

HST Training Programme and Curriculum

Plastic, Reconstructive and Aesthetic Surgery

SAC MALTA

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1. Definition of Specialty

Plastic, Reconstructive and Aesthetic 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.

The speciality is concerned with the care of patients with defects or deformities which may be congenital or acquired. Acquired defects can result from disease, trauma, burns, tumours, degeneration or ageing. The aim of the speciality is to restore or improve function and appearance by corrective and / or reconstructive procedures.

2. Programme Outline and Objectives

The aim of the programme is to produce plastic surgeons competent to work as consultant plastic surgeons. 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 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.

SELECTION AND ASSESSMENT

2.1 Higher Specialist Training will be a five-year continuum in approved full time clinical posts.

There should be some flexibility in how this is arranged such that training on a part time basis will be credited on a pro rata basis. After successful completion of training the trainee will be awarded a Certificate of Completion of Specialist Training (CCST) by the Specialist Advisory Committee (SAC). Sub-specialty training may start during the fifth year and may continue thereafter.

2.2 Entry into Higher Specialist Training

Candidates for training in the specialty must:

- a) Be in possession of a recognised medical degree.
- b) Hold full registration with the Medical Council of Malta.
- c) Possess a Certificate of Completion of Basic Specialist Training (CCBST).
Selection for training in the specialty is dependent on satisfactory completion of basic specialist training in the generality of surgery.

It is important for basic surgical trainees to have the opportunity of experience in the specialty as part of the "common trunk".

3. Annual Review of Competence Progression

- 3.1 The trainee's progress will be reviewed at the end of each HST year. This review is an internal one. Panel members are appointed by the Head of Postgraduate Training and may include:

Head of Postgraduate Training or his nominee
Training Programme Director
SAC Representative
Assigned educational supervisors (including AESs not directly responsible for the trainee's placements)

The following areas of training will be reviewed:

- a.) Theoretical Knowledge
- b.) Practical Skills including Logbook
- c.) Research

The following are the possible outcomes of the review:

1. Trainee is achieving progress and competencies at the expected rate.
2. Development of specific competencies 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 competencies.
5. Incomplete evidence presented - additional training time may be required.
6. Gained all required competencies; will be recommended as having completed the training programme and for an award of a CCST.

This review meeting will be used to outline the plan for the next training year and offer guidance accordingly.

3.2 Log Books

The trainee will keep a record of his experience in a logbook. He is required to produce this at his annual assessments and to the accrediting authority before the granting of a CCST.

4. Completion of Training

The Certificate of Completion of Specialist Training (CCST) is awarded by the Specialist Accreditation Committee (SAC) of Malta after recommendation by the Association of Surgeons of Malta following the advice of the postgraduate training personnel in the Department of Plastic, Reconstructive and Aesthetic Surgery. Eligibility for accreditation depends on achieving ALL of the following three requirements :

- a.) Confirmation of competence in the curriculum described below by the training consultants and the director of the training programme.
- b.) Presentation of logbook
- c.) Exit Examination: European Board of Plastic, Reconstructive and Aesthetic Surgery (EBOPRAS) Fellowship or FRCS (Plas).

After award of the CCST the trainee will be eligible to enter into independent practice.

5. Training Programme

- 5.1 The trainee must train in more than one Unit and be exposed to the work of at least six Consultants. During training he should assume increasing responsibility, under appropriate supervision, for conditions of progressively increasing complexity. The Units should have organised teaching programmes, instruction in basic sciences, administration and management, and audit meetings. Two sessions must be allocated for research or private study within the working week.
- 5.2 A minimum of two years of overseas training will be required to obtain the CCST. Such moves should be arranged between the programme directors concerned, with the approval of the SAC. This period overseas equates to Years 4 - 5.
- 5.3 The local Unit should set up rotations with others overseas and develop programmes to meet the requirements set out above. In planning these rotations it should be remembered that:
 - Units should link up which can complement each other's training.
 - Programmes need not be the same for every trainee.
 - Consideration should be given to whether the programme can provide sub-specialty training for 6 months or a year (in the 5th year) without compromising the training of more junior trainees.
 - Plans for rotations must be submitted to the SAC for approval.
- 5.4 In summary, training will be progressive and will be divided into Years 1 & 2, Years 3 & 4, and Year 5. The programme for the first two years of Higher Specialist Training (Basic) should cover the whole spectrum of the specialty at a basic level, concentrating mainly on principles of management.

Clinical experience should be graded and should progress from assisting at operations, through supervised operating of simpler procedures to independent operating on simpler procedures. Sub-specialty Surgery at this stage should largely be confined to assisting. Outpatient attendance should progress from "sitting in" to seeing returned patients under Consultant supervision.
- 5.5 During Years 3 & 4 the trainee should continue the progression towards increasing responsibility. He should have further experience at a higher level in Reconstructive and Aesthetic Surgery of the face, breasts, trunk and limbs; surgical management of metastatic malignant disease; and in the following sub-specialties:

Burns
Hands
Head and Neck Tumours
Cleft Lip and Palate
Reconstruction of Genitalia
Oculoplastic Surgery
Limb Trauma

Training must take place in an approved Unit or Units. Training in the complete spectrum of Aesthetic Surgery is unlikely to be possible in NHS hospitals, and arrangements should be made for trainees to accompany Consultants in their private practice to gain this experience. Alternatively, secondment for a period of whole time experience should be arranged.

- 5.6 In the fifth year the trainee may continue general specialty training at a more advanced level or have the opportunity to enter advanced sub-specialty training for all or part of the time.
- 5.7 Training in operative and clinical practice will be undertaken throughout the continuum of training. Where possible during the Intermediate years of the continuum, operative training should be organised to coincide with related modules. It is expected that part of the clinical and operative training in Aesthetic Surgery that is necessary for competent independent practice may need to be conducted in the private sector. Trainees should be enabled to attend Consultants' private operating lists and consulting rooms.

The Programme Director should be responsible for timetabling modules, of which two or more could run concurrently. At the end of each year the trainee will be formally assessed.

6. The Syllabus

6.1 Standards for Knowledge and Clinical Skills

Each topic within a stage has a competence level ascribed to it for knowledge ranging from 1 to 4 that indicates the depth of knowledge required:

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

6.2 Standards for Technical Competences and Procedures

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/ assisted:
 - 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:
 - 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:
 - 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 dealing with complications:
 - 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 consultant surgeon in Malta to function.
 - Is capable of supervising trainees.

6.3 Competency Levels within Modules

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 Year programme.

C. Advanced level competency: This third tier of topics includes the most complex topics in each module.

For the purposes of assessment at Intermediate Years and the Exit Examination in Plastic Surgery, the level of competency deemed appropriate for the end of training 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.

TOPICS FOR TRAINING

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TRAINING YEARS 1 - 4

AESTHETIC SURGERY

Training in aesthetic surgery is an integral part of the wider programme in plastic surgery with the requirement to achieve competence in order to acquire the CCST. Many of the skills attained from aesthetic practice are pertinent to reconstructive practice of the same anatomical areas.

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

Module 1: Aesthetic Surgery of the Breast

Objectives: Acquire competence in the diagnosis, aesthetic assessment and safe management of all deformities and conformations of the breast, developmental and acquired, pathological and physiological. Acquire proficiency in all aspects of breast reconstruction and subsequent revisional procedures. Acquire facility in the psychological assessment of patients presenting for breast surgery.

Knowledge

BASIC:

Should be able to demonstrate knowledge of

- applied and surgical anatomy of the breast, its blood, nerve supply and function,
- development of the breast and congenital deformity and variations of breast form and associated structures,
- hormonal control of the breast and its pathology, when deranged,
- breast physiology in pregnancy and lactation,
- benign pathologies of the breast,
- presentation, clinical features of breast cancer, its staging, prognosis and management pathways,
- effect of ionizing radiation on the breast and implants,
- planning incisions on the breast.
- closure and management of breast wounds.
- self-perception and self-consciousness in relation to breast conformation and proportion including the social and sexual dimensions,
- pathology of deranged self-image.

INTERMEDIATE:

Should be able to demonstrate knowledge of

- content, structure, physical and biological properties of breast implants,
- spectrum of implants available and their applications,
- design, principles and applications of tissue expanders,
- nature, physiology and behaviour of implant capsules,
- management of capsular contractures.
- biology, implications, avoidance of and management of implant infection,
- various designs and approaches to breast augmentation and their applications.
- the issues surrounding breast size and its assessment.
- complications of breast augmentation and their management.
- various designs and patterns of breast reduction and mastopexy,
- complications and management of breast reduction/remodelling.
- presentation, management and complications of gynaecomastia.

ADVANCED

Should be able to demonstrate knowledge of

- assessment of envelope and volume in relation to breast asymmetry, both developmental and acquired,
- classification and management pathways of the tuberous breast,
- management pathways and choices in breast asymmetry,
- impact of breast reconstruction choices on symmetry,
- effect of time, ageing and pregnancy on breast asymmetry correction,
- various techniques of breast reconstruction, their applications, design and planning,
- complications of breast reconstruction,
- techniques for nipple reconstruction, including considerations of sequence and timing,
- features of dysmorphophobia,
- psychosexual dimension in aesthetic breast surgery.

Clinical Skills

BASIC

Should demonstrate ability to

- assess and undertake non-operative of the management of the acute surgical patient,
- take a targeted breast history,
- perform patient examination including breast examination with reference to aesthetic considerations.

INTERMEDIATE

Demonstrate knowledge of the management algorithms for the procedures covered in this section including investigations.

ADVANCED

Should be able to

- demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning,
- assess and accurately record aesthetic concerns about the breast,
- formulate management plans in relation to aesthetic interventions,
- clearly explain, consent and counsel potential patients for aesthetic breast surgery,
- assess the psychological suitability for aesthetic breast surgery and appropriately refer for expert psychological advice as necessary,
- undertake risk benefit analysis of non-pathological based surgery,
- deal with disappointment and postoperative dissatisfaction

Technical Skills and Procedures

BASIC

Should be able to perform

- planning, execution and closing incisions on the breast with reference to aesthetic principles and sub units.
- designing and conduction of excision of skin lesions of the breast,
- undertaking an aesthetic approach to removal of benign lesions of the breast,
- scar revision in aesthetic breast surgery

INTERMEDIATE

Should be able to perform

- correction of the inverted nipple (various techniques),
- bilateral breast augmentation by various routes, in various planes,
- Wise pattern bilateral breast reduction,
- vertical pattern bilateral breast reduction,
- bilateral mastopexy of periareolar, vertical and Wise patterns,
- excision of gynaecomastia, incorporating various forms of liposuction as appropriate.

Module 2: Aesthetic Surgery of Face, Orbit & Neck Rejuvenation

Objectives: 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.

