</li> <li>- examine the breast and axilla,</li> <li>- request component investigations of triple assessment, and ensure that results are discussed at breast MDT</li> <li>- accurately record diagnostic findings.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- arrange non-standard investigations required to assess breast symptoms following inconclusive initial results,</li> <li>- interpret mammogram and ultrasound findings,</li> <li>- interpret significance of cytological and histological biopsy reports,</li> <li>- plan treatment algorithms for conditions in this module.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate skills of analysis and diagnostic synthesis, judgement, and surgical planning.</p> |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- free-hand and ultrasound guided lesion FNA</li> <li>- free-hand core biopsy,</li> <li>- punch biopsy of skin / nipple.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- surgical excision biopsy,</li> <li>- ultrasound guided core biopsy.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform vacuum assisted mammatome biopsy.</p>  |
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| <b>Topic</b>           | <b>ONCOPLASTIC BREAST</b>   |
| <b>Category</b>        | ST7 & 8 Final Years and TIG Fellows   |
| <b>Module 2</b>        | <b>Breast cancer</b>  |
| <b>Objective</b>       | <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>  |
| <b>Knowledge</b>       | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- epidemiology, histological classification and sub-types of invasive disease and DCIS,</li> <li>- staging of breast cancer (UICC – TNM) ,</li> <li>- prognostic factors (tumour and patient related) and implications for patient treatment recommendations Breast cancer MDT dataset,</li> <li>- male breast cancer,</li> <li>- development of the NHSBSP and current structure,</li> <li>- breast screening delivery, patient flow, quality assurances and criticisms/limitations associated with the NHSBSP,</li> <li>- principles of screening programmes within a population.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- indications for primary medical therapy,</li> <li>- rationale for neo-adjuvant chemotherapy / endocrine therapy including evidence and limitations,</li> <li>- indications and CI's for mastectomy and BCS and appropriate selection of axillary surgery (SLNB vs ALND),</li> <li>- oncoplastic techniques (therapeutic mammoplasty / IBR/SSM &amp; NSM),</li> <li>- complications of surgery and their management,</li> <li>- adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies (NICE clinical guidelines 80 &amp; 81), specifically common regimes, indications, complications and side effects and supporting evidence,</li> <li>- knowledge of 'Adjuvant On-Line',</li> <li>- cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis,</li> <li>- palliative treatment options for breast cancer.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- breast cancer genetics, specifically identified gene abnormalities and conditions associated with breast cancer (e.g. BRCA 1&amp;2, TP53, Cowdens syndrome, Bananyan Zonanan Syndrome, CHEK2, HNPCC etc),</li> <li>- relevance of family history in breast cancer, the role of the family history clinic and specific referral criteria. (NICE clinical guideline 41),</li> <li>- models for estimating individual risk (Gail model, Bodicea, Klaus, Tyrer-Cuzick),</li> <li>- non-surgical and surgical risk reduction strategies and supporting evidence,</li> <li>- management and follow-up of non-malignant high risk breast lesions,</li> <li>- current and important adjuvant and neo-adjuvant historical trials (clinical/surgical, chemotherapy, radiotherapy and hormonal),</li> <li>- pregnancy associated breast cancer and its management.</li> </ul> |
| <b>Clinical Skills</b> | <b>BASIC</b>  |

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

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| <b>Topic</b>     | <b>ONCOPLASTIC BREAST</b>   |
| <b>Category</b>  | ST 7 & 8 Final Years and TIG Fellows  |
| <b>Module 3</b>  | <b>Benign breast conditions</b>   |
| <b>Objective</b> | <i>Acquire competence in the diagnosis and management of benign breast conditions.</i>  |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- 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</li> <li>- Phylloides tumour,</li> <li>- gynaecomastia,</li> <li>- involutional change of the breast.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- relationship between systemic disorders, medication and lifestyle factors with breast symptoms (hyper-prolactinaemia, gynaecomastia, OCP, smoking),</li> <li>- benign pregnancy and lactational lesions of the breast (lactational adenoma, galactocoele).</li> </ul> <p><b>ADVANCED</b><br/>Should be able to describe association between specific high-risk benign</p> |

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|  | breast conditions with associated increased breast cancer risk.   |
| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- take focussed breast history, eliciting factors associated with benign breast disease,</li> <li>- examine breast and axillary</li> <li>- examine systems associated with benign breast disease (endocrine, abdominal),</li> <li>- initiate appropriate investigations / triple assessment where indicated</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- formulate management plan of benign breast pathology included in this module,</li> <li>- interpret investigation findings and understand how they differ from findings in malignant disease.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate skills of analysis and diagnostic synthesis, judgement and surgical planning for the conditions specified in this module.</p> |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- free hand aspiration / surgical drainage of breast abscess,</li> <li>- aspiration of cyst,</li> <li>- benign lump excision.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- wire / image guided excision of lesion,</li> <li>- ultrasound guided aspiration abscess,</li> <li>- microdocheotomy,</li> <li>- major duct excision,</li> <li>- fistula surgery.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- ductoscopy,</li> <li>- minimal access surgery,</li> <li>- nipple eversion techniques.</li> </ul>  |
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| <b>Topic</b>     | <b>ONCOPLASTIC BREAST</b>   |
| <b>Category</b>  | ST 7 & 8 Final Years and TIG Fellows  |
| <b>Module 4</b>  | <b>Reconstruction implant- based techniques</b>   |
| <b>Objective</b> | <i>Acquire competence in implant based reconstruction including indications, technique and management of complications</i>  |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- indications and CI's to implant based reconstruction,</li> </ul> |

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|  | <ul style="list-style-type: none"> <li>- surgical anatomy of implant / expander based reconstructive procedures,</li> <li>- alloplastic materials and tissue interface,</li> <li>- dermal xenografts.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- advantages and disadvantages in comparison to autologous based reconstruction,</li> <li>- range of devices available,</li> <li>- implant infection and management,</li> <li>- implant extrusion,</li> <li>- capsular contracture,</li> <li>- aetiology, classification, role of DXT and management, - historical development and controversies.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- staged procedures – single and two stage: advantages and disadvantages,</li> <li>- adjunctive biological technologies,</li> <li>- outcome of implant based reconstruction,</li> <li>- relevant literature</li> </ul> |
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| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- assess suitability for implant based reconstruction and alternatives,</li> <li>- identify pre-operative factors which can be optimized prior to surgery (smoking, systemic disease).</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to consent patients describing full range of potential complications, and set realistic expectations.</p> <p><b>ADVANCED</b><br/>Should demonstrate ability to select appropriate implants / expanders for patients, recognise post-operative complications and formulate associated management plans.</p>   |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to</p> <ul style="list-style-type: none"> <li>- orient devices and prepare appropriately,</li> <li>- explain issues regarding antibiotics, drains, changing gloves,</li> <li>- use electric operating tables,</li> <li>- protect pressure areas,</li> <li>- prevent nerve injuries / neurapraxia.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- creation and closure of sub-pectoral pocket,</li> <li>- subpectoral pocket including total sub-muscular cover,</li> <li>- two stage reconstruction using TEX and subsequent exchange for FVI.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- preoperative marking of patient,</li> <li>- single staged reconstruction using FVI and dermal xenograft sling,</li> <li>- inferior dermal sling to achieve implant cover.</li> <li>- identification and correction of aesthetic deficiencies as secondary procedures,</li> <li>- nipple reconstruction techniques (see under Module 5).</li> </ul> |
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| <b>Topic</b>     | <b>ONCOPLASTIC BREAST</b>   |
| <b>Category</b>  | ST 7 & 8 Final Years and TIG Fellows  |
| <b>Module 5</b>  | <b>Reconstruction with autologous tissue-based techniques</b>   |
| <b>Objective</b> | <i>Acquire competence in autologous tissue based breast reconstruction including indications, technique and management of complications.</i>  |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- classification of flaps (random versus axial / muscle flap - Mathes and Nahai / type of tissue being transferred)</li> </ul> |



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

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| <b>and Procedures</b> | <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- positioning of patient on operating tissue,</li> <li>- protection of pressure areas,</li> <li>- prevention of nerve injuries / neurapraxia,</li> <li>- skin preparation, draping and antibiotic prophylaxis,</li> <li>- selection / arrangement of appropriate level of post-operative care,</li> <li>- use of electric operating tables.</li> </ul> <p><b>INTERMEDIATE</b></p> <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- pre-operative marking of patient ,</li> <li>- raising pedicled autologous flaps including latissimus dorsi.</li> <li>- in-setting of flap.</li> </ul> <p><b>ADVANCED</b></p> <p>Should be able to perform</p> <ul style="list-style-type: none"> <li>- preoperative marking up of patient,</li> <li>- nipple reconstruction techniques (Nipple sharing procedures, local flaps, tattooing),</li> <li>- raising pedicled autologous TRAM flap,</li> <li>- free-flap techniques,</li> <li>- microvascular anastomoses ,</li> <li>- flap salvage for failing flaps,</li> <li>- flap shaping techniques,</li> <li>- flap revision techniques,</li> <li>- lipomodelling for correction of resectional defects,</li> <li>- lipomodelling in breast reconstruction.</li> </ul> |
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| <b>Topic</b>     | <b>AESTHETIC</b>  |
| <b>Category</b>  | ST7 & 8 Final Years and TIG Fellows   |
| <b>Module 6</b>  | <b>Aesthetic Surgery of the Breast</b>  |
| <b>Objective</b> | <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>  |
| <b>Knowledge</b> | <p><b>BASIC</b></p> <p>Should be able to demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- applied and surgical anatomy of the breast, its blood, nerve supply and function,</li> <li>- development of the breast and congenital deformity and variations of breast form and associated structures,</li> <li>- hormonal control of the breast and its pathology, when deranged,</li> <li>- breast physiology in pregnancy and lactation,</li> <li>- benign pathologies of the breast,</li> <li>- presentation, clinical features of breast cancer, its staging, prognosis and management pathways,</li> <li>- effect of ionizing radiation on the breast and implants,</li> </ul> |