Knowledge

BASIC

Should be able to demonstrate knowledge of

- psychology of the desire for anti-aging interventions,
- features denoting high-risk groups of patients that may present for surgical rejuvenation,
- normal facial anatomy and its common variants, including clear understanding of the blood supply, sensory and motor innervation,
- facial musculature and the course and distribution of the facial nerve,
- the fascial planes of the face and the brow and the pattern of fascial compartments of the brow, face and neck,
- anatomy of the eyelids,
- cosmetic units of the face,
- the effect of sun exposure on the texture and elasticity of the skin and the patterns of aging,
- effect of various laser/light treatments on the dermis,
- mechanisms of healing of partial thickness injury in facial skin,
- formulation and application of chemical peeling agents.

INTERMEDIATE

Should be able to demonstrate knowledge of

- accurate assessment and analysis of the pattern of face aging,
- injectable fillers available, their uses, contraindications and interactions,
- pharmacology of paralytic agents, the different formulations and the muscle groups to which they may be applied,
- role of fillers and paralytics in the overall patient management plan,
- indications for, and design of, endoscopic and open browlift and foreheadplasty,
- fixation methods in brow lift,
- indications and contraindications for facelift,
- anatomy of the SMAS layer and how it may be modified,
- facial fat pads and how they change with time,
- variation of designs for facelift incisions,
- different methods of facelifting,
- different methods of necklifting,
- designs and variations of blepharoplasty, upper and lower,
- role of submental lipectomy and liposuction,
- management of complications of rejuvenation surgery.

ADVANCED

Should be able to demonstrate knowledge of

- applications, indications, limitations and complications of blepharoplasty alone and in combination with other techniques.

Clinical Skills

BASIC

Should demonstrate ability to

- assess and deliver non-operative management of the acute surgical patient,

- take history to include features relevant to the assessment and management of the aesthetic features of the head and neck,
- examine the patient to include relevant aesthetic features of the head and neck.

INTERMEDIATE

Should be able to

- assessment and analysis of all the features of the aging eyelid
- demonstrate knowledge of the management algorithms, combinations and permutations of the rejuvenation procedures covered in this section including appropriate investigations,
- record accurate assessment of the pattern of symptoms and physical features.

ADVANCED

Should be able to

- demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning,
- prepare an overall management plan for a given patient,
- assess the psychological suitability for rejuvenation surgery and appropriately refer for expert advice as necessary,
- undertake risk benefit analysis of non-pathological based surgery,
- counsel and consent a patient for rejuvenation intervention.
- define the subgroup of patients that can be managed by nonsurgical intervention,
- recognise and counsel the unrealistic patient,
- manage the situation whereby a patient's best interests are served by declining to treat that patient,
- deal with disappointment and postoperative dissatisfaction.

Technical Skills and Procedures

BASIC

Should be able to perform

- planning, designing and performing excision of facial skin lesions for aesthetic indications,
- selecting and using injectables for fine rhytids,
- using paralytics to weaken aging muscle groups,
- upper lid blepharoplasty.

INTERMEDIATE

Should be able to perform

- facelift with plication of the SMAS,
- MACS lift,
- submental lipectomy,

- liposuction for the face and neck areas.
- pan or regional facial rejuvenation by laser / chemical peel / dermabrasion,

ADVANCED

Should be able to perform

- lower lid blepharoplasty by external or transconjunctival approaches.

Module 3: Rhinoplasty and Otoplasty

Objective: Competence in the diagnosis, planning and management of all aspects of aesthetic nasal and aesthetic ear surgery.

Knowledge

BASIC

Should demonstrate knowledge of

Rhinoplasty

- anatomy of the nose including detailed description of the bone, cartilage, soft tissue structures, aesthetic units,
- blood supply of the nose including ophthalmic artery, facial artery and angular artery as well as nerve supply,
- physiological functions of the nose and how these may be affected by nasal surgery,
- facial aesthetics including the psychological implications of rhinoplasty surgery,
- dysmorphophobia and recognises clinical features of condition,
- local anaesthesia and the use of topical agents such as cocaine.

Otoplasty

- anatomy of the ear including embryology and growth (including nomenclature of different elements of the ear),
- blood supply of the ear including branches from external carotid artery, posterior auricular artery and superficial temporal artery,
- nerve supply of the ear including auriculotemporal nerve, great auricular nerve, branches of the vagus nerve and lesser occipital nerve.

INTERMEDIATE

Should demonstrate knowledge of

Rhinoplasty

- techniques to manage the nasal dorsum including dorsal hump reduction and dorsal augmentation,
- different osteotomy techniques including placement of osteotomies,
- techniques of endonasal and open approaches, including appropriate selection of surgical technique,
- management of the alar cartilages and septum including resection, dome suturing and

- cartilage grafting techniques,
- endonasal and open approaches to rhinoplasty,
- techniques for nasal tip adjustment including resection, suturing, control of projection.
- management of septal trauma

Otoplasty

- appropriate age-related considerations in respect of timing of otoplasty. cartilage maturation,
- non-surgical management including neonatal moulding techniques,
- anaesthesia including use of local anaesthesia and appropriate infiltration/blocks,
- classification of prominent ears and definitions of cup ear, lop ear and Stahl's deformity,
- surgical techniques for prominent ear correction including cartilage scoring e.g. Chongchet and suture-only techniques e.g. modified Mustardé,
- various dressing techniques with their relative merits,
- potential complications of prominent ear correction with risk factors for the same, including infection and necrosis of cartilage and skin.

ADVANCED

Should demonstrate knowledge of

Rhinoplasty

- complications of rhinoplasty surgery including functional complications,
- secondary rhinoplasty techniques with indications for same.

Otoplasty

- the reconstructive techniques available for treatment of significant necrosis or deformity following prominent ear correction.

Clinical Skills

BASIC

Should demonstrate ability to

Rhinoplasty

- arrange appropriate views for clinical photographic record,
- elicit focussed history in respect of the rhinoplasty patient,
- examine patient with reference to the nose including preoperative analysis of appearance and function,
- recognise the need for psychological assessment and identifies dysmorphophobia.

Otoplasty

- clinically assess the patient with reference to the external ear and demonstrates appropriate communication when dealing with the paediatric patients,
- arrange appropriate views for clinical photographic record,
- take consent for primary otoplasty modifying communication when dealing with paediatric patient,
- recognise the need for psychological assessment and identifies dysmorphophobia.

INTERMEDIATE

Should demonstrate ability to

Rhinoplasty

- clinically assess and analyse nasal defects including issues of balance and proportion.,
- make a surgical plan for primary rhinoplasty using skills of analysis and judgement
- counsel and consent patient for rhinoplasty surgery,
- recognise and counsel the unrealistic patient,
- explain to patient when rhinoplasty not in best interests of patient.

Otoplasty

- clinically assess and analyse ear deformities including issues of symmetry and proportion,
- make a surgical plan for primary otoplasty using skills of analysis and judgement,
- counsel and consent patient for otoplasty surgery,
- recognise and counsel the unrealistic patient,
- explain to patient when otoplasty not in best interests of patient.

ADVANCED

Should demonstrate ability to

Rhinoplasty

- examine the patient with reference to the nose including preoperative analysis of appearance and function,
- deal with disappointment and postoperative dissatisfaction.

Otoplasty

- deal with postoperative complications,
- deal with disappointment and postoperative dissatisfaction,

Technical Skills and Procedures

BASIC

Should be able to perform

Rhinoplasty

- application of internal and external nasal splints,
- drainage of septal haematoma
- harvesting cartilage graft from ear and costochondral junction,
- nasal packing for bleeding
- infiltrating nose with local anaesthetic and administer topical agents such as cocaine,
- osteotomies of nasal bones (various patterns).

Otoplasty

- infiltration of ears with local anaesthesia including greater auricular nerve blocks,
- application of prominent ear head dressing.

INTERMEDIATE

Should demonstrate ability to

Rhinoplasty

- closed approach to the septum with or without concomitant rhinoplasty
- cartilage graft harvest from nasal septum,
- adjustment of nasal dorsum including dorsal hump, reduction and dorsal augmentation.

Otoplasty

- primary otoplasty with cartilage- scoring techniques,
- primary otoplasty with suture-only techniques,

Module 4: Rejuvenation/restoration of the trunk, body contouring, liposuction & fat grafting

Objective: Acquire competence in the assessment, planning correction and management of all aspects of body lifting and contouring

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of the skin and subcutis,
- patterns and organisation of the blood and nerve supply of the relevant regions of the skin,
- pattern of relaxed skin tension lines over the whole body,
- pathogenesis of thromboembolic disease, and the prophylaxis and management of these disorders,
- selection of appropriate prophylactic antibiotics.

INTERMEDIATE

Should demonstrate knowledge of

- principles of bariatric surgery,
- metabolic consequences of bariatric surgery,
- pathogenesis, effects and management of tissue necrosis,
- appropriate placement of incisions for best aesthetic outcome,
- complications of skin-tailoring surgery,
- principles of liposuction and know of the different devices and their relative risks and benefits,
- effects of postoperative changes in body weight and pregnancy in this group of patients,
- pathology and principles of fat grafting.

ADVANCED

Should demonstrate knowledge of

- psychological condition of dysmorphophobia,
- condition of monosymptomatic hyperchondriacal psychosis,
- psychosexual impacts of body image disorder,
- patterns of acquired skin excess,
- syndromic abnormalities of skin laxity,
- forms of lipodystrophy, its patterns and presentations,
- specific complications of the various techniques of liposuction,
- techniques, donor sites and morbidity of fat grafting,
- the developing research into trophic/non-volumetric effects of fat grafts.

Clinical Skills

BASIC

Should demonstrate ability to

- assess and deliver non-operative management of the acute surgical patient,
- take history to include features relevant to the assessment and management of body contour problems,
- examine the patient with reference to patterns of skin excess and laxity to include assessment and documentation of symptomatically unpleasing body contours.

INTERMEDIATE

Should demonstrate ability to

- undertake clinical assessment for the perceived deformities covered in this module.
- translate presenting complaints into an appropriate plan for potential intervention,
- recognise the patient seeking treatment of obesity by body contouring.

ADVANCED

Should demonstrate ability to

- make a surgical plan for the individual patient in respect of conditions covered in this module using skills of analysis and judgement,
- assess the psychological suitability for body contouring surgery and appropriately refers for psychological advice as necessary,
- perform risk-benefit analysis of non-pathological based surgery,
- counsel and consent a patient for an episode of body contouring surgery,
- communicate the range of secondary effects of a given operation and suggest adjuvant procedures or alternative techniques,
- accurately assess local volume excess and translate that into a plan for liposuction,
- recognise lipodystrophies,
- recognise local fat deficiencies which will benefit from fat grafting,

- recognise and counsel the unrealistic patient,
- explain to patient when body contouring surgery not in best interests of patient,
- deal with disappointment and postoperative dissatisfaction.

Technical Skills and Procedures

BASIC

Should be able to undertake

- wound management and dressing care,
- management of the necrotic wound and its defect,
- range of wound closure techniques,
- application of closed suction drainage.

INTERMEDIATE

Should be able to perform

- various patterns of abdominoplasty.
- correction of lax abdominal musculature,
- regional liposuction,
- scar revision including management of the 'dogear',
- fat graft harvest and preparation of fat grafts,
- undertakes local lipofilling with fat graft.

Module 5: Non-Surgical rejuvenation

Objective: Acquire competence in the management of the aesthetic patient using non-surgical enhancement techniques

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy and physiology of skin including classification of skin types,
- normal ageing changes of skin including changes related to sun exposure,
- range of products and non- surgical techniques available for non-surgical rejuvenation,
- the role of these techniques, the indications for use as sole techniques and as adjuncts to other surgical procedures.

INTERMEDIATE

Should demonstrate knowledge of

- specific patterns of ageing in different parts of the body with emphasis on face, neck and

- hands,
- biology of scarring, pigmentation changes, and their modulation,
 - factors and conditions that may cause premature ageing including smoking and substance abuse,
 - mechanism of action, effects and duration of action of the products and techniques used for non-surgical rejuvenation. Specifically, the range of preparations of botulinum toxin, dose schedules and how to achieve complete and partial temporary paralysis of selected muscle groups.
 - the various filler injection preparations on the market and the literature regarding outcomes of the same (permanent, semi-permanent and temporary fillers).
 - different types of lasers available for aesthetic enhancement, their potential applications, mechanism of action, treatment schedules and useage.

ADVANCED

Should demonstrate knowledge of

- racial differences in skin type and the differences in response by skin type to the interventions described in this module,
- complications of use of non- surgical techniques including use of hydroxyquinones, botulinum toxin overuse, scarring from chemical peel, laser,

Clinical Skills

BASIC

Should demonstrate ability to

- elicit relevant features in patient history including the specific concerns of the patient,
- identify and enumerate the features of facial ageing and examines the skin and underlying tissues to demonstrate those features.

INTERMEDIATE

Should demonstrate ability to

- identify evidence of previous treatments including active botulinum toxin, stigmata of laser resurfacing / dermabrasion / microdermabrasion,
- formulate management plan for the optimal enhancement of the facial aesthetic patient by non- surgical techniques,
- optimize the sequencing of the recommended treatments,
- undertake basic functional and psychological assessment of patient's needs,
- show ability to take clinical photographs and catalogue within the legislative framework of the Data Protection Act, and offer appropriate explanation to patient regarding the safeguarding and use of their images.

Technical Skills and Procedures

BASIC

Should be able to perform

- injection techniques to the facial area
- steroid injection for hypertrophic or keloidal scar,
- filler injections for facial rhytids or small depressed scars.

INTERMEDIATE

Should be able to administer

- botulinum toxin injections to glabella, forehead, periorbital, perioral and cervical areas for targeted muscle paralysis.

BURNS

Modules:

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

Module 1: Classification, primary management and transfer

Objective: Acquire competence in the initial management of patients with burns in the emergency department and their transfer to an appropriate burns facility/unit/centre.

Knowledge

BASIC

Should be able to describe in detail the knowledge set contained in the courses:

ATLS

EMSB or ABLIS PALS/APLS

Should demonstrate knowledge of

- anatomy of the body surface, physiology, pathophysiology of burn injury,
- factors influencing burn healing,
- blood supply of skin,
- the timing and rationale for antibiotic use

- timing of initial surgery,
- appropriate pre-operative investigations,
- classification of burn injury,
- resuscitation options,
- importance of specialist centres, MDT and interdisciplinary communication, especially with anaesthetic and paediatric colleagues
- the role of other members of team including microbiologists, physiotherapy, occupational therapy,
- paediatric fluid regimes,
- features and management of toxic shock syndrome,
- an overview of non-accidental injury.

INTERMEDIATE

Should demonstrate knowledge of

- differing roles of burn facilities, units and centres and integration with Major Trauma Centres
- pathophysiology of burns and their classification,
- management of specific injuries e.g. inhalation, chemical and electrical burns,
- non-accidental injury,
- various transfer options available for the burn patient,

ADVANCED

Should demonstrate knowledge of

- controversies and issues arising as a result of a decision not to resuscitate

Clinical Skills

BASIC

Should demonstrate ability to

- elicit burn-related history,
- assess and plan the non-operative management of burn injury,
- recognise life-threatening injuries,
- perform examination to including assessment of severity (extent and depth) of injury,
- assess vascular status of limb,
- assess the presence of compartment syndrome.

INTERMEDIATE

Should demonstrate ability to

- prepare a range of management options for the conditions covered in this module.
- work with other agencies in non- accidental injury.

Technical Skills and Procedures

BASIC

Should be able to perform

- assessment of burn area and depth,
- adjunctive techniques for depth assessment,
- escharotomy and fasciotomy,
- application and change of burn dressings.

INTERMEDIATE

Demonstrate ability to use epidermal substitutes.

ADVANCED

Should be able to perform

- airway management including performing tracheostomy,
- stabilising associated injuries and bleeding.

Module 2: Resuscitation and critical care.

Objective: Acquire competence in the initial resuscitation of a burn patient and ongoing critical care.

Knowledge

BASIC

Should demonstrate knowledge of

- options for airway management,
- pathophysiology of burn shock,
- resuscitation regimes,
- wound dressings,
- pathophysiology of inhalation injury.

INTERMEDIATE

Should demonstrate knowledge of

- principles of early burn debridement,
- principles and management of burns and the relevance to subsequent soft tissue reconstruction,
- relevance of pharmacological interventions including antibiotics and inotropes,
- management of inhalation injury including bronchoscopy,
- metabolic response to the burn injury,
- palliative care in respect of the burn patient.

- PHDU practices.

ADVANCED

Should demonstrate knowledge of

- microbiology of burns,
- nutritional support.

Clinical Skills

BASIC

Should demonstrate ability to

- assess burn injury,
- manage large burn wounds,
- apply temporary dressings e.g. negative pressure.

INTERMEDIATE

Should demonstrate ability to

- manage more complex burns,
- resuscitate burns with TBSA <40%,
- explain the problems associated with the extremes of age and of polytrauma,
- prescribe appropriate antibiotics (antibiotic stewardship),

Technical Skills and Procedures

BASIC

Should be able to perform

- appropriate pre-washing and prepping burn during dressing change,
- escharotomy and fasciotomy,
- application of a range of burns dressings e.g. Biobrane, Flamazine.

INTERMEDIATE

Should be able to perform

- elective tracheostomy,
- adequate debridement of injured soft tissues to achieve a stable wound approaching elective conditions (including fascial excision),
- planning of future soft tissue reconstruction.

Module 3: Early surgery

Objective: Acquires competence in the planning and execution of appropriate early surgery in burns.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of skin,
- classification of burn injury by zones,
- benefits and disadvantages of both early excision and conservative management.

INTERMEDIATE

Should demonstrate knowledge of

- options available for early surgery,
- requirements of special sites,
- principles of management of more complex injuries, including polytrauma,
- planning and prioritising treatment within an MDT setting.

ADVANCED

Should demonstrate knowledge of

- surgical management of the burn,
- principles and use of dermal and epidermal substitutes.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assesses burn injuries and demonstrates recognition of injury patterns.
- use simple management techniques including use of appropriate dressings,
- prescribe appropriate antibiotics,
- plan burn excision and grafting,
- use of epidermal substitutes such as Biobrane.

INTERMEDIATE

Should demonstrate ability to

- formulate management algorithms for the common patterns of burn injury,
- plan total and staged burn excision and grafting,
- apply psychological assessment tools for evaluation of psychological needs (patient

questionnaires).

Technical Skills and Procedures

BASIC

Should be able to perform

- dressings care,
- skin grafts of small to moderate areas.

INTERMEDIATE

Should be able to perform

- skin grafts of large areas,
- plan and raise flaps where grafts are not appropriate,

ADVANCED

Should be able to perform

- resurfacing procedures using temporary skin cover,
- resurfacing using skin substitutes,
- limb amputations.

Module 4: Late surgery

Objective: Acquire competence in later burn management including the planning and execution of reconstructive surgery.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of skin and soft tissues,
- pathophysiology of hypertrophic scars and keloids,
- principles of scar management,
- effect of growth on burn scars,
- use of grafts and local flaps.

INTERMEDIATE

Should demonstrate knowledge of

- indications for use of skin substitutes, distant flaps and free flaps,
- stages of bereavement associated with loss of body image and the clinical and psychological supports that can be put in place to assist the patient cope with that loss.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess burn scars and contractures demonstrating recognition of injury patterns,
- use simple management techniques including use of splints and pressure garments,
- plan release of burn scars using grafting and local flaps.

INTERMEDIATE

Should demonstrate ability to

- formulate management algorithms for the common patterns of burn scarring,
- plan for the use of skin substitutes, distant flaps and free flaps.

Technical Skills and Procedures

BASIC

Should be able to perform burn scar grafting and local flaps including the Z-plasty and its variations.

INTERMEDIATE

Should be able to use skin substitutes and distant flaps of small and medium areas.

Module 5: Infection and other complications

Objective: Acquire competence in the diagnosis and management of burn infections and other complications

Knowledge

BASIC

Should demonstrate knowledge of the microbiology of burns.

INTERMEDIATE

Should demonstrate knowledge of

- metabolic derangement occurring in the burn patient,
- concept and practice of antibiotic stewardship.

Clinical Skills

BASIC

Should demonstrate ability to undertake wound assessment.

INTERMEDIATE

Should demonstrate ability for the clinical assessment and management algorithms for the infections and other burn complications.

Technical Skills and Procedures

BASIC

Should be able to undertake surgical management of wound infection.

Module 6: Paediatric burns

Objective: Acquire competence in the diagnosis and management of paediatric burns and the recognition of the need for multidisciplinary management.

Knowledge

BASIC

The knowledge requirements are as per modules 1-5, in the context of the paediatric patient. Should demonstrate knowledge

- as defined by PALS/APLS,
- paediatric fluid regimens,
- toxic shock syndrome,
- non-accidental injury.

INTERMEDIATE.

As per modules 1-5, in the context of the paediatric patient. Demonstrates knowledge of PHDU practices.

Clinical Skills

BASIC

As per modules 1-5, in the context of the paediatric patient. Works with other agencies in the event of non-accidental injury.

INTERMEDIATE

As per modules 1-5, in the context of the paediatric patient. Works with the paediatric elements of the MDT.