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

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

\* 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

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

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

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|  | <p><b>INTERMEDIATE</b><br/>Should be able to perform:</p> <ul style="list-style-type: none"><li>• raising gastrocnemius flap for coverage of proximal third tibial defects</li><li>• direct nerve and vessel repair</li><li>• harvesting of nerve and vein grafts</li><li>• arterial and venous anastomosis</li><li>• four compartment fasciotomy for complications of extremity surgery</li></ul> <p><b>ADVANCED</b><br/>Should be able to perform:</p> <ul style="list-style-type: none"><li>• marginal excision of soft tissue sarcoma</li><li>• marginal excision of sarcoma from vital adjacent structures</li><li>• wide excision of soft tissue sarcoma</li><li>• skin excision in continuity with soft tissue tumour or elevation of viable skin flaps</li><li>• access incisions which preserve maximum vascularity to surrounding soft tissues</li><li>• compartmentectomy</li><li>• amputation at various levels of extremities involving sarcoma</li><li>• most steps in the raising and anastomosis of free flaps</li></ul> |
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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   |
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| Category  | ST7 & 8 Final Years  |
| Module 1  | <p><b>Basic Sciences</b></p> <ul style="list-style-type: none"> <li>• Embryology, development, anatomy and physiology</li> <li>• Skin assessment – examination, investigations including imaging and biopsy techniques</li> </ul>  |
| 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><b>BASIC</b></p> <p>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- anatomy of the skin-epidermal and dermal layers and appendigeal structures,</li> <li>- embryology of the skin,</li> <li>- histopathological appearance of skin,</li> <li>- anatomy of the body surface, in particular the head and neck, hands, nails and feet,</li> <li>- vascular, neuronal and lymphatic supply / drainage of the head &amp; neck, trunk and limbs, blood supply of the skin,</li> <li>- diagnostic imaging of skin neoplasia X-rays, CT, MRI, USS, PET-CT, and imaging assisted diagnostic biopsy,</li> <li>- histology of the skin standard stains,</li> <li>- immunocytochemistry and cytogenetic techniques ,</li> <li>- common benign skin disorders-hidradenitis suppurativa, epidermal cysts, lipomas, vascular and congenital malformations,</li> <li>- 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,</li> <li>- 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, pilomatrixomata,</li> </ul> |



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

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|   | <p>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- interpret of any scans performed in particular PET, PET-CT and lymphoscintigraphy,</li> <li>- assess and formulate management plan for the large complex wound,</li> <li>- formulate appropriate and timely management, investigations, treatment and follow up plan for a patient all types of benign and malignant skin lesions</li> </ul>   |
| <p><b>Technical Skills and Procedures</b></p> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- airway management using the techniques specified by ATLS,</li> <li>- provide circulatory support using the techniques specified by ATLS,</li> <li>- free-hand and ultrasound guided lesion biopsy</li> <li>- FNA of suspected lesions, punch biopsy,</li> <li>- harvesting of cells for cytological examination for fungus or malignancy,</li> <li>- aspiration of seromas or cystic skin lesions,</li> <li>- excision biopsy of undiagnosed skin lesions smaller than 1cm in size including those suspicious for malignancy and direct closure techniques,</li> <li>- application of the appropriate dressings in open wounds,</li> <li>- application of the appropriate dressings in infected skin wounds</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- 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),</li> <li>- biopsy of subungual lesions,</li> <li>- use of Mohs micrographic surgery,</li> <li>- application of a negative pressure dressing.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- sentinel lymph node biopsy to include interpretation of result</li> <li>- surgical incision / excision biopsy of large suspicious skin lesions (greater than 1cm in size) including large facial lesions,</li> <li>- surgically debride and dress large complex wounds.</li> </ul> |
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| <b>Topic</b>           | <b>SKIN</b>   |
| <b>Category</b>        | ST7 & 8 Final Years   |
| <b>Module 2</b>        | <b>Primary treatment of skin-related neoplasia</b>  |
| <b>Objective</b>       | <i>Acquire competence in the diagnosis, assessment and management of all types of primary skin-related neoplasia.</i>   |
| <b>Knowledge</b>       | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- epidemiology ,</li> <li>- histological classification (basal cell carcinoma / squamous cell carcinoma / Melanoma / Merkel cell/ Porocarcinoma/ Adnexal and pre-cancerous lesions,</li> <li>- potential differential diagnosis skin lesions,</li> <li>- staging of skin cancer, (histological classifications, TMN, AJCC and current),</li> <li>- prognostic factors (tumour and patient related) and implications for patient treatment recommendations</li> <li>- implications of the occupational, family history, sun exposure history and immunosuppression,</li> <li>- principles of screening programmes within a population,</li> <li>- genetic counselling and referral indications,</li> <li>- 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.</li> <li>- 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,</li> <li>- the role of the MDT,</li> <li>- peer review and MDM documentation,</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- margins of excision of different stages of melanoma, porocarcinoma, Merkel Cell carcinoma, Dermatofibroma sarcoma Protuberans, fibrosarcoma and sarcoma,</li> <li>- indications for non-surgical treatment (Photodynamic therapy-PDT, Cryotherapy, laser and topical therapies)</li> <li>- indications for sentinel lymph node biopsy and other prognostic investigations,</li> <li>- adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies particularly for melanoma,</li> <li>- cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis,</li> <li>- palliative treatment options for skin cancer.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- association between specific high risk benign skin conditions with associated increased skin cancer risk,</li> <li>- genetic conditions in skin cancer,</li> <li>- melanoma tumour biology,</li> <li>- controversies that have existed around sentinel lymph node biopsy, its history, origins and basis of sentinel lymph node biopsy,</li> <li>- theories of melanoma spread - incubator versus marker theory,</li> <li>- important adjuvant and neo-adjuvant historical and current national and international trials (clinical/surgical, chemotherapy, radiotherapy, laser, hormonal and biological).</li> </ul> |
| <b>Clinical Skills</b> | <p><b>BASIC</b><br/>Should demonstrate ability to</p>   |

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|   | <ul style="list-style-type: none"> <li>- take focused skin related history,</li> <li>- elicit factors associated with benign and malignant skin neoplasia such as familial factors, sun exposure and mechanism of sun damage and skin types,</li> <li>- examine head &amp; neck and truncal lymph node basins,</li> <li>- initiate appropriate investigations, use diagnostic techniques of clinical features, the diagnostic templates eg. ABCDE (asymmetry, borders, colour, diameter and evolving),</li> <li>- undertake dermoscopy and methods of recording lesion e.g. photography, diagrams for medicolegal and follow up reasons,</li> <li>- work effectively within the skin cancer and allied speciality multidisciplinary teams, (eg head and neck MDM).</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- assess and manage patients presenting with locally advanced disease,</li> <li>- recognise pathological features of common skin cancers –BCC, SCC and melanoma.</li> <li>- interpret lymphoscintigraphy, CT, MRI &amp; PET scans,</li> <li>- recognise where further pathology or radiology may be required and request these appropriately,</li> <li>- develop and record management plan in line with peer review requirements and discuss rationale for management of common scenarios with patients and colleagues,</li> <li>- communicate skilfully.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- interpret FNA/USS and distinguish a primary pigmented lesion from a primary melanoma or a metastatic melanoma.</li> <li>- formulate management plan using skills of analysis, diagnostic synthesis and judgement,</li> <li>- discuss complex treatment scenarios with patients including discussion of all options,</li> <li>- take informed consent detailing advantages and disadvantages of proposed treatment,</li> <li>- discuss a cancer diagnosis with patients,</li> <li>- advanced communication skills, breaking bad news, giving prognostic information to the patient with skin cancer.</li> </ul> |
| <p><b>Technical Skills and Procedures</b></p> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- excision biopsy of lesion and incision biopsy of skin lesions-when indicated,</li> <li>- Fine Needle Aspiration-FNA / core sample of lymph nodes,</li> <li>- wider excision of skin tumours with the advised margins on the trunk, leg and arm,</li> <li>- local flap reconstruction (rotation / transposition / advancement),</li> <li>- optimum placement of incisions allowing for possible secondary surgery and future block dissections,</li> <li>- explain the rationale for use of split and full thickness skin grafts and artificial skin replacements,</li> <li>- pre-op skin prep and draping and antibiotic and venous thromboembolism prophylaxis,</li> <li>- node sample in centres where SNB is not employed,</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- wider excision of lesions with the advised margin on the skin of the head and neck, face, genitalia and hand,</li> <li>- head and neck, truncal and limb sentinel lymph node biopsy, - level I, II and III axillary dissections and inguinal block dissection,</li> </ul>  |