Applies the law in respect of non-accidental injury and communicates with appropriate parties.

Technical Skills and Procedures

BASIC

As per modules 1-5, in the context of the paediatric patient. Should be able to apply Biobrane and similar dressings.

INTERMEDIATE

As per modules 1-5, in the context of the paediatric patient.

CHEST WALL RECONSTRUCTION

Module:

Chest wall reconstruction

Objective: Acquire competence in the diagnosis and management of congenital and acquired defects of the chest wall.

Knowledge

BASIC

Should demonstrate knowledge of:

- anatomy and physiology of the chest wall and respiratory mechanics
- common cardiothoracic procedures, their access (e.g. median sternotomy, lateral thoracotomy) and potential complications (e.g. mediastinitis, empyema, bronchopleural fistula)
- indications for skeletal reconstruction in chest wall defects

INTERMEDIATE

Should demonstrate knowledge of:

- congenital chest wall deformities e.g. Poland's syndrome, pectus carinatum and pectus excavatum
- local and regional flaps utilised in chest wall reconstruction and their anatomy
- pathophysiology of median sternotomy breakdown and a classification for median sternotomy wounds

ADVANCED

Should demonstrate knowledge of:

- potential impact of chest wall defects on respiratory physiology
- strategies for management of noncollapsible chest cavity dead space and bronchopleural fistula
- prosthetic materials used in chest wall reconstruction
- the effects of radiation on the chest wall and the pathophysiology of osteoradionecrosis
- omental flap in chest wall reconstruction
- free tissue transfer in chest wall reconstruction
- techniques for repair of congenital pectus deformities
- techniques for salvage of failed chest reconstruction

Clinical Skills

BASIC

Should demonstrate ability to:

- communicate and plan with other specialties to organise patient care
- undertake clinical assessment of a median sternotomy wound
- undertake clinical assessment of a chest wall soft tissue tumour

INTERMEDIATE

Should be able to:

- formulate a holistic management plan for an individual with a chest wall defect
- undertake clinical assessment of a congenital chest wall deformity
- consent a patient for chest wall reconstruction, discussing advantages and disadvantages of reconstructive options and detailing possible complications
- manage complications of chest wall reconstructive surgery appropriately **ADVANCED:**
Should be able to:
 - clinically assess complex reconstructive cases, including salvage reconstruction, and formulate an appropriate multi-disciplinary management plan
 - 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

Technical Skills and Procedures

BASIC

Should be able to:

- apply a negative pressure dressing to a chest wall defect
- perform skin grafting to a chest wall defect perform a range of local skin flaps for a chest wall defect

INTERMEDIATE

Should be able to perform:

- primary debridement of a chest wall wound
- pectoralis major and rectus abdominis pedicled muscle flaps for median sternotomy coverage

ADVANCED

Should be able to perform:

- fasciocutaneous / musculocutaneous / muscle-only flap reconstruction for thoracic defects (e.g. serratus anterior, trapezius, latissimus dorsi or parascapular flaps).
- reconstruction of defect with omental flap (in concert with general surgery colleague)

CLEFT SURGERY

Modules:

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

Module 1: Primary management of cleft lip and nose

Objective: Acquire competence in the management of the unrepaired cleft lip and nose deformity.

Knowledge

BASIC

Should be able to demonstrate knowledge of:

- surgical anatomy, pathological anatomy, embryology and basic genetics of facial clefting and associated anomalies.
- past and current and protocols for repair of cleft lip and palate.
- content of the Paediatric Intermediate Life Support Course or equivalent course as currently approved by the Resuscitation council of the UK, and ability to resuscitate a child.
- criteria that would constitute grounds for admission to Intensive Care Unit.
- issues of non-accidental injury and child protection. Know the referral pathways for protection of the 'at-risk' child.

INTERMEDIATE

Should demonstrate knowledge of

- the different techniques for cleft lip and nose repair.
- timelines and sequence of operative procedures.

Clinical Skills

BASIC

Should demonstrate ability to

- take care of the pre and post-operative patient/child undergoing cleft surgery including assessment for anaesthetic risk factors, postoperative fluid management, antibiotic prescribing,
- manage a naso-pharyngeal airway both in the peri-operative environment, and post-operatively,
- take informed consent for the procedures covered in this module,
- use the operating microscope,
- present cases within the Cleft MDT.

INTERMEDIATE

Should demonstrate ability to:

- counsel parents of new patients including those following ante-natal scan diagnosis,
- plan appropriate treatment schedule within the context of the cleft MDT.

ADVANCED

Should demonstrate ability to:

- formulate a management plan within the MDT as a fully integrated member of the team,

- communicate with patients/families,
- maintain and demonstrate the skills articulated in APLS/PALS,
- recognise signs of non-accidental injury, risk factors, and family pathology.

Technical Skills and Procedures

BASIC

Should be able to mark up a cleft lip repair according to one of the currently accepted techniques.

INTERMEDIATE

Should be able to mark a cleft lip and nose repair. Should be able to perform some of the muscle dissection and elevation of a vomerine flap

Module 2: Secondary repair of cleft lip and nose

Objective: Acquire competence in the management of the previously repaired cleft lip and nose deformity.

Knowledge

BASIC

Should be able to demonstrate knowledge of

- surgical anatomy, pathological anatomy and physiology of the cleft nose,

INTERMEDIATE

Should demonstrate knowledge of:

- facial morphology and aesthetics,
- surgical approaches to the nose,
- rhinoplasty techniques relevant to cleft nose deformity

Clinical Skills

BASIC

Should demonstrate ability to correctly elicit patients' concerns and their perceptions of the conditions.

INTERMEDIATE

Should demonstrate ability to

- assessment lip and nose disability including alveolar fistula.
- determine the optimum timing of surgery and decide on priorities for treatment,

Module 3: Primary repair of cleft palate

Objective: Competence in the assessment, surgical management and aftercare of primary cleft palate.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy, embryology and basic genetic of facial clefting and associated anomalies (as for Module 1).
- knowledge of sequencing of procedures for cleft palate repair.

INTERMEDIATE

Should demonstrate knowledge of

- anatomical basis for surgical correction of palatal abnormalities

Clinical Skills

BASIC

Should demonstrate ability to

- take informed consent for the procedures specified in this module,
- care skilfully for the pre and post-operative cleft palate patient/child,
- use the operating microscope,
- manage a naso-pharyngeal airway.

INTERMEDIATE

Should be able to demonstrate proficiency in managing the child undergoing cleft palate repair of average complexity.

Technical Skills and Procedures

BASIC

Should be able to perform

- marking up a cleft palate repair.

INTERMEDIATE

Should be able to perform

- suturing of the oral layer in patients with cleft lip and palate.

Module 4: Secondary speech surgery

Objective: To develop competence in the management of speech disorders associated with cleft palate and related disorders

Knowledge

BASIC

Should be able to demonstrate knowledge of

- the surgical anatomy, pathological anatomy and physiology of palatal function and abnormalities after cleft closure, including the pathophysiology of velopharyngeal incompetence (VPI).
- the feeding mechanisms and relationship of infant feeding patterns to later speech development,
- the physiology of the middle ear, Eustachian tube and causes of deafness in the cleft patient,
- the clinical and investigative tools for examining speech development,
- the place of surgical and orthodontic assistance to treatment of speech disorder

INTERMEDIATE

Should be able to describe:

- the range of normal speech development mechanisms and how these are at risk in cleft disorders,
- the impact of chronic otitis media on speech skills at school entry
- the operations available for the amelioration of speech disorders including VPI.

Clinical Skills

BASIC

Should have ability to

- elicit speech disorders
- liaise with Speech Therapists

Module 5: Dento-alveolar defect including alveolar bone grafting

Objective: To develop competence in the management of alveolar defects associated with cleft lip and palate.

Knowledge

BASIC:

Should be able to demonstrate knowledge of:

- the evolution of secondary dentition,
- the related investigations and the basis for treatment of the secondary dentition, and
- the anatomy of various potential sites for cancellous bone graft harvesting

INTERMEDIATE

Should be able to describe:

- options for orthodontic treatment.
- indications for pre-surgical orthodontic treatment,
- the role of Paediatric Dentists including the basics of oral and dental hygiene,
- the methods of assessment of success of bone grafting.

Clinical Skills

BASIC

Should be able to make clinical assessment of the secondary dentition.

Technical Skills and Procedures

BASIC

Should be able to perform harvest of iliac bone graft.

INTERMEDIATE

Should be able to perform low scar access when harvesting iliac bone graft.

Module 6: Orthognathic surgery / Working with the Cleft MDT

Objective: To acquire knowledge of the management of residual cleft deformity in adults including principles of orthognathics and related assessment / investigation

Knowledge

BASIC

Should demonstrate knowledge of:

- the range of residual deformities that pertain at the cessation of facial growth,
- the self-image problems extending into adult life,

INTERMEDIATE

Should demonstrate understanding of

- Principals of orthognathics including distraction osteogenesis,

COMPLEX WOUND MANAGEMENT

Objective: Overall competence in the diagnosis and management of the complex wound excluding burn injury

Knowledge

BASIC

Should be able to describe:

- the principles of management of non-burn conditions managed by the burn team (including cold injuries, TENS and purpura fulminans).

Clinical Skills

BASIC

Should demonstrate proficiency in

- clinical assessment of the non-burn injury,
- liaison with other specialities
- working and communicating within the relevant multidisciplinary team (MDT).

INTERMEDIATE

Should be able to devise management plans and treatment algorithms for the conditions covered in this module,

Technical Skills and Procedures

BASIC

Should be able to:

- stabilise the complex wound patient for safe transfer to specialist centre.
- apply negative pressure dressing.

INTERMEDIATE

Should be able to perform primary debridement and application of temporary wound dressings in theatre.