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|  | <ul style="list-style-type: none"> <li>- regional flaps - rotational, advancement,.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- pelvic or head and neck block dissection,</li> <li>- reconstruction with regional and distant flaps,</li> <li>- free flap surgery,</li> <li>- reconstruction of aesthetic units (nose / eyelids / ears / lips) and special sites – nose, digits, eyes, genitalia and ears,</li> <li>- oculoplastic techniques</li> </ul> |
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| <b>Topic</b>     | <b>SKIN</b>   |
| <b>Category</b>  | ST7 & 8 Final Years   |
| <b>Module 3</b>  | <b>Treatment of recurrent and chronic skin tumours</b>  |
| <b>Objective</b> | <i>Acquire competence in the diagnosis, assessment, investigation and management of all types of recurrent and metastatic skin cancers.</i>   |
| <b>Knowledge</b> | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- epidemiology and genetics of skin,</li> <li>- basic understanding of familial syndromes,</li> <li>- genes/oncogenes associated with skin cancer,</li> <li>- margins of excision for metastatic lesions including national guidance,</li> <li>- types of cancer – recurrences, new primaries, related malignancies,</li> <li>- immunosuppressed patients,</li> <li>- syndromic patients, ie, Gorlin's, Cowden's, polyposis coli, melanosis, xeroderma pigmentosum, giant melanocytic naevi, skin conditions in immunocompromised patients,</li> <li>- TNM Staging of skin cancer,</li> <li>- prognostic factors (tumour and patient related) and implications for patient treatment recommendations,</li> <li>- rationale and types of imaging for prognostic and staging information,</li> <li>- biopsies, FNA, USS, X-Ray, CT, MRI, PET-CT, SPECT-CT and SNB,</li> <li>- cancer network guidelines in treatment of recurrent skin cancers,</li> <li>- functioning of the MDT,</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- indications for non-surgical treatment,</li> <li>- anatomy and techniques for excision and closure of block dissections,</li> <li>- adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies,</li> <li>- Mohs micrographic surgery, isolated limb infusions, ECT, isolated limb perfusion, CO2 laser ablation and minimally invasive techniques including laparoscopic and robotic surgery,</li> <li>- cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis,</li> <li>- palliative treatment options for the skin cancer patient,</li> <li>- management of the complex wound,</li> <li>- hospice care</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- appropriate use of and pitfalls of frozen section,</li> </ul> |

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|  | <ul style="list-style-type: none"> <li>- association between specific high risk benign skin conditions with associated increased skin cancer risk,</li> <li>- important adjuvant and neo-adjuvant historical and current national and international trials (clinical/surgical, chemotherapy, radiotherapy, hormonal and biological),</li> <li>- role of Human Papilloma Virus-HPV, in cancer aetiology</li> </ul>  |
| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- take focused skin related history,</li> <li>- elicit factors associated with malignant non-skin related neoplasia,</li> <li>- examine skin of entire body surface for additional primary tumors,</li> <li>- examine all sites for regional lymphadenopathy,</li> <li>- initiate appropriate investigations,</li> <li>- work effectively within the skin cancer multidisciplinary team,</li> <li>- manage the non-operative aspects of the chronic wound including pressure sores</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- interpret CT, MRI &amp; PET scans,</li> <li>- assess and manage patients presenting with locally advanced disease,</li> <li>- recognise where further pathology or radiology may be required and request these appropriately,</li> <li>- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- formulate management plan using skills of analysis and diagnostic synthesis, judgement in particular for the patient with multiple co-morbidities,</li> <li>- discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent,</li> <li>- discuss a skin cancer diagnosis and prognosis with patients,</li> <li>- communicate skilfully with patients and with other members of the clinical team,</li> </ul> |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- incision biopsy of lesions,</li> <li>- excision biopsy of lesions,</li> <li>- FNA / core sample of lymph nodes,</li> <li>- undertaking local flap reconstruction (rotation / transposition / advancement).</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- cervical sentinel lymph node biopsy</li> <li>- regional lymph node dissections of the axilla and groin,</li> <li>- hernia repair</li> <li>- regional flaps, pedicled reconstructions</li> <li>- use of dermal substitutes for wound resurfacing</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- pelvic and head and neck dissections,</li> <li>- free flap surgery,</li> <li>- reconstruction of aesthetic units (nose / eyelids / ears / lips), isolated limb infusion,</li> <li>- isolated limb perfusion,</li> <li>- mapping biopsy techniques such as Mohs micrographic surgery.</li> </ul>  |

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



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|   | <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- discuss advantages and disadvantages of reconstructive options with patients specifically setting realistic expectations, advising on reconstruction as a process, and detailing possible complications,</li> <li>- take informed consent from patients and participate in joint decision making,</li> <li>- arrange appropriate level of post-operative care.</li> <li>- manage complications of surgery appropriately in post-operative period and in the clinic.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- clinically assess complex reconstructive requirements and formulate appropriate management plan,</li> <li>- interpret investigations as part of formulating management plan.</li> </ul>   |
| <p><b>Technical Skills and Procedures</b></p> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- positioning of patient on operating table.,</li> <li>- protection of pressure areas,</li> <li>- prevention of nerve injuries / neurapraxia,</li> <li>- pre-operative marking of patient, skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis,</li> <li>- split skin grafting, full thickness skin grafting</li> <li>- range of local flaps</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- reconstruction of the scalp and management of chronic scalp wounds and the unstable scalp,</li> <li>- raising pedicled autologous flaps,</li> <li>- in-setting of flap,</li> <li>- harvesting chondrocutaneous, cartilage, composite grafts and vein grafts.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- 3D reconstruction of specialised structures,</li> <li>- reconstruction of the periorbital structures/ear and nose,</li> <li>- microvascular anastomoses,</li> <li>- flap salvage for failing flaps,</li> <li>- flap shaping techniques,</li> <li>- flap revision techniques</li> </ul> |
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| <b>Topic</b>                           | <b>SKIN</b>   |
| <b>Category</b>                        | ST7 & 8 Later Years   |
| <b>Module 5</b>                        | <b>Scarring, wounds and other surgical conditions of the skin</b>   |
| <b>Objective</b>                       | <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>  |
| <b>Knowledge</b>                       | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- skin anatomy,</li> <li>- aetiology and related benign conditions,</li> <li>- hypertrophic scars, keloids, dermatofibroma, epidermal cysts, lentiginos, actinic keratoses, xanthelasmata, lipomas,</li> <li>- history and examination of the skin.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- dermoscopy and imaging techniques of the skin,</li> <li>- Marjolin's ulcer, pilomatrixoma, DFSP, hidradenitis suppurativa, acne scarring, inflammatory skin conditions, adult vascular malformations.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- consequences of nerve resection and other functional deficits after resection of tumour,</li> <li>- lymphoedema,</li> <li>- complex wounds,</li> <li>- psychological and social issues that can affect the skin cancer patient,</li> <li>- reconstructive techniques for pressure sores and large complex wounds.</li> </ul> |
| <b>Clinical Skills</b>                 | <p><b>BASIC</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- assess the skin using dermoscope,</li> <li>- recognise infection, induration, lymphoedema, seroma, post radiotherapy recurrence in complex scars.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- assess surgical scar and deploy non-operative techniques for scar improvement,</li> <li>- injection techniques for scar improvement,</li> <li>- manage functional and psychological effects of post cancer resection surgery,</li> <li>- participate in multidisciplinary management of patients with large, chronic vascular malformations.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- undertake nerve defect assessments,</li> <li>- make decisions and analyse the options for aesthetic improvement in the surgically-scarred cancer patient including advance communications skills.</li> </ul>  |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- debulking of keloids,</li> <li>- excision of benign lesions,</li> <li>- shave excisions,</li> <li>- laser ablation of skin lesions,</li> <li>- incision and curettage for active hidradenitis suppurativa.</li> </ul>  |

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|  | <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- botulinum toxin and filler injections,</li> <li>- scar release,</li> <li>- z-plasty,</li> <li>- reconstruction post excision of scars,</li> <li>- surgical options of laser,</li> <li>- excision or sclerotherapy for vascular malformations,</li> <li>- fat grafting.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- laser resurfacing,</li> <li>- rejuvenation of the skin,</li> <li>- reconstructive techniques for advanced and crippling hidradenitis suppurativa,</li> <li>- reconstruction techniques for pressure sores and large complex wounds, lymphatic reconstruction/anastomosis,</li> <li>- surgical excision of lymphoedema.</li> </ul> |
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| <b>Topic</b>           | <b>SKIN</b>   |
| <b>Category</b>        | ST7 & 8 Final Years   |
| <b>Module 6</b>        | <b>Multidisciplinary team workings, allied professionals, palliative care and follow up regimes, trials, research and national guidelines</b>   |
| <b>Objective</b>       | <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>   |
| <b>Knowledge</b>       | <p><b>BASIC</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- national guidelines for the diagnosis, treatment and follow up of BCC, SCC's, Bowen's, Melanoma, DFSP and Sarcoma,</li> <li>- surgical and non surgical options.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- management of the patient with recurrent disease (surgical, non-surgical and radiotherapy options),</li> <li>- 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.</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate knowledge of</p> <ul style="list-style-type: none"> <li>- current trials, ethics, research and pathways to develop trials/research within a service,</li> <li>- impact of disfigurement,</li> <li>- 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,</li> <li>- process by which an individual can successfully adjust to disfigurement and how the multidisciplinary team can assist with that process.</li> </ul> |
| <b>Clinical Skills</b> | <p><b>BASIC</b><br/>Should demonstrate ability in using communication and referral pathways to specialist MDM's</p> <p><b>INTERMEDIATE</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- interpret lymphoscintigraphy, CT, MRI, PET, FNA, USS and pathology minimum dataset,</li> <li>- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues,</li> <li>- apply psychological assessment tools for evaluation of psychological needs (patient questionnaires).</li> </ul> <p><b>ADVANCED</b><br/>Should demonstrate ability to</p> <ul style="list-style-type: none"> <li>- formulate management plan using skills of analysis and diagnostic synthesis, judgement,</li> <li>- discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and taking informed consent,</li> <li>- develop the skills to arrange patient-centered care with patient as partner in the process,</li> <li>- provide realistic information and guiding patient decision-making regarding choices available and timing of those treatments,</li> </ul>  |

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|  | <ul style="list-style-type: none"> <li>- manage and lead the multi-disciplinary teams in respect of provision of psycho-social care,</li> <li>- 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.</li> </ul>  |
| <b>Technical Skills and Procedures</b> | <p><b>BASIC</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- excision of small skin recurrences / <i>in transit</i> metastases,</li> <li>- recording surgical procedures,</li> <li>- handling of surgical specimens,</li> <li>- orientation and appropriate carriage medium for skin specimens,</li> <li>- performing FNA.</li> </ul> <p><b>INTERMEDIATE</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- treatment of painful metastatic lesions and recurrences by surgical resection/laser resection of metastatic lesions,</li> <li>- groin and axillary dissections,</li> <li>- fasciotomy for the leg or the upper limb.</li> </ul> <p><b>ADVANCED</b><br/>Should be able to perform</p> <ul style="list-style-type: none"> <li>- head and neck resections,</li> <li>- ILI, ILP, CO2 laser,</li> <li>- minimally invasive surgical methods of isolated metastases,</li> <li>- pelvic resections.</li> </ul> |
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## 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.