ADVANCED

Should be able to debride complex wound

CRANIOFACIAL SURGERY

Modules:

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

Module 1: General Principles

Objective: Principles of the MDT and the 'Craniofacial Assessment' e.g. Psychology of facial difference and speech and language assessment; Anatomy & Embryology of the craniofacial complex; Cephalometrics and facial analysis; Trauma; Emergency procedures; Surgical approaches to the craniofacial complex

Knowledge

BASIC

Should demonstrate knowledge of:

- embryology of the pharyngeal arch development and syndromes arising from developmental pathology, and should be to demonstrate proficiency in the descriptive anatomy of head and neck
- multidisciplinary assessment of „The Craniofacial Patient“ (parameters including visual, audiological, airway, speech, feeding, psychological and neurological),

- content of the Paediatric Intermediate Life Support Course or equivalent course as currently approved by the Resuscitation Council of the UK. Know how to resuscitate a child,
- criteria that would constitute grounds for admission to Intensive Care Unit,
- issues of non-accidental injury and child protection, and the referral pathways for protection of the „at-risk“ child.
- emergency diagnosis of elevated intracranial pressure (ICP) and/or intracranial haemorrhage

INTERMEDIATE

Should be able to demonstrate knowledge of:

- cephalometric characteristics of craniofacial syndromes
- technique of intermaxillary fixation

ADVANCED

Should be able to demonstrate knowledge of:

- anatomy of surgical approaches to craniofacial skeleton and relevant local flaps (temporalis, superficial temporal etc),
- impact of disfigurement, the consequences of an altered appearance, what it involves psychologically and socially, and the impact of an individual's body image on their life and that of their family,

Clinical Skills

BASIC

Should demonstrate ability to

- care for the pre and post-operative patient/child undergoing craniofacial surgery including assessment for anaesthetic risk factors, postoperative fluid management, antibiotic prescribing,
- manage the airway both in the peri-operative environment, and post-operatively.
- take informed consent for the procedures covered in this module,
- present cases within the Craniofacial MDT

INTERMEDIATE

Should demonstrate ability to

- counsel parents of new patients including those following antenatal scan diagnosis for relevant syndromes.

Technical Skills and Procedures

BASIC

Should be able perform tracheostomy (emergency and percutaneous) and nasal packing for epistaxis

Module 2: Craniosynostosis

Objective: Management of single suture and syndromic craniosynostosis

Knowledge

BASIC

Should demonstrate knowledge of

- surgical anatomy, pathological anatomy and pathophysiology of craniosynostosis,
- common phenotypes and head shapes, and
- positional vs synostotic plagiocephaly: torticollis.

INTERMEDIATE

Should demonstrate knowledge of

- basic clinical genetics of craniosynostosis syndromes,
- recognition of different syndromic craniosynostoses (Apert, Crouzon)

Clinical Skills

BASIC

Should be able to

- explain to parents the challenges of these conditions at different stages of life from birth to adolescence,
- describe the impact on the family of the birth of a child with a craniofacial anomaly and provide or arrange support.

Technical Skills and Procedures

BASIC

Should be able to:

- close a coronal incision

Module 3: Craniofacial tumours in adults and children

Objective: Acquire competence in the management of adults with transcranial tumours (orbital, nasal, frontofacial, skull base) including SCC, BCC, melanoma. Acquire competence in the basic principles of management of children with transcranial tumours.

Knowledge

BASIC

Should be able to describe common adult tumours eg BCC, SCC, melanoma, and their pathology, natural history and treatment protocols

INTERMEDIATE

Should demonstrate knowledge of

- other adult tumours – eg neurofibromatosis, neuroblastoma with their pathology, natural history and treatment protocols,
- common paediatric tumours eg neurofibromatosis, fibrous dysplasia, teratomas and their pathology, natural history and treatment protocols,
- adjunctive techniques eg interventional radiology and IMRT and chemo- irradiation,
- complex craniofacial vascular anomalies and malformations
- role of the surgeon in the MDT

ADVANCED

Should demonstrate knowledge of

- management of the facial nerve in adult and paediatric tumours with indications for facial nerve sacrifice and rehabilitation

Clinical Skills

BASIC

Should be able to present cases to the MDT

INTERMEDIATE

Should demonstrate ability to diagnose, investigate the conditions covered in this module.

ADVANCED

Should demonstrate ability to

- formulate treatment plans for the conditions covered in this module
- lead decision making in the MDT,
- co-ordinate the patient treatment pathway.

Technical Skills and Procedures

BASIC

Should be able to perform reconstructive techniques including grafts and local flaps

INTERMEDIATE

Should be able to perform elevation of 'workhorse' free flaps including latissimus dorsi and radial forearm flap

Module 4: Craniofacial syndromes of tissue deficiency

Objective: Acquire competence in the recognition and principles of management of hemifacial microsomia, Treacher Collins syndrome, mandibular deficiencies - Pierre Robin, Romberg's disease, morphoea, craniofacial clefts & encephalocoeles, Binder's syndrome, holoprosencephaly, arrhinia

Knowledge

BASIC

Should demonstrate knowledge of (with their aetiology, developmental pathology & embryology, natural history)

- hemifacial microsomia (HFM),
- Treacher Collins syndrome (TCS),
- Romberg's disease,
- Morphoea,
- Tessier's classification of craniofacial clefts

INTERMEDIATE

Should demonstrate knowledge of

- treatment protocols for mandibular deficiencies - Pierre Robin

ADVANCED

Should demonstrate knowledge of

- other tissue deficiency syndromes eg Craniofacial clefts & encephalocoeles,
- Binder's syndrome,
- holoprosencephaly,
- arrhinia

Clinical Skills

BASIC

Not applicable

INTERMEDIATE

Should have ability to manage the compromised airway

Technical Skills and Procedures

BASIC

Should be able to perform excision of accessory auricles

INTERMEDIATE

Should be able to perform

- tissue expansion in the head and neck,
- tarsorrhaphy techniques,
- fat transfer.

Module 5: Craniofacial overgrowth syndromes

Objective: Acquire competence in the management of hemifacial hypertrophy, facial infiltrating lipomatosis, tissue overgrowth secondary to vascular malformations (Beckwith Wiedemann Syndrome, proboscis)

Knowledge

BASIC

Should demonstrate knowledge of hamartomas, teratomas, and dysplasias

INTERMEDIATE

Should demonstrate knowledge of planes of facial resuspension

Clinical Skills

BASIC

Should demonstrate ability to manage patients with reference to maintenance of vital functions including airway, feeding etc

Module 6: Orbital surgery

Objective: 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.

Knowledge

BASIC

Should demonstrate knowledge of

- applied anatomy of the orbit and contents
- examination of the eye and basic vision
- eyelid anatomy and eyelid malposition
- growth of the orbit
- definition of terms eg hypertelorism, dystopia, telecanthus
- differential diagnosis/genetics of hypertelorism syndromes
- MDT assessment of hypertelorism syndromes

INTERMEDIATE

Should demonstrate knowledge of

- medial and lateral canthal fixation methods
- orbital Prostheses – types, indications
- retrobulbar haemorrhage

Clinical Skills

BASIC

Emergencies – see module 1

CRANIOMAXILLOFACIAL TRAUMA

Module:

Cranio-maxillofacial trauma

Objective: 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.

Knowledge

BASIC

Should demonstrate knowledge of :

- anatomy of scalp, face, nose, ears, eyelids, orbit and contents
- anatomy of craniofacial skeleton and temporomandibular joint (TMJ)
- anatomy and physiology of parotid and lacrimal apparatus
- bone healing
- aetiology of facial trauma
- priorities of management
- assessment of airway and level of consciousness (Glasgow coma scale)
- assessment of head injury and cranial nerve function
- pharmacology and therapeutics of post-operative analgesia

INTERMEDIATE

Should demonstrate knowledge of

- anatomy of trigeminal nerve and infiltration / nerve block anaesthesia
- signs and symptoms of fractures of cranium and facial skeleton
- signs and symptoms of TMJ dislocation and fracture dislocation
- other fracture complexes
- classification of fractures of the craniofacial skeleton
- appropriate investigations of facial nerve and duct injury
- appropriate investigations of lacrimal apparatus injury
- significance of dental occlusion
- importance of disruption of the canthal ligaments

ADVANCED

Should demonstrate knowledge of

- physiology of nasal cavity, sight and oculomotor function
- classification of craniofacial fractures
- potential complications of cranial, nasal, orbital, middle-third and mandibular fractures
- available open and closed techniques of surgical management including intermaxillary fixation
- principles of nerve repair and stenting of ducts
- understanding the benefits and indications of both open and closed treatments
- surgical approaches to the orbit

- awareness of need for urgent orbital decompression or release of ocular muscles
- available techniques/materials for orbital wall reconstruction
- potential complications early / intermediate and late
- role of the maxillofacial technician

Clinical Skills

BASIC

Should demonstrate ability to

- undertake general assessment of the traumatised patient
- airway management and emergency treatment of facial trauma
- assessment and examination of patient with facial trauma
- awareness of additional factors affecting timing of surgery

INTERMEDIATE

Should demonstrate ability to

- assess the nasal bones, cartilages and septum
- assess the orbits and contents and ears
- assess dental occlusion
- perform clinical examination of ears, orbit, eyelids and lacrimal apparatus, teeth, oral cavity, facial skeleton and cranial nerves
- ability to correctly interpret physical signs
- arrange investigations, selection and interpretation of relevant radiographic imaging of craniofacial fractures
- manage epistaxis and septal haematoma
- formulate a treatment plan and prioritise management
- exercise clinical judgment appropriate to injury and patient needs
- liaise as appropriate with Ophthalmology, Oral and Maxillofacial and Neurosurgery colleagues where appropriate

ADVANCED

Should demonstrate ability to

- manage frontal sinus fractures
- assess need for removal of damaged teeth/retained roots
- prescribe appropriate pain control /prevention of infection
- perform local anaesthetic infiltration for pain control / nerve block anaesthesia

Technical Skills and Procedures

BASIC

Should be able to perform

- intra/extra-oral soft tissue handling and suturing techniques

INTERMEDIATE

Should be able to perform

- surgical repair of nerve injury under magnification
- techniques of intermaxillary fixation
- techniques for approach to the orbital walls

ADVANCED

Should be able to perform

- manipulation of nasal bones and septum
- nasal packing and splintage
- ability to stent and repair duct
- techniques for management of displaced canthal ligaments
- safe exposure of fracture sites and reduction of fragments
- plate handling skills
- selection and use of appropriate allograft materials
- bone grafting (variety of donor sites)
- approach and expose frontal bone fractures

EAR RECONSTRUCTION

Module:

Ear deformities and ear reconstruction

Objective: Competence in the diagnosis and principles of management of all aspects of ear deformities and ear reconstruction

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy and embryology of the external, middle and inner ear,
- pathophysiology of skin and cartilage wound healing, soft tissue tumours of the ear including haemangioma, problem scarring including keloid and principles of management of scarring,
- various classifications of ear deformities including acquired ear deformities

INTERMEDIATE

Should demonstrate knowledge of

- principles of osseointegration,
- local and regional flaps around the ear including the scalp,
- development of the mandible and syndromes associated with ear deformities,
- different techniques of correcting the prominent ear
- principles of tissue expansion.

ADVANCED

Should demonstrate knowledge of

- various techniques of reconstructing microtia, macrotia, complex ear deformities such as constricted ears, sports induced trauma, different techniques of ear reconstruction following partial/total loss, with and without cartilage loss, timing of microtia surgery,
- techniques to correct ear lobe deformities.

Clinical Skills

BASIC

Should demonstrate ability to undertake

- clinical assessment of the ear and identifying anatomical variations from the norm.
- clinical assessment of problem scarring and soft tissue tumours and formulating a plan of management.

INTERMEDIATE

Should demonstrate ability to

- differentiate and classify the various ear deformities and identify the anatomical deficiencies or variations of the ear,
- plan surgical procedures for prominent ear, cryptotia, deformities of the ear with minimal loss of the auricular tissue

Technical Skills and Procedures

BASIC

Should be able to perform

- excision of simple accessory auricles, cysts and small tumours on the ear with direct closure or skin grafting, intralesional steroid injection,
- repair of split earlobes with local flaps,
- repair of simple lacerations of the ear with or without cartilage repair,
- excision of Darwin's tubercle.

INTERMEDIATE

Should be able to perform

- correction of prominent ear with and without cartilage mutilation.

GENITOURINARY RECONSTRUCTION

Modules:

1. Hypospadias and allied conditions.
2. Epispadias, female genital anomalies, ambiguous genitalia & 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.

Module 1: Hypospadias and allied conditions

Objective: 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.

Knowledge

BASIC

Should demonstrate knowledge of

- embryology of the external genitalia, endocrinology pathology, anatomy of the male genitalia,
- wound healing,
- aetiological factors,
- investigations,
- management of the family.

INTERMEDIATE

Should demonstrate knowledge of

- classification of hypospadias,
- classification of surgical procedures,
- surgical techniques available for correction of hypospadias
- cause and management of ventral curvature
- timing of surgery
- management of foreskin
- principles of surgical management, post-operative management and complications

Clinical Skills

BASIC

Should demonstrate ability to

- assess presence and severity of hypospadias, presence of ventral curvature.
- assess whether foreskin is suitable for reconstruction
- manage the child/family unit so that all are comfortable with the reconstructive process
- discuss the pro/cons of timing of surgery and reasons for operating

INTERMEDIATE

Should demonstrate ability to

- assess which operative technique is appropriate for the degree of deformity.
- assess the child with foreskin anomaly

Technical Skills and Procedures

BASIC

Should be able to perform

- circumcision.
- artificial erection test

INTERMEDIATE

Should be able to perform

- meatotomy.
- trimming of skin envelope following hypospadias repair.
- closure of GAP hypospadias repair.
- foreskin reconstruction.

ADVANCED

Should be able to perform

- Snodgrass repair – dissection, closure of urethra, raising and inset of waterproofing layer, closure.
- Snodgraft repair – dissection, inset of graft, and closure as above.
- 2nd stage Bracka – dissection and closure

Module 2: Epispadias, Anomalies of Female Genitalia, Ambiguous Genitalia and Acquired Perineal Defects

Objective: Acquire competence in the principles of management of epispadias, anomalies

of female genitalia, ambiguous genitalia and acquired perineal defects.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of epispadias/bladder extrophy, incidence, aetiology, MDT principles of management.
- defects of female genitalia – congenital/acquired.
- Congenital. Aims of surgical correction – restoration of urinary / faecal and sexual function.
- age at presentation.
- Acquired - causes – tumour, infection, trauma, previous DXT, scarring secondary to birth tear / episiotomy.

INTERMEDIATE

Should demonstrate knowledge of

- epispadias – aims of management, principles of treatment, principles of two main surgical repairs.
- female genitalia – congenital absence of vagina (Meyer-Rokitansky Syndrome), incidence, presents with primary amenorrhoea diagnostic test, principles of reconstruction – length, width vagina, durability, sensation.
- male genitalia reconstruction in Fournier’s disease, cancer, trauma, vascular malformation, BXO with emphasis on preservation of adequate length, sufficient skin for unrestricted erection, durability and sensation, preservation of erection and adequate urinary stream.
- skin – SSG.
- scrotum – SSG, Flaps.

ADVANCED

Should demonstrate knowledge of

- Methods of female reconstruction post acquired defect – local pedicled flaps – lotus, gracilis, SSG, muscle flaps – gracilis myocutaneous flaps, distant flaps – VRAM.
- Male reconstruction post acquired defects.
- Urethra – 2 stage Bracka with BUMG with or without bladder mucosa grafts.
- Glans – glansctomy and quilted thick SSG for reforming glans over existing corpora.
- Scrotum – tissue expansion, SSG, flaps – gracilis, Singapore technique.

Clinical Skills

BASIC

Should demonstrate ability to

- arrange appropriate investigations for conditions described in this module,
- perineal defects including assessment of patient with Fournier's and initial management, identification of potential defect following resection of perineal tumour.

INTERMEDIATE

Should be able to plan primary flaps for reconstruction of perineal defect e.g. lotus, gracilis, VRAM

Technical Skills and Procedures

BASIC

Should be able to perform SSG, full thickness graft, jumping man, application of topical negative pressure dressing.

Module 3: Genital Reassignment

Objective: Acquire competence in the principles of management of gender reassignment.

Knowledge

BASIC

Should demonstrate knowledge of

- definition of transsexualism.
- aetiology sex ratio
- diagnosis of gender dysphoria
- MDT.
- Requirement for Management: Live as other gender for two years, Hormones, Surgery

INTERMEDIATE

Should demonstrate knowledge of techniques available for male to female reassignment

- penile flap – glans reduced as clitoris, penile skin as flap for vagina, scrotum for labia / clitoral hood – usually two stage
- modified McIndoe – SSG or FTSG from penis for vagina.
- others – bowel for vagina

ADVANCED

Should demonstrate knowledge of techniques available for female to male reassignment

- mastectomy.
- phallus construction with internal urethra and ability to become erect, non hair bearing, sensate, size, erectability and arousability by deep pudendal nerve. Specific options for

- phallus reconstruction
- random pattern abdominal tube pedicle
- groin flap
- SIEA flap
- gracillis flap
- radial forearm flap
- urethral reconstruction options,
- SSG
- FTSG
- transplantation of urethra
- tubed bladder wall
- ancillary procedures
- testicular implants
- vaginectomy
- facial feminising techniques
- breast augmentation

Clinical Skills

BASIC

Ability to demonstrate working within an MDT and the ability to assess the psychological state of the patient

Technical Skills and Procedures

BASIC

Should be able to perform

- raising local flaps
- assessment of size of prosthesis needed
- insertion of testicular prosthesis.

HAND SURGERY

Modules:

- 1 Skin / Soft tissue / Microsurgery / Dupuytren's Disease Module
- 2 Fractures and Joint Injuries including Wrist Instability Module
- 3 Osteoarthritis and Inflammatory Arthritis
- 4 Tendon and tendon-related disorders
- 5 Nerve and nerve-related disorders
- 6 The Child's Hand, Vascular Disorders and Tumours

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

Objective: Acquire competence in the diagnosis and management of soft tissue problems around the hand and upper limb including traumatic loss. Acquire competence in all aspects of care of Dupuytren's disease.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy, embryology, physiology of skin, blood supply and blood flow,
- models of skin blood supply
- mechanism of action of pharmacology on the microcirculation,
- elements of wound healing,
- organisms causing soft tissue infection including, microbiology of infecting organisms, surgical pathology and spread of infection,
- surgical and pathological anatomy of Dupuytren's disease in the palm and digits.

INTERMEDIATE

Should demonstrate knowledge of

- range, indications and principles of operations to treat conditions listed in this module,
- post-operative complications and their management,
- hand therapy interventions for wound & scar management, reduction of swelling and management of stiffness,
- levels of amputation for the upper limb,
- principles of microvascular surgery,
- principles of replantation including macroreplantation.
- sciences of pathogenesis of Dupuytren's disease.

ADVANCED

Should demonstrate knowledge of

- recent advances in wound healing including wound healing technology such as vacuum-assisted closure,
- ancillary investigations including those pertinent to vascular compromise of limb, life or limb-threatening infections,
- techniques to raise vascularised free tissue transfers including lateral arm flap, latissimus dorsi flap, gracilis flap, toe transfer,
- management of the mutilating hand injury including rollover injury, gunshot injury,
- management of extravasation and high-pressure injection injury to the hand.
- management of thermal injury to the hand including local treatment of scald, flame, chemical & electrical burns and frostbite.

Clinical Skills

BASIC

Should perform assessment and non-operative management of the acute surgical patient including targeted hand- related history and hand examination.

INTERMEDIATE

Should demonstrate ability to devise management algorithms for the conditions covered in this section including investigations.

ADVANCED

Should demonstrate abilities of analysis and diagnostic synthesis, judgement, surgical planning.

Technical Skills and Procedures

BASIC

Should be able to perform

- nail bed repair,
- different types of skin grafts including split skin/full thickness skin graft,
- palmar fasciectomy for Dupuytren's disease,
- fasciocutaneous flaps around the forearm.
- variety of flap reconstructions,
- local flap (transposition, rotation, island)
- microsurgical techniques
- arterial and venous repair – small and medium vessels

INTERMEDIATE

Should be able to perform

- fingertip reconstruction : heterodigital flap reconstruction including cross-finger flap, thenar flap, Foucher flap, and homodigital neurovascular island flaps
- application of mechanical vacuum suction device for appropriate wounds,
- debridement of complex wounds,
- fasciectomy for MCPJ contracture (Dupuytren's disease),
- fasciectomy with correction of PIPJ contracture.

ADVANCED

Should be able to perform

- planning and execution of flap reconstruction
- distant flap e.g. groin, posterior interosseous artery flap, radial forearm flap
- free tissue transfer – flap elevation,
- elevation of variety of free tissue transfers e.g. lateral arm flap, latissimus dorsi muscle

- flap, second toe transfer etc.,
- microsurgical techniques
- microsurgical free tissue transfer
- revascularisation digit or upper limb part
- fasciectomy for recurrence of Dupuytren's disease.

Module 2: Fractures and Joint Injuries including Wrist Instability

Objective: 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 and management of the unstable wrist including distal radioulnar joint.

Knowledge

BASIC

Should be able to demonstrate knowledge of

- pathophysiology of fracture healing including non-union and malunion,
- principles of operative and non-operative management of hand and wrist fractures,
- anatomy of radio- carpal/DRUJ/MCP/PIP/DIP joints and CMC joint of the thumb
- ligamentous anatomy of these joints and how it influences treatment
- available imaging techniques and their interpretation:
- plain and stress radiographs of the wrist and hand.
- other specific views relevant to particular situations

INTERMEDIATE

Should be able to demonstrate knowledge of principles of management of fractures and dislocations of bones and joints of hand and wrist including carpus and distal radioulnar joint.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess fractures, dislocations and ligamentous injuries of the hand and wrist,
- assess the unstable wrist,
- manage common fractures of the hand and wrist,
- apply a range of plaster splints.