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| <b>Topic</b>                           | <b>DEALING WITH PATIENTS IMPACTED BY DISFIGUREMENT AND LOSS OF FORM AND FUNCTION</b>  |
| <b>Category</b>                        | ALL TRAINEES / ALL MODULES  |
| <b>Module (Single module)</b>          | <b>Dealing with patients impacted by disfigurement and loss of form and function</b>  |
| <b>Objective</b>                       | <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>  |
| <b>Knowledge</b>                       | <p><b>BASIC</b></p> <ul style="list-style-type: none"> <li>- Demonstrates knowledge of the psycho-social issues that may follow from trauma, disease and surgery including social anxiety, depression, bullying, prejudice isolation and exclusion.</li> <li>- Demonstrates awareness of those parts of the specialty where psychosocial issues can have particular impacts for patients (Burns, Cleft, Craniofacial, Hand, Head &amp; Neck, Genitourinary reconstruction, Oncoplastic Breast, Skin Oncology, Vascular anomalies)</li> </ul> <p><b>INTERMEDIATE</b></p> <ul style="list-style-type: none"> <li>- Demonstrates knowledge of the factors that predict patient ability to cope with surgical treatment</li> <li>- 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</li> </ul> |
| <b>Clinical Skills</b>                 | <p><b>BASIC</b></p> <ul style="list-style-type: none"> <li>- Demonstrates ability to elicit signs and symptoms of distress and anxiety in patient undergoing plastic surgery</li> <li>- Demonstrates ability to make an appropriate referral to a clinical psychologist or other supporting member of the multidisciplinary team</li> </ul> <p><b>INTERMEDIATE</b></p> <ul style="list-style-type: none"> <li>• 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</li> <li>• Demonstrates confidence to elicit psychological and social needs in a range of settings.</li> </ul>   |
| <b>Technical Skills and Procedures</b> | <i>Not applicable</i>   |
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# **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                      |
|------------------|--|----------------------------------|--|--|
| <b>Category</b>  | <p><b>Good Clinical Care</b>, to include:</p> <ul style="list-style-type: none"> <li>• History taking (GMP Domains: 1, 3, 4)</li> <li>• Physical examination (GMP Domains: 1, 2,4)</li> <li>• Time management and decision making (GMP Domains: 1,2,3)</li> <li>• Clinical reasoning (GMP Domains: 1,2, 3, 4)</li> <li>• Therapeutics and safe prescribing (GMP Domains: 1, 2, 3)</li> <li>• Patient as a focus of clinical care (GMP Domains: 1, 3, 4)</li> <li>• Patient safety (GMP Domains: 1, 2, 3)</li> <li>• Infection control (GMP Domains: 1, 2, 3)</li> </ul>  | <b>Area 4.1</b>                  |  |  |
| <b>Objective</b> | <p>To achieve an excellent level of care for the individual patient</p> <ul style="list-style-type: none"> <li>• To elicit a relevant focused history (See modules 2, 3, 4,5)</li> <li>• To perform focused, relevant and accurate clinical examination (See modules 2,3,4,5)</li> <li>• To formulate a diagnostic and therapeutic plan for a patient based upon the clinic findings (See modules 2,3,4,5)</li> <li>• To prioritise the diagnostic and therapeutic plan (See modules 2,3,4,5)</li> <li>• To communicate a diagnostic and therapeutic plan appropriately (See modules 2,3,4,5)</li> </ul> <p>To produce timely, complete and legible clinical records to include case-note records, handover notes, and operation notes</p> <p>To prescribe, review and monitor appropriate therapeutic interventions relevant to clinical practice including non – medication based therapeutic and preventative indications (See module 1,2,3,4,5)</p> <p>To prioritise and organise clinical and clerical duties in order to optimise patient care</p> <p>To make appropriate clinical and clerical decisions in order to optimise the effectiveness of the clinical team resource.</p> <p>To prioritise the patient’s agenda encompassing their beliefs, concerns expectations and needs</p> <p>To prioritise and maximise patient safety:</p> <ul style="list-style-type: none"> <li>• To understand that patient safety depends on</li> </ul> | <b>Area 4.1</b>                  | Mini CEX, CBD, Mini PAT, MRCS and Specialty FRCS | <p>Strongly recommended</p> <p>Patient safety</p> <p>Desirable:</p> <p>Human factors</p> |

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

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

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|  | <p>expectations</p> <ul style="list-style-type: none"> <li>• Respond to questions honestly and seek advice if unable to answer</li> <li>• Develop a self-management plan with the patient</li> <li>• Encourage patients to voice their preferences and personal choices about their care</li> </ul> <p><b>Clinical reasoning</b></p> <ul style="list-style-type: none"> <li>• Interpret clinical features, their reliability and relevance to clinical scenarios including recognition of the breadth of presentation of common disorders</li> <li>• Incorporates an understanding of the psychological and social elements of clinical scenarios into decision making through a robust process of clinical reasoning</li> <li>• Recognise critical illness and respond with due urgency</li> <li>• Generate plausible hypothesis(es) following patient assessment</li> <li>• Construct a concise and applicable problem list using available information</li> <li>• Construct an appropriate management plan in conjunction with the patient, carers and other members of the clinical team and communicate this effectively to the patient, parents and carers where relevant</li> </ul> <p><b>Record keeping</b></p> <ul style="list-style-type: none"> <li>• Producing legible, timely and comprehensive clinical notes relevant to the setting</li> <li>• 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</li> <li>• Presenting well documented assessments and recommendations in written and/or verbal form</li> </ul> <p><b>Time management</b></p> <ul style="list-style-type: none"> <li>• Identifies clinical and clerical tasks requiring attention or predicted to arise</li> <li>• Group together tasks when this will be the most effective way of working</li> <li>• Organise, prioritise and manage both team-members and workload effectively and flexibly</li> </ul> <p><b>Patient safety</b></p> <ul style="list-style-type: none"> <li>• Recognise and practise within limits of own professional competence</li> <li>• Recognise when a patient is not responding to treatment, reassess the situation, and</li> </ul> | <p><b>Area 4.1</b></p> |  |  |
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|                  | <p>encourage others to do so</p> <ul style="list-style-type: none"> <li>• Ensure the correct and safe use of medical equipment</li> <li>• Improve patients' and colleagues' understanding of the side effects and contraindications of therapeutic intervention</li> <li>• Sensitively counsel a colleague following a significant untoward event, or near incident, to encourage improvement in practice of individual and unit</li> <li>• 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</li> </ul> <p><b>Infection control</b></p> <ul style="list-style-type: none"> <li>• Recognise the potential for infection within patients being cared for</li> <li>• Counsel patients on matters of infection risk, transmission and control</li> <li>• Actively engage in local infection control procedures</li> <li>• Prescribe antibiotics according to local guidelines and work with microbiological services where appropriate</li> <li>• Recognise potential for cross-infection in clinical settings</li> <li>• Practice aseptic technique whenever relevant</li> </ul>  |  |  |  |
| <b>Behaviour</b> | <ul style="list-style-type: none"> <li>• Shows respect and behaves in accordance with Good Medical Practice</li> <li>• Ensures that patient assessment, whilst clinically appropriate considers social, cultural and religious boundaries</li> <li>• Support patient self-management</li> <li>• Recognise the duty of the medical professional to act as patient advocate</li> <li>• Ability to work flexibly and deal with tasks in an effective and efficient fashion</li> <li>• Remain calm in stressful or high pressure situations and adopt a timely, rational approach</li> <li>• Show willingness to discuss intelligibly with a patient the notion and difficulties of prediction of future events, and benefit/risk balance of therapeutic intervention</li> <li>• Show willingness to adapt and adjust approaches according to the beliefs and preferences of the patient and/or carers</li> <li>• Be willing to facilitate patient choice</li> <li>• Demonstrate ability to identify one's own biases and inconsistencies in clinical reasoning</li> <li>• Continue to maintain a high level of safety awareness and consciousness</li> <li>• Encourage feedback from all members of the team on safety issues</li> <li>• Reports serious untoward incidents and near misses and co-operates with the</li> </ul> |  |  |  |

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|   | <p>investigation of the same.</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• Continue to be aware of one's own limitations, and operate within them</li> <li>• Encourage all staff, patients and relatives to observe infection control principles</li> <li>• Recognise the risk of personal ill-health as a risk to patients and colleagues in addition to its effect on performance</li> </ul>  |                        |  |  |
| <p><b>Examples and descriptors for Core Surgical Training</b></p> | <p><b>Patient assessment</b></p> <ul style="list-style-type: none"> <li>• Obtains, records and presents accurate clinical history and physical examination relevant to the clinical presentation, including an indication of patient's views</li> <li>• Uses and interprets findings adjuncts to basic examination appropriately e.g. internal examination, blood pressure measurement, pulse oximetry, peak flow</li> <li>• Responds honestly and promptly to patient questions</li> <li>• Knows when to refer for senior help</li> <li>• Is respectful to patients by <ul style="list-style-type: none"> <li>○ Introducing self clearly to patients and indicates own place in team</li> <li>○ Checks that patients comfortable and willing to be seen</li> <li>○ Informs patients about elements of examination and any procedures that the patient will undergo</li> </ul> </li> </ul> <p><b>Clinical reasoning</b></p> <ul style="list-style-type: none"> <li>• 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</li> </ul> <p><b>Record keeping</b></p> <ul style="list-style-type: none"> <li>• Is able to format notes in a logical way and writes legibly</li> <li>• Able to write timely, comprehensive, informative letters to patients and to GPs</li> </ul> <p><b>Time management</b></p> <ul style="list-style-type: none"> <li>• Works systematically through tasks and attempts to prioritise</li> <li>• Discusses the relative importance of tasks with more senior colleagues.</li> <li>• Understands importance of communicating progress with other team members</li> </ul> <p><b>Patient safety</b></p> <ul style="list-style-type: none"> <li>• Participates in clinical governance</li> </ul> | <p><b>Area 4.1</b></p> |  |  |