INTERMEDIATE

Should demonstrate ability to manage more complex fractures of the hand and wrist,

Technical Skills and Procedures

BASIC

Should be able to perform closed reduction metacarpal and phalangeal fractures with application splint or cast

INTERMEDIATE

Should be able to perform

- closed K-wiring for: CMC/PIP joint dislocations phalangeal/metacarpal fractures distal radius fractures (pins & plaster)
- open fixation of metacarpal fractures,
- repair of ulnar collateral ligament of MCPJ of thumb (Gamekeeper's thumb).

ADVANCED

Should be able to perform open fixation of phalangeal fractures.

Module 3: Osteoarthritis and Inflammatory Arthritis

Objective: 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.

Knowledge

BASIC

Should be able to demonstrate knowledge of

- pathophysiology of osteoarthritis, inflammatory arthritis and septic arthritis including appreciation of patterns of disease
- pharmacology for the medical treatment of these disorders
- imbalances and deformities associated with inflammatory arthritis
- pathomechanics of common rheumatoid hand deformities including: distal radioulnar joint subluxation and carpal translocation MCPJ subluxation and ulnar drift digital boutonnière and swan neck thumb deformity and CMC disease
- principles of arthroplasty.

INTERMEDIATE

Should be able to demonstrate knowledge of

- principles and detailed management of the common osteoarthritic disorders of the hand and wrist including the basal joint of the thumb,

- principles and detailed management of rheumatoid arthritis in the hand and wrist,
- aetiology, pathomechanics of deformity in inflammatory arthritides including understanding disease patterns,
- place of soft tissue reconstruction, joint fusion, replacement, interposition and excision arthroplasty in the treatment of the rheumatoid hand and wrist,
- planning and prioritising treatment within an MDT setting.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess the arthritic patient and recognise the typical patterns of disease,
- demonstrate conservative management techniques including splinting, exercises and understanding of occupational therapy assessment and provision of aids to daily living,
- undertake external K-wire removal.

INTERMEDIATE

Should demonstrate ability to

- undertake detailed examination of the patient with inflammatory arthritis to demonstrate the features of:
distal radioulnar joint subluxation and carpal translocation
MCPJ subluxation and ulnar drift boutonnière and swan neck thumb deformity
and CMCJ disease

Technical Skills and Procedures

BASIC

Should be able to perform harvesting of iliac bone graft / radius bone graft,

INTERMEDIATE

Should be able to perform

- arthrodesis of DIPJ / PIPJ/ MCPJ,
- trapeziectomy plus/minus soft tissue ligamentous reconstruction,

Module 4: Tendon and tendon-related disorders

Objective: 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.

Knowledge

BASIC

Should be able to demonstrate knowledge of

- mechanisms of tendon injury and healing,
- pathophysiology of related tendon disorders.

INTERMEDIATE

Should be able to demonstrate knowledge of

- principles of tendon transfer,
- biomechanics of the tendons and tendon sheath / pulleys,
- available suture techniques for repair of the divided tendon including multistrand repair,
- rehabilitation regimens for flexor and extensor tendon repair.

ADVANCED

Should be able to demonstrate knowledge of

- recent advances in basic sciences of tendon injury and repair,
- basic science and evidence base informing use of different techniques of tendon repair and rehabilitation regimens,
- the role of the intrinsic muscles in facilitating co-ordinated tendon function.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess the injured tendon and other tendon disorders,
- select use of relevant specialist imaging techniques such as ultrasound.

INTERMEDIATE

Should demonstrate ability to

- clinically assess and manage algorithms for the conditions covered in this module,
- examine the stiff finger and distinguish flexor/extensor adhesions / primary or secondary joint stiffness.

ADVANCED

Should demonstrate ability to

- undertake detailed assessment of and advise on complex tendon problems including reconstruction

- analyse and advise on modifications needed to standard therapy regimens to correct specific problems such as joint contracture.

Technical Skills and Procedures

BASIC

Should be able to perform

- extensor tendon repair
- flexor tendon repair (Zones III-V)
- tendon graft harvest
- extensor / flexor synovectomy
- trigger digit release

INTERMEDIATE

Should be able to perform:

- De Quervain's release
- flexor tendon repair (multistrand)(Zones I & II)
- flexor or extensor tenolysis
- tendon transfer (EI-EPL)
- tenodesis (EDC replacement in partial EDC rupture)

Module 5: Nerve and nerve-related disorders

Objective: 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 knowledge of the rehabilitation regimens for the same.

Knowledge

BASIC

Should demonstrate knowledge of

- topographic anatomy of peripheral nerve including brachial plexus,
- response of peripheral nerve to injury and repair,
- pathophysiology of nerve compressive disorders.

INTERMEDIATE

Should demonstrate knowledge of

- techniques of nerve repair,
- mechanisms of brachial plexus injury, the patterns of injury and outline treatment options,

ADVANCED

Should demonstrate knowledge of

- pathophysiology and classification of CRPS and neuropathic pain problems.
- pharmacological and non- pharmacological methods for the relief of nerve-related pain problems.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess nerve-related disorders including brachial plexus,
- apply relevant specialist imaging techniques such as electrophysiological investigation and ultrasound,
- prevent iatrogenic nerve injury.

INTERMEDIATE

Should demonstrate knowledge of clinical assessment and management algorithms for the conditions covered in this module.

ADVANCED

Should demonstrate ability to assess and advise on reanimation of the hand in cases of tendon loss and nerve palsy using specific tendon transfers.

Technical Skills and Procedures

BASIC

Should be able to perform

- peripheral nerve repair including digital nerve
- nerve graft harvest
- carpal tunnel release Strongly recommended Microsurgical skills - nerve repair techniques
- cubital tunnel release (simple decompression)

INTERMEDIATE

Should be able to perform nerve grafting for segmental nerve defect

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

Objective: Acquire overall competence in the diagnosis and management of children's

hand problems with emphasis on congenital hand conditions. 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.

Knowledge

BASIC

Should demonstrate knowledge of

- principles of management of children's hand disorders including classification, reconstructive principles and timing of operations for congenital difference,
- embryology of the upper limb and the mechanisms of malformation,
- patterns of normal growth and development,
- management of vascular injury including compartment syndrome,
- principles of management of soft tissue and bony tumours particularly the more common swellings found around the hand.,
- principles of management of upper limb tumours with reference to surgical oncology including biopsy techniques, excision margins, management of regional lymph nodes, formal amputations.

INTERMEDIATE

Should demonstrate knowledge of

- the following conditions of the Child's Hand: trigger digits, polydactyly including thumb duplication, simple syndactyly, epiphyseal injury (Salter Harris)
- management of vascular insufficiency syndromes, - haemangiomas and vascular malformations,
- management of soft tissue and bony tumours including formal amputations, reconstructions,
- principles of management of skin cancer occurring in the upper limb and management of the regional lymph nodes.

ADVANCED

Should demonstrate knowledge of

- the following conditions of the Child's Hand: complex syndactyly (e.g. Apert's hand) radial dysplasia (radial club hand), thumb hypoplasia
- constriction band syndrome
- Volkmann's ischaemic contracture

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess and deliver non-operative management of the Child's Hand disorder,
- in respect of cancer diagnoses demonstrates the skill set necessary to advise a patient of such diagnosis.
- work and communicate within the relevant multidisciplinary team (MDT)

INTERMEDIATE

Should demonstrate ability to apply a working knowledge of the management algorithms to the conditions covered in this module.

ADVANCED

Should demonstrate

- skills of analysis and diagnostic synthesis, judgement, and surgical planning.
- in respect of the Child's Hand, the ability to advise regarding timing of reconstruction and effect of growth on reconstructive surgery previously performed,
- in respect of vascular disorders shows the ability to advise regarding conservative, non-surgical and surgical treatment options.

Technical Skills and Procedures

BASIC

Should be able to perform

- surgery for uncomplicated traumatic conditions of the Child's Hand,
- excision of small superficial vascular malformations,
- ganglion excision (dorsal wrist, volar wrist, DIPJ)
- safe biopsy for suspected tumours of the upper limb

INTERMEDIATE

Should be able to perform

- trigger thumb/finger release simple syndactyly separation correction of duplicate thumb correction of polydactyly
- fasciotomies for compartment syndrome,
- axillary lymphadenectomy

HEAD & NECK SURGERY

Modules:

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

Module 1: Basic Sciences – embryology, development, anatomy and physiology

Objective: To understand the development, anatomy and physiology of the head and neck in relation to its surgery.

Knowledge

BASIC

Should demonstrate knowledge of

- embryology of head & neck.
- topographical and segmental anatomy of the head & neck.
- vascular, neuronal and lymphatic supply / drainage of the head & neck.
- appropriate use of diagnostic imaging
- aesthetic units of the face and neck

INTERMEDIATE

Should demonstrate knowledge of

- range, indications and principles of surgical options for surgical ablation of tumours of the head & neck.
- range, indications and principles of surgical options for soft tissue defect reconstruction of the head & neck.
- range, indications and principles of surgical options for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips)
- concepts and limitations of diagnostic techniques
- aetiology and assessment of facial palsy
- assessment of facial aesthetics
- role and use of the head & neck MDT

ADVANCED

Should demonstrate knowledge of

- factors determining appropriate surgical ablation techniques
- factors determining decision making in choice of flaps and tissue for soft tissue defect reconstruction
- factors determining decision making in choice of flaps and tissue for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips).
- indications and principles of surgical options and non-operative techniques in facial reanimation.

Clinical Skills

BASIC

Should demonstrate ability to

- take a focused head & neck history related to any head & neck symptom
- assess and non-operatively manage acute injury
- recognise life-threatening injuries of the airway and major blood vessels
- undertake competent examination of the head & neck.
- undertake competent examination of cervical lymph nodes.
- record diagnostic findings accurately
- organise discussion of cases at head & neck MDT meetings.

INTERMEDIATE

Should demonstrate ability to

- interpret significance of cytological and histological biopsy reports
- interpret CT and MRI scans of the head and neck.

Technical Skills and Procedures

BASIC

Should be able to perform

- airway management with the skill detailed in ATLS
- circulatory support with the skills detailed in ATLS
- free-hand and ultrasound guided lesion FNA of the head & neck
- free-hand and ultrasound guided core biopsy of the head & neck

INTERMEDIATE

Should be able to perform

- surgical incision / excision biopsy of intra-oral lesions

Module 2: Skin-related neoplasia of the head & neck

Objective: Competence in the diagnosis, assessment and management of all types of skin related cancer of the head and neck.

Knowledge

BASIC

Should demonstrate knowledge of

- epidemiology
- histological classification (BCC / SCC / Melanoma / adnexal)
- staging of skin cancer
- prognostic factors (tumour and patient-related) and implications for patient treatment recommendations
- principles of screening programmes within a population.
- NICE guidelines in treatment of non-melanoma skin cancers
- understanding the MDT
- knowledge of reconstructive options

INTERMEDIATE

Should demonstrate knowledge of

- indications for non-surgical treatment
- adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies particularly for melanoma.
- cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis
- palliative treatment options for skin cancer.