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|  | <p>processes</p> <ul style="list-style-type: none"> <li>• Respects and follows local protocols and guidelines</li> <li>• Takes direction from the team members on patient safety</li> <li>• Discusses risks of treatments with patients and is able to help patients make decisions about their treatment</li> <li>• Ensures the safe use of equipment</li> <li>• Acts promptly when patient condition deteriorates</li> <li>• Always escalates concerns promptly</li> </ul> <p><b>Infection control</b></p> <ul style="list-style-type: none"> <li>• Performs simple clinical procedures whilst maintaining full aseptic precautions</li> <li>• Follows local infection control protocols</li> <li>• Explains infection control protocols to students and to patients and their relatives</li> <li>• Aware of the risks of nosocomial infections.</li> </ul>  |  |  |  |
| <p><b>Examples and descriptors for CCT</b></p> | <p><b>Patient assessment</b></p> <ul style="list-style-type: none"> <li>• Undertakes patient assessment (including history and examination) under difficult circumstances. Examples include: <ul style="list-style-type: none"> <li>○ Limited time available (Emergency situations, Outpatients, ward referral),</li> <li>○ Severely ill patients</li> <li>○ Angry or distressed patients or relatives</li> </ul> </li> <li>• Uses and interprets findings adjuncts to basic examination appropriately e.g. electrocardiography, spirometry, ankle brachial pressure index, fundoscopy, sigmoidoscopy</li> <li>• Recognises and deals with complex situations of communication, accommodates disparate needs and develops strategies to cope</li> <li>• Is sensitive to patients cultural concerns and norms</li> <li>• Is able to explain diagnoses and medical procedures in ways that enable patients understand and make decisions about their own health care.</li> </ul> <p><b>Clinical reasoning</b></p> <ul style="list-style-type: none"> <li>• In a complex case, develops a provisional diagnosis and a differential diagnosis on the basis of the clinical evidence, institutes an appropriate investigative and therapeutic plan, seeks appropriate support from others and takes account of the patients wishes</li> </ul> <p><b>Record keeping</b></p> <ul style="list-style-type: none"> <li>• Produces comprehensive, focused and informative records which summarise complex cases accurately</li> </ul> |  |  |  |

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|  | <p><b>Time management</b></p> <ul style="list-style-type: none"> <li>• Organises, prioritises and manages daily work efficiently and effectively</li> <li>• Works with, guides, supervises and supports junior colleagues</li> <li>• Starting to lead and direct the clinical team in effective fashion</li> </ul> <p><b>Patient safety</b></p> <ul style="list-style-type: none"> <li>• Leads team discussion on risk assessment, risk management, clinical incidents</li> <li>• Works to make organisational changes that will reduce risk and improve safety</li> <li>• Promotes patients safety to more junior colleagues</li> <li>• Recognises and reports untoward or significant events</li> <li>• Undertakes a root cause analysis</li> <li>• Shows support for junior colleagues who are involved in untoward events</li> </ul> <p><b>Infection control</b></p> <ul style="list-style-type: none"> <li>• Performs complex clinical procedures whilst maintaining full aseptic precautions</li> <li>• Manages complex cases effectively in collaboration with infection control specialists</li> </ul> | 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 |
|------------------|---|----------------------------------|---------------------------------------|---|
| <b>Category</b>  | <p><b>Being a good communicator</b></p> <p>To include:</p> <ul style="list-style-type: none"> <li>• Communication with patients (GMP Domains: 1, 3, 4)</li> <li>• Breaking bad news (GMP Domains: 1, 3, 4)</li> <li>• Communication with colleagues (GMP Domains: 1, 3)</li> </ul>  | N/A                              |                                       |   |
| <b>Objective</b> | <p><b>Communication with patients</b></p> <ul style="list-style-type: none"> <li>• To establish a doctor/patient relationship characterised by understanding, trust, respect, empathy and confidentiality</li> <li>• To communicate effectively by listening to patients, asking for and respecting their views about their health and responding to their concerns and preferences</li> <li>• To cooperate effectively with healthcare professionals involved in patient care</li> <li>• To provide appropriate and timely information to patients and their families</li> </ul> <p><b>Breaking bad news</b></p> <ul style="list-style-type: none"> <li>• To deliver bad news according to the needs of individual patients</li> </ul> |                                  | PBA, DOPS, Mini CEX, Mini PAT and CBD | Desirable:<br>Human factors   |



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|------------------|--|--|--|--|
|                  | <p><b>Communication with Colleagues</b></p> <ul style="list-style-type: none"> <li>• To recognise and accept the responsibilities and role of the doctor in relation to other healthcare professionals.</li> <li>• To communicate succinctly and effectively with other professionals as appropriate</li> <li>• To present a clinical case in a clear, succinct and systematic manner</li> </ul>   |  |  |  |
| <b>Knowledge</b> | <p><b>Communication with patients</b></p> <ul style="list-style-type: none"> <li>• Understands questioning and listening techniques</li> <li>• Understanding that poor communication is a cause of complaints/ litigation</li> </ul> <p><b>Breaking bad news</b></p> <ul style="list-style-type: none"> <li>• In delivering bad news understand that: <ul style="list-style-type: none"> <li>○ The delivery of bad news affects the relationship with the patient</li> <li>○ Patient have different responses to bad news</li> <li>○ Bad news is confidential but the patient may wish to be accompanied</li> <li>○ Once the news is given, patients are unlikely to take in anything else</li> <li>○ Breaking bad news can be extremely stressful for both parties</li> <li>○ It is important to prepare for breaking bad news</li> </ul> </li> </ul> <p><b>Communication and working with colleagues</b></p> <ul style="list-style-type: none"> <li>• Understand the importance of working with colleagues, in particular: <ul style="list-style-type: none"> <li>○ The roles played by all members of a multi-disciplinary team</li> <li>○ The features of good team dynamics</li> <li>○ The principles of effective inter-professional collaboration</li> <li>○ The principles of confidentiality</li> </ul> </li> </ul> |  |  |  |
| <b>Skills</b>    | <p><b>Communication with patients</b></p> <ul style="list-style-type: none"> <li>• Establish a rapport with the patient and any relevant others (e.g. carers)</li> <li>• Listen actively and question sensitively to guide the patient and to clarify information</li> <li>• Identify and manage communication barriers, tailoring language to the individual patient and others and using interpreters when indicated</li> <li>• Deliver information compassionately, being alert to and managing their and your emotional response (anxiety, antipathy etc.)</li> <li>• Use, and refer patients to appropriate written and other evidence based information sources</li> <li>• Check the patient's understanding, ensuring that all their concerns/questions have been covered</li> <li>• Make accurate contemporaneous records of</li> </ul>  |  |  |  |

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|                  | <p>the discussion</p> <ul style="list-style-type: none"> <li>• Manage follow-up effectively and safely utilising a variety of methods (e.g. phone call, email, letter)</li> <li>• Provide brief advice on health and self care e.g. use of alcohol and drugs.</li> <li>• Ensure appropriate referral and communications with other healthcare professional resulting from the consultation are made accurately and in a timely manner</li> </ul> <p><b>Breaking bad news</b></p> <ul style="list-style-type: none"> <li>• Demonstrate to others good practice in breaking bad news</li> <li>• Recognises the impact of the bad news on the patient, carer, supporters, staff members and self</li> <li>• Act with empathy, honesty and sensitivity avoiding undue optimism or pessimism</li> </ul> <p><b>Communication with colleagues</b></p> <ul style="list-style-type: none"> <li>• Communicate with colleagues accurately, clearly and promptly</li> <li>• Utilise the expertise of the whole multi-disciplinary team</li> <li>• Participate in, and co-ordinate, an effective hospital at night or hospital out of hours team</li> <li>• Communicate effectively with administrative bodies and support organisations</li> <li>• Prevent and resolve conflict and enhance collaboration</li> </ul> |  |  |  |
| <b>Behaviour</b> | <p><b>Communication with patients</b></p> <ul style="list-style-type: none"> <li>• Approach the situation with courtesy, empathy, compassion and professionalism</li> <li>• Demonstrate an inclusive and patient centred approach with respect for the diversity of values in patients, carers and colleagues</li> </ul> <p><b>Breaking bad news</b></p> <ul style="list-style-type: none"> <li>• Behave with respect, honesty and empathy when breaking bad news</li> <li>• Respect the different ways people react to bad news</li> </ul> <p><b>Communication with colleagues</b></p> <ul style="list-style-type: none"> <li>• Be aware of the importance of, and take part in, multi-disciplinary teamwork, including adoption of a leadership role</li> <li>• Foster an environment that supports open and transparent communication between team members</li> <li>• Ensure confidentiality is maintained during communication with the team</li> <li>• Be prepared to accept additional duties in situations of unavoidable and unpredictable absence of colleagues</li> </ul> <p>Act appropriately on any concerns about own or colleagues' health e.g. use of alcohol and/or other drugs.</p>   |  |  |  |

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| <b>Examples and descriptors for Core Surgical Training</b> | <ul style="list-style-type: none"> <li>• Conducts a simple consultation with due empathy and sensitivity and writes accurate records thereof</li> <li>• Recognises when bad news must be imparted.</li> <li>• Able to break bad news in planned settings following preparatory discussion with seniors</li> <li>• Accepts his/her role in the healthcare team and communicates appropriately with all relevant members thereof</li> </ul>  |  |  |  |
| <b>Examples and descriptors for CCT</b>                    | <ul style="list-style-type: none"> <li>• Shows mastery of patient communication in all situations, anticipating and managing any difficulties which may occur</li> <li>• Able to break bad news in both unexpected and planned settings</li> <li>• Fully recognises the role of, and communicates appropriately with, all relevant team members</li> <li>• Predicts and manages conflict between members of the healthcare team</li> <li>• Beginning to take leadership role as appropriate, fully respecting the skills, responsibilities and viewpoints of all team members</li> </ul> |  |  |  |

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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   |
| <b>Category</b>  | <b>Teaching and Training</b> (GMP Domains: 1, 3)  | N/A                              |  |   |
| <b>Objective</b> | <ul style="list-style-type: none"> <li>• To teach to a variety of different audiences in a variety of different ways</li> <li>• To assess the quality of the teaching</li> <li>• To train a variety of different trainees in a variety of different ways</li> <li>• To plan and deliver a training programme with appropriate assessments</li> </ul>  |                                  | Mini PAT, Portfolio assessment at ARCP | <p>Strongly recommended Teaching and Assessment</p> <p>Desirable: Presentation skills<br/>Reflective practice</p> |
| <b>Knowledge</b> | <ul style="list-style-type: none"> <li>• Understand relevant educational theory and principles relevant to medical education</li> <li>• Understand the structure of an effective appraisal interview</li> <li>• Understand the roles to the bodies involved in medical education</li> <li>• Understand learning methods and effective learning objectives and outcomes</li> <li>• Differentiate between appraisal, assessment and performance review</li> <li>• Differentiate between formative and summative assessment</li> <li>• Understand the role, types and use of workplace-based assessments</li> <li>• Understand the appropriate course of action to assist a trainee in difficulty</li> </ul> |                                  |  |   |

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| <b>Skills</b>  | <ul style="list-style-type: none"> <li>• Critically evaluate relevant educational literature</li> <li>• Vary teaching format and stimulus, appropriate to situation and subject</li> <li>• Provide effective feedback and promote reflection</li> <li>• Conduct developmental conversations as appropriate eg: appraisal, supervision, mentoring</li> <li>• Deliver effective lecture, presentation, small group and bed side teaching sessions</li> <li>• Participate in patient education</li> <li>• Lead departmental teaching programmes including journal clubs</li> <li>• Recognise the trainee in difficulty and take appropriate action</li> <li>• Be able to identify and plan learning activities in the workplace</li> </ul> |  |  |  |
| <b>Behaviour</b>   | <ul style="list-style-type: none"> <li>• In discharging educational duties respect the dignity and safety of patients at all times</li> <li>• Recognise the importance of the role of the physician as an educator</li> <li>• Balances the needs of service delivery with education</li> <li>• Demonstrate willingness to teach trainees and other health workers</li> <li>• Demonstrates consideration for learners</li> <li>• Acts to ensure equality of opportunity for students, trainees, staff and professional colleagues</li> <li>• Encourage discussions with colleagues in clinical settings to share understanding</li> <li>• Maintains honesty, empathy and objectivity during appraisal and assessment</li> </ul>          |  |  |  |
| <b>Examples and descriptors for Core Surgical Training</b> | <ul style="list-style-type: none"> <li>• Prepares appropriate materials to support teaching episodes</li> <li>• Seeks and interprets simple feedback following teaching</li> <li>• Supervises a medical student, nurse or colleague through a simple procedure</li> <li>• Plans, develops and delivers small group teaching to medical students, nurses or colleagues</li> </ul>  |  |  |  |
| <b>Examples and descriptors for CCT</b>                    | <ul style="list-style-type: none"> <li>• Performs a workplace based assessment including giving appropriate feedback</li> <li>• Devises a variety of different assessments (eg MCQs, WPBAs)</li> <li>• Appraises a medical student, nurse or colleague</li> <li>• Acts as a mentor to a medical student, nurses or colleague</li> <li>• Plans, develops and delivers educational programmes with clear objectives and outcomes</li> <li>• Plans, develops and delivers an assessment programme to support educational activities</li> </ul>   |  |  |  |

|                  | Professional Behaviour and Leadership   | Mapping to Leadership Curriculum              | Assessment technique   | Areas in which simulation should be used to develop relevant skills |
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| <b>Category</b>  | <p><b>Keeping up to date and understanding how to analyse information</b></p> <p>Including</p> <ul style="list-style-type: none"> <li>• <i>Ethical research</i> (GMP Domains: 1)</li> <li>• Evidence and guidelines (GMP Domains: 1)</li> <li>• Audit (GMP Domains: 1, 2)</li> <li>• Personal development</li> </ul>  | <b>Area 1.3</b>                               |  |   |
| <b>Objective</b> | <ul style="list-style-type: none"> <li>• To understand the results of research as they relate to medical practise</li> <li>• To participate in medical research</li> <li>• To use current best evidence in making decisions about the care of patients</li> <li>• To construct evidence based guidelines and protocols</li> <li>• To complete an audit of clinical practice</li> <li>• To actively seek opportunities for personal development</li> <li>• To participate in continuous professional development activities</li> </ul>   | <p><b>Area 1.3</b></p> <p><b>Area 1.3</b></p> | Mini PAT, CBD, Portfolio assessment at ARCP, MRCS and specialty FRCS |   |
| <b>Knowledge</b> | <ul style="list-style-type: none"> <li>• Understands GMC guidance on good practice in research</li> <li>• Understands the principles of research governance</li> <li>• Understands research methodology including qualitative, quantitative, bio-statistical and epidemiological research methods</li> <li>• Understands of the application of statistics as applied to medical practise</li> <li>• Outline sources of research funding</li> <li>• Understands the principles of critical appraisal</li> <li>• Understands levels of evidence and quality of evidence</li> <li>• Understands guideline development together with their roles and limitations</li> <li>• Understands the different methods of obtaining data for audit</li> <li>• Understands the role of audit in improving patient care and risk management</li> <li>• Understands the audit cycle</li> <li>• Understands the working and uses of national and local databases used for audit such as specialty data collection systems, cancer registries etc</li> <li>• To demonstrate knowledge of the importance of best practice, transparency and consistency</li> </ul> | <b>Area 1.3</b>                               |  |   |
| <b>Skills</b>    | <ul style="list-style-type: none"> <li>• Develops critical appraisal skills and applies these when reading literature</li> <li>• Devises a simple plan to test a hypothesis</li> <li>• Demonstrates the ability to write a scientific paper</li> <li>• Obtains appropriate ethical research approval</li> </ul>   |   |  |   |

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|  | <ul style="list-style-type: none"> <li>• Uses literature databases</li> <li>• Contribute to the construction, review and updating of local (and national) guidelines of good practice using the principles of evidence based medicine</li> <li>• Designs, implements and completes audit cycles</li> <li>• Contribute to local and national audit projects as appropriate</li> <li>• To use a reflective approach to practice with an ability to learn from previous experience</li> <li>• To use assessment, appraisal, complaints and other feedback to discuss and develop an understanding of own development needs</li> </ul>  | Area 1.3                 |  |  |
| <b>Behaviour</b>   | <ul style="list-style-type: none"> <li>• Follows guidelines on ethical conduct in research and consent for research</li> <li>• Keep up to date with national reviews and guidelines of practice (e.g. NICE)</li> <li>• Aims for best clinical practice at all times, responding to evidence based medicine while recognising the occasional need to practise outside clinical guidelines</li> <li>• Recognise the need for audit in clinical practice to promote standard setting and quality assurance</li> <li>• To be prepared to accept responsibility</li> <li>• Show commitment to continuing professional development</li> </ul>   | Area 1.3<br>Area 1.3     |  |  |
| <b>Examples and descriptors for Core Surgical Training</b> | <ul style="list-style-type: none"> <li>• Defines ethical research and demonstrates awareness of GMC guidelines</li> <li>• Differentiates audit and research and understands the different types of research approach e.g. qualitative and quantitative</li> <li>• Knows how to use literature databases</li> <li>• Demonstrates good presentation and writing skills</li> <li>• Participates in departmental or other local journal club</li> <li>• Critically reviews an article to identify the level of evidence</li> <li>• Attends departmental audit meetings</li> <li>• Contributes data to a local or national audit</li> <li>• Identifies a problem and develops standards for a local audit</li> <li>• Describes the audit cycle and take an audit through the first steps</li> <li>• Seeks feedback on performance from clinical supervisor/mentor/patients/carers/service users</li> </ul> | Area 1.3<br><br>Area 1.3 |  |  |
| <b>Examples and descriptors for CCT</b>                    | <ul style="list-style-type: none"> <li>• Demonstrates critical appraisal skills in relation to the published literature</li> <li>• Demonstrates ability to apply for appropriate ethical research approval</li> <li>• Demonstrates knowledge of research organisation and funding sources</li> <li>• Demonstrates ability to write a scientific paper</li> <li>• Leads in a departmental or other local journal club</li> <li>• Contributes to the development of local or</li> </ul>   |                          |  |  |

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|  | <p>national clinical guidelines or protocols</p> <ul style="list-style-type: none"> <li>Organise or lead a departmental audit meeting</li> <li>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</li> <li>Seeks opportunity to visit other departments and learn from other professionals</li> </ul> | <p><b>Area 1.3</b></p> <p><b>Area 1.3</b></p> |  |  |
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|                      | Professional Behaviour and Leadership  | Mapping to Leadership Curriculum  | Assessment technique    | Areas in which simulation should be used to develop relevant skills |
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| <b>Sub-category:</b> | <p><b>Manager</b> including</p> <ul style="list-style-type: none"> <li>Self Awareness and self management (GMP Domains: 1)</li> <li>Team-working (GMP Domains: 1, 3)</li> <li>Leadership (GMP Domains: 1, 2, 3)</li> <li>Principles of quality and safety improvement (GMP Domains: 1, 3, 4)</li> <li>Management and NHS structure (GMP Domains: 1)</li> </ul>   | <p><b>Area 1.1 and 1.2</b></p> <p><b>Area 2</b></p> <p><b>Area 4.2, 4.3, 4.4</b></p> <p><b>Area 3</b></p> |                         |   |
| <b>Objective</b>     | <p><b>Self awareness and self management</b></p> <ul style="list-style-type: none"> <li>To recognise and articulate one's own values and principles, appreciating how these may differ from those of others</li> <li>To identify one's own strengths, limitations and the impact of their behaviour</li> <li>To identify their own emotions and prejudices and understand how these can affect their judgement and behaviour</li> <li>To obtain, value and act on feedback from a variety of sources</li> <li>To manage the impact of emotions on behaviour and actions</li> <li>To be reliable in fulfilling responsibilities and commitments to a consistently high standard</li> <li>To ensure that plans and actions are flexible, and take into account the needs and requirements of others</li> <li>To plan workload and activities to fulfil work requirements and commitments with regard to their own personal health</li> </ul> | <p><b>Area 1.1 and 1.2</b></p>  | <p>Mini PAT and CBD</p> | <p>Desirable: Patient safety Human factors</p>                      |











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|                  | <ul style="list-style-type: none"> <li>• Take an active role in promoting the best use of healthcare resources</li> <li>• Work with stakeholders to create and sustain a patient-centred service</li> <li>• Employ new technologies appropriately, including information technology</li> <li>• Conduct an assessment of the community needs for specific health improvement measures</li> </ul>  |   |  |  |
| <b>Behaviour</b> | <p><b>Self awareness and self management</b></p> <ul style="list-style-type: none"> <li>• To adopt a patient-focused approach to decisions that acknowledges the right, values and strengths of patients and the public</li> <li>• To recognise and show respect for diversity and differences in others</li> <li>• To be conscientious, able to manage time and delegate</li> <li>• To recognise personal health as an important issue</li> </ul> <p><b>Team working</b></p> <ul style="list-style-type: none"> <li>• Encourage an open environment to foster and explore concerns and issues about the functioning and safety of team working</li> <li>• Recognise limits of own professional competence and only practise within these.</li> <li>• Recognise and respect the skills and expertise of others</li> <li>• Recognise and respect the request for a second opinion</li> <li>• Recognise the importance of induction for new members of a team</li> <li>• Recognise the importance of prompt and accurate information sharing with Primary Care team following hospital discharge</li> </ul> <p><b>Leadership</b></p> <ul style="list-style-type: none"> <li>• Demonstrate compliance with national guidelines that influence healthcare provision</li> <li>• Articulate strategic ideas and use effective influencing skills</li> <li>• Understand issues and potential solutions before acting</li> <li>• Appreciate the importance of involving the public and communities in developing health services</li> <li>• Participate in decision making processes beyond the immediate clinical care setting</li> <li>• Demonstrate commitment to implementing proven improvements in clinical practice and services</li> <li>• Obtain the evidence base before declaring effectiveness of changes</li> </ul> <p><b>Quality and safety improvement</b></p> <ul style="list-style-type: none"> <li>• Participate in safety improvement strategies such as critical incident reporting</li> <li>• Develop reflection in order to achieve insight into own professional practice</li> <li>• Demonstrates personal commitment to improve</li> </ul> | <p><b>Area 1.1 and 1.2</b></p> <p><b>Area 2</b></p> <p><b>Area 5</b></p> <p><b>Area 4.2, 4.3, 4.4</b></p> |  |  |

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|   | <p>own performance in the light of feedback and assessment</p> <ul style="list-style-type: none"> <li>Engage with an open no blame culture</li> <li>Respond positively to outcomes of audit and quality improvement</li> <li>Co-operate with changes necessary to improve service quality and safety</li> </ul> <p><b>Management and NHS Structures</b></p> <ul style="list-style-type: none"> <li>Recognise the importance of equitable allocation of healthcare resources and of commissioning</li> <li>Recognise the role of doctors as active participants in healthcare systems</li> <li>Respond appropriately to health service objectives and targets and take part in the development of services</li> <li>Recognise the role of patients and carers as active participants in healthcare systems and service planning</li> <li>Show willingness to improve managerial skills (e.g. management courses) and engage in management of the service</li> </ul>   | <p><b>Area 3</b></p>  |  |  |
| <p><b>Examples and descriptors for Core Surgical Training</b></p> | <p><b>Self awareness and self management</b></p> <ul style="list-style-type: none"> <li>Obtains 360° feedback as part of an assessment</li> <li>Participates in peer learning and explores leadership styles and preferences</li> <li>Timely completion of written clinical notes</li> <li>Through feedback discusses and reflects on how a personally emotional situation affected communication with another person</li> <li>Learns from a session on time management</li> </ul> <p><b>Team working</b></p> <ul style="list-style-type: none"> <li>Works well within the multidisciplinary team and recognises when assistance is required from the relevant team member</li> <li>Invites and encourages feedback from patients</li> <li>Demonstrates awareness of own contribution to patient safety within a team and is able to outline the roles of other team members.</li> <li>Keeps records up-to-date and legible and relevant to the safe progress of the patient.</li> <li>Hands over care in a precise, timely and effective manner</li> <li>Supervises the process of finalising and submitting operating lists to the theatre suite</li> </ul> <p><b>Leadership</b></p> <ul style="list-style-type: none"> <li>Complies with clinical governance requirements of organisation</li> <li>Presents information to clinical and service managers (eg audit)</li> <li>Contributes to discussions relating to relevant issues e.g. workload, cover arrangements using clear and concise evidence and information</li> </ul> <p><b>Quality and safety improvement</b></p> <ul style="list-style-type: none"> <li>Understands that clinical governance is the overarching framework that unites a range of quality</li> </ul> | <p><b>Area 1.1 and 1.2</b></p> <p><b>Area 2</b></p> <p><b>Area 5</b></p> <p><b>Area 4.2, 4.3, 4.4</b></p> |  |  |

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|   | <p>improvement activities</p> <ul style="list-style-type: none"> <li>• Participates in local governance processes</li> <li>• Maintains personal portfolio</li> <li>• Engages in clinical audit</li> <li>• Questions current systems and processes</li> </ul> <p><b>Management and NHS Structures</b></p> <ul style="list-style-type: none"> <li>• Participates in audit to improve a clinical service</li> <li>• Works within corporate governance structures</li> <li>• Demonstrates ability to manage others by teaching and mentoring juniors, medical students and others, delegating work effectively,</li> <li>• Highlights areas of potential waste</li> </ul>   | <b>Area 3</b>   |  |  |
| <b>Examples and descriptors for CCT</b> | <p><b>Self awareness and self management</b></p> <ul style="list-style-type: none"> <li>• Participates in case conferences as part of multidisciplinary and multi agency team</li> <li>• Responds to service pressures in a responsible and considered way</li> <li>• Liaises with colleagues in the planning and implementation of work rotas</li> </ul> <p><b>Team working</b></p> <ul style="list-style-type: none"> <li>• Discusses problems within a team and provides an analysis and plan for change</li> <li>• Works well in a variety of different teams</li> <li>• Shows the leadership skills necessary to lead the multidisciplinary team</li> <li>• Beginning to leads multidisciplinary team meetings <ul style="list-style-type: none"> <li>○ Promotes contribution from all team members</li> <li>○ Fosters an atmosphere of collaboration</li> <li>○ Ensures that team functioning is maintained at all times.</li> <li>○ Recognises need for optimal team dynamics</li> <li>○ Promotes conflict resolution</li> </ul> </li> <li>• Recognises situations in which others are better equipped to lead or where delegation is appropriate</li> </ul> <p><b>Leadership</b></p> <ul style="list-style-type: none"> <li>• Shadows NHS managers</li> <li>• Attends multi-agency conference</li> <li>• Uses and interprets departments performance data and information to debate services</li> <li>• Participates in clinical committee structures within an organisation</li> </ul> <p><b>Quality and safety improvement</b></p> <ul style="list-style-type: none"> <li>• Able to define key elements of clinical governance</li> <li>• Demonstrates personal and service performance</li> <li>• Designs audit protocols and completes audit cycle</li> <li>• Identifies areas for improvement and initiates improvement projects</li> <li>• Supports and participates in the implementation of change</li> </ul> | <p><b>Area 1.1 and 1.2</b></p> <p><b>Area 2</b></p> <p><b>Area 5</b></p> <p><b>Area 4.2, 4.3, 4.4</b></p> |  |  |

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|  | <ul style="list-style-type: none"> <li>Leads in review of patient safety issue</li> <li>Understands change management</li> </ul> <p><b>Management and NHS Structure</b></p> <ul style="list-style-type: none"> <li>Can describe in outline the roles of primary care, including general practice, public health, community, mental health, secondary and tertiary care services within healthcare</li> <li>Participates fully in clinical coding arrangements and other relevant local activities</li> <li>Can describe the relationship between PCTs/Health Boards, General Practice and Trusts including relationships with local authorities and social services</li> <li>Participate in team and clinical directorate meetings including discussions around service development</li> <li>Discuss the most recent guidance from the relevant health regulatory agencies in relation to the surgical specialty</li> <li>Describe the local structure for health services and how they relate to regional or devolved administration structures</li> <li>Discusses funding allocation processes from central government in outline and how that might impact on the local health organisation</li> </ul> | <b>Area 3</b> |  |  |
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|                      | Professional Behaviour and Leadership  | Mapping to Leadership Curriculum | Assessment technique                | <b>Areas in which simulation should be used to develop relevant skills</b> |
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| <b>Sub-category:</b> | <b>Promoting good health</b> (GMP Domains: 1, 2, 3)  |                                  |                                     |  |
| <b>Objective</b>     | <ul style="list-style-type: none"> <li>To demonstrate an understanding of the determinants of health and public policy in relation to individual patients</li> <li>To promote supporting people with long term conditions to self-care</li> <li>To develop the ability to work with individuals and communities to reduce levels of ill health and to remove inequalities in healthcare provision</li> <li>To promote self care</li> </ul> | N/A                              | MRCS, specialty FRCS, CBD, Mini PAT |  |

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



|                                |   |  |  |  |
|--------------------------------|---|--|--|--|
| <b>descriptors<br/>for CCT</b> | <ul style="list-style-type: none"> <li>• Develops management plans in partnership with the patient that are pertinent to the patients long term condition</li> <li>• Engages with relevant external agencies to promote improving patient care</li> <li>• Support small groups in a simple health promotion activity</li> <li>• Discuss with small groups the factors that have an influence on their health and describe steps they can undertake to address these</li> <li>• 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.</li> </ul> |  |  |  |
|--------------------------------|---|--|--|--|

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

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

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

# **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 3<sup>rd</sup> month of the first four-month placement in a training year
- in the 5<sup>th</sup> month of the first six-month placement in a training year
- in the 5<sup>th</sup> 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.

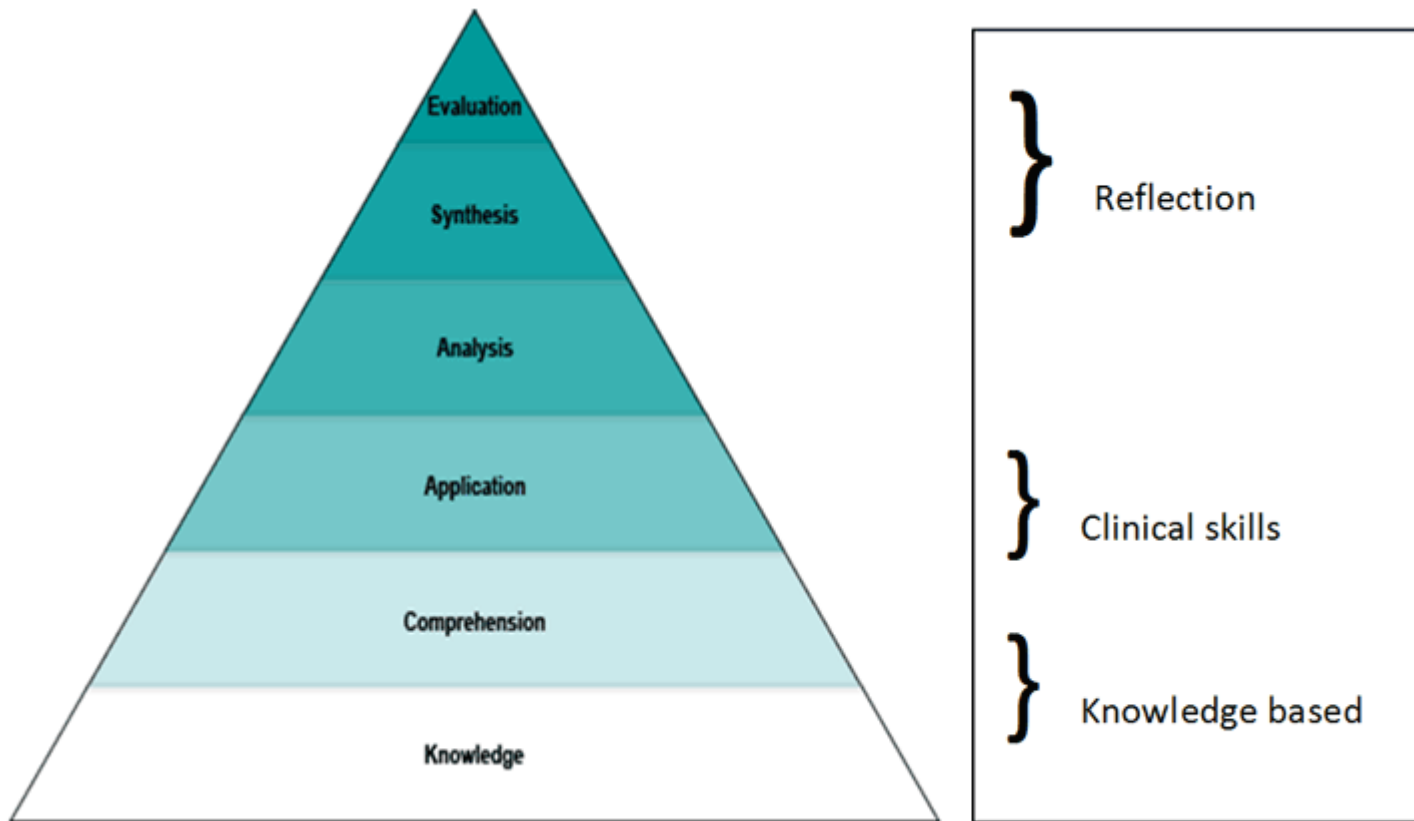
### [2. Discussion tools](#)

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](http://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](http://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.

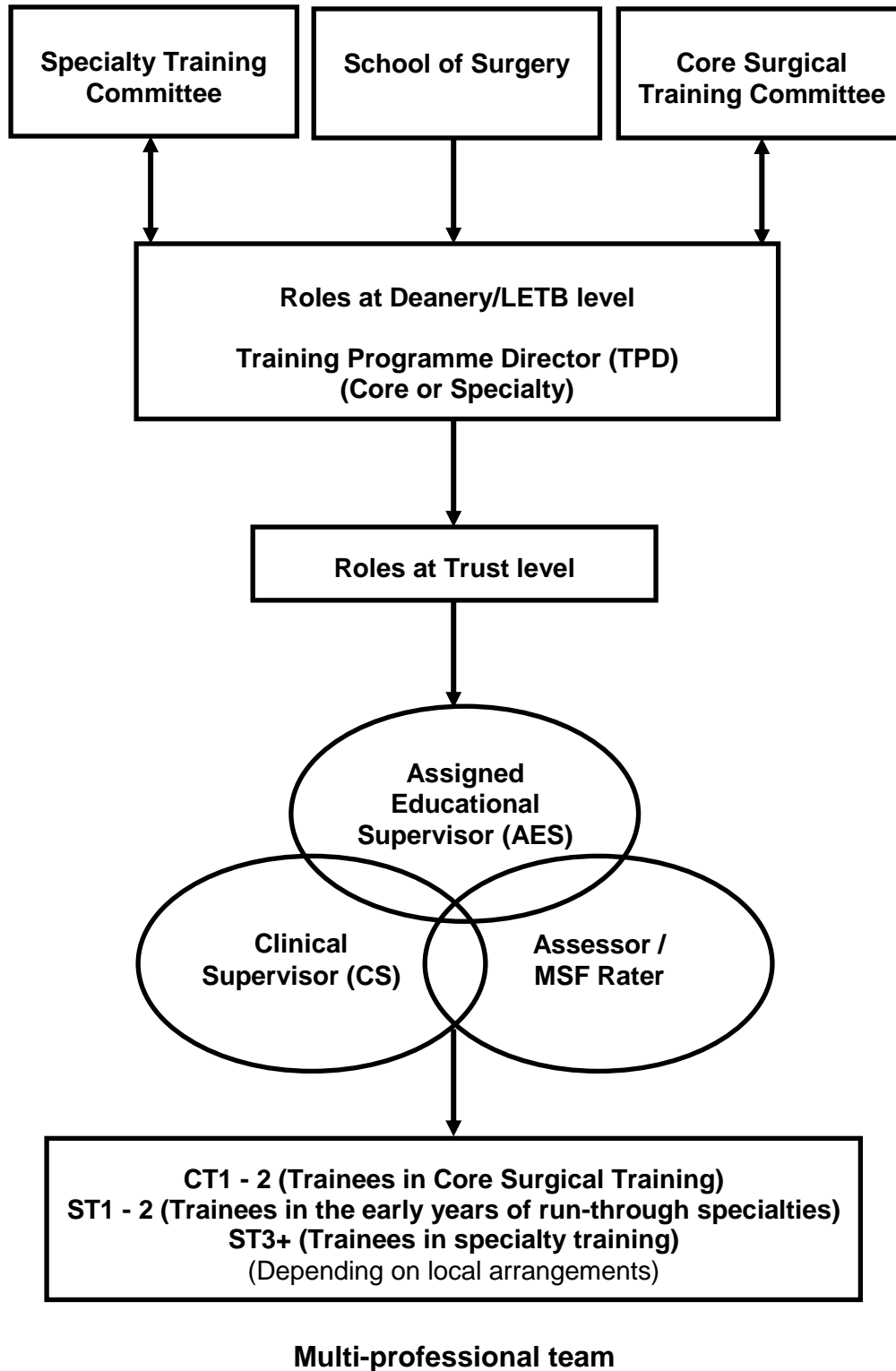
It may be entirely appropriate for a surgeon involved in training to hold more than one role (e.g. Assigned Educational Supervisor, Clinical Supervisor and Assessor) where the workload is manageable and the trainee continues to receive training input from several sources. The role of assessor is not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