ADVANCED

Should demonstrate knowledge of

- association between specific high risk benign skin conditions with associated increased skin cancer risk

Clinical Skills

BASIC

Should demonstrate ability to

- take focused skin-related history, eliciting factors associated with benign and malignant skin neoplasia
- undertake competent head & neck examination
- examine for head & neck lymphadenopathy
- initiate appropriate investigations
- undertake pre-op. skin prep and draping and prescribe antibiotic prophylaxis
- work effectively within the skin cancer multidisciplinary team.

INTERMEDIATE

Should demonstrate ability to

- assess and manage patients presenting with locally advanced disease
- interpret CT, MRI & PET scans,
- recognise where further pathology or imaging studies may be required and request these appropriately,

- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues.

ADVANCED

Should demonstrate skills of

- communication of a cancer diagnosis with patients.

Technical Skills and Procedures

BASIC

Should be able to perform

- incision biopsy of lesion
- excision biopsy of lesion
- FNA / core sample of lymph node
- Lymph node sampling [in centres where SNB not available]
- local flap reconstruction (rotation / transposition / advancement)
- split and full thickness skin grafts.

INTERMEDIATE

Should be able to perform

- sentinel lymph node biopsy, dual modality and blue dye only
- selective / modified radical neck dissection.

Module 3: Non skin-related neoplasia of the head & neck

Objective: Competence in the diagnosis, assessment and management of all types of non-skin related cancer of the head and neck.

Knowledge

BASIC

Should demonstrate knowledge of

- epidemiology
- types of cancer – oral cavity, nasopharynx, oropharynx, larynx,
- reconstructive options
- TNM Staging of skin cancer
- prognostic factors (tumour and patient related) and implications for patient treatment recommendations
- cancer network guidelines in treatment of non-skin cancers of the head & neck
- understanding the MDT

INTERMEDIATE

Should demonstrate knowledge of

- indications for non-surgical treatment
- adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies.
- cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis.
- palliative treatment options for head & neck cancer.
- hospice care

ADVANCED

Should demonstrate knowledge of

- specific high risk benign skin conditions with associated increased skin cancer risk

Clinical Skills

BASIC

Should to be able to

- take focused history related to non-skin tumours of the head & neck eliciting relevant factors,
- undertake competent head & neck examination particularly of oral cavity, pharynx and larynx
- undertake competent examination of head & neck lymphadenopathy
- initiate appropriate investigations
- work effectively within the head and neck cancer multidisciplinary team.

INTERMEDIATE

Should demonstrate ability to

- assess and manage patients presenting with locally advanced disease,
- interpret CT, MRI & PET scans,
- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues.

ADVANCED

Should demonstrate ability to discuss a cancer diagnosis with patients.

Technical Skills and Procedures

BASIC

Should be able to perform

- incision biopsy of lesion (oral cavity / pharynx / larynx)
- excision biopsy of lesion (oral cavity / pharynx / larynx)
- FNA / core sample of cervical / parotid lymph node
- local flap reconstruction (rotation / transposition / advancement)
- examination under anaesthesia

INTERMEDIATE

Should be able to perform

- selective / modified radical neck dissection
- regional flaps

Module 4: Techniques for reconstruction of the head & neck

Objective: Acquire competence in the planning, execution and management of appropriate soft tissue reconstruction of head & neck defects.

Knowledge

BASIC

Should demonstrate knowledge of

- classification of flaps (random versus axial / muscle flap - Mathes and Nahai classification / type of tissue being transferred)
- factors affecting outcome in flap surgery (patient related, operative, adjuvant therapy related),
- principles of flap surgery (replace “like with like”, reconstructive units, back- up plan and “life boat”, donor site considerations)
- principles of microsurgery
- anatomy of perforators and angiosomes – relevant to planning of local, regional and distal flaps
- anatomy of local, regional and free flaps suitable for head & neck reconstruction
- advantages and disadvantages of local, regional and free flaps in the head & neck
- appropriate use of local, regional and free flaps in the head & neck

INTERMEDIATE

Should demonstrate knowledge of

- relevant surgical anatomy and neurovascular supply of flaps used in head & neck reconstruction

- complications of autologous tissue reconstruction including donor site morbidity
- post-operative flap monitoring techniques
- airway management of the head & neck
- planning and prioritising treatment within the head & neck MDT setting.

Clinical Skills

BASIC

Should demonstrate ability to

- take focused history eliciting factors important for decisions regarding suitability / type of reconstruction
- clinically assess the soft tissue defect
- keep contemporaneous and appropriate record,
- demonstrate simple management techniques including use of appropriate dressings
- plan both local and free flaps appropriately for defect
- co-ordinate soft tissue reconstruction in conjunction with ablative team

INTERMEDIATE

Should demonstrate ability to

- counsel patient regarding advantages and disadvantages of reconstruction - specifically setting realistic expectations, reconstruction as a process, template in- patient stay and complications,
- take informed consent and participate in joint decision- making.
- manage patients in post- operative period,
- manage complications of surgery applicable to the clinic setting.
- use psychological assessment tools for evaluation of psychological needs (patient questionnaires).

Technical Skills and Procedures

BASIC

Should be able to perform

- exposure of vessels
- positioning of patient on operating table
- protection of pressure areas
- prevention of nerve injuries / neurapraxia
- skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis.
- selection / arrangement of appropriate level of post- operative care.

INTERMEDIATE

Should be able to perform

- pre-operative marking of patient
- harvesting vein graft

ADVANCED

Should be able to perform microvascular anastomoses.

Module 5: Reconstruction of specific head and neck sites

Objective: Acquire competence in the planning, execution, management and reconstruction of specific head and neck sub-units including eyelids, nose, lips, ears and scalp.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of tissues suitable for planning of local, regional and distal flaps to specific sites in the head & neck,
- vascular anatomy relevant to planning of local, regional and distal flaps to specific sites in the head & neck,
- recognise the appropriate use, advantages and disadvantages of local, regional and free flaps in reconstruction of specific sites in the head & neck
- factors affecting outcome in flap surgery (patient-related, operative, adjuvant therapy-related).

INTERMEDIATE

Should demonstrate knowledge of

- airway management of the head & neck
- ability to interpret angiographic abnormalities when planning reconstruction of specific sites in the head and neck,
- pre-operative investigations for specific flaps,
- complications of autologous tissue reconstruction including donor site morbidity,
- post-operative flap monitoring techniques,
- planning and prioritising treatment within the head & neck MDT setting.

ADVANCED

Should demonstrate knowledge of

- assessment of outcome,
- effects of radiotherapy

Clinical Skills

BASIC

Should demonstrate ability to

- take focused history eliciting factors important for decisions regarding suitability / type of reconstruction for a specific head and neck site
- clinically assess specific head and neck defects
- keep contemporaneous and appropriate records
- effect simple wound management techniques including use of appropriate dressings
- plan both local, regional and free flaps appropriate for specific defect
- demonstrate soft tissue reconstruction in conjunction with ablative team

INTERMEDIATE

Should demonstrate ability to

- discuss advantages and disadvantages of reconstruction - specifically setting of realistic expectation, reconstruction as a process, template in-patient stay and complications,
- take informed consent and joint decision making,
- manage complications of surgery in pre, peri and post-operative phases.

Technical Skills and Procedures

BASIC

Should be able to perform

- exposure of vessels,
- positioning of patient on operating table,
- protection of pressure areas,
- prevention of nerve injuries / neurapraxia,
- skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis regimens
- selection / arrangement of appropriate post-operative care

INTERMEDIATE

Should be able to perform

- pre-operative marking of patient,

ADVANCED

Should be able to perform microvascular anastomoses.

Module 6: Facial Reanimation

Objective: Competence in the diagnosis of facial palsy and management by both static and

dynamic procedures as well as non-surgical treatments.

Knowledge

BASIC

Should demonstrate knowledge of

- epidemiology,
- anatomy of the facial nerve,
- aetiological causes of facial palsy,
- prognostic factors and implications for patient treatment recommendations,
- range of reconstructive options

INTERMEDIATE

Should demonstrate knowledge of

- non-surgical treatments (Botox, biofeedback, electrical stimulation of facial musculature),
- static sling procedures (tendon, fascia, artificial),
- dynamic sling procedures (temporalis, masseter),
- principles of facial nerve reconstruction (direct suturing, nerve grafting, cross facial nerve grafting).

ADVANCED

Should demonstrate knowledge of

- free muscle transfer techniques (cross facial nerve grafting, gracilis, pectoralis minor, rectus abdominis),
- reconstructive aesthetic techniques (endoscopic browlift, facelift, upper & lower blepharoplasties),

Clinical Skills

BASIC

Should demonstrate ability to

- take focused facial nerve related history eliciting factors localising site of injury,
- undertake competent facial nerve examination ,
- initiate appropriate investigations (CT, MRI, EMG, nerve conduction studies).

INTERMEDIATE

Should demonstrate ability to

- interpret CT, MRI, EMG & nerve conduction studies,

- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues.

ADVANCED

Should demonstrate ability to

- undertake analysis and diagnostic synthesis, judgement and surgical planning pertinent to facial palsy,

Technical Skills and Procedures

BASIC

Should be able to perform

- exploration, protection and identification of facial nerve branches,
- direct repair of facial nerve,
- nerve grafting of facial nerve

LOWER LIMB TRAUMA

Modules:

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

Module 1: Assessment and primary management lower limb injuries

Objective: Acquire competence in the initial combined management of patients with open lower limb fractures in the emergency department.

Knowledge

BASIC

Should demonstrate knowledge of

- resuscitation principles as defined by ATLS.
- applied anatomy, physiology, pathology and mechanisms of limb injury, blood supply of skin, fat and muscle,
- angiosomes of lower limb

- classification of open fractures, including Gustilo classification,
- factors influencing fracture healing,
- timing and rationale for antibiotic use and timing of initial debridement.,
- appropriate pre-operative investigations.
- role of other members of team including microbiologists, physiotherapy, occupational therapy,
- importance of specialist centres, MDT and interdisciplinary communication, especially with orthopaedic colleagues,

INTERMEDIATE

Should demonstrate knowledge of

- pathophysiology of degloving injuries and their classification.
- management of specific injuries e.g. crush and degloving,
- range, indications and principles of surgical options for soft tissue reconstruction: direct closure, skin graft, local and free flaps,
- options of bone fixation, including internal versus external fixation.

ADVANCED

Should demonstrate knowledge of

- role of major trauma centres,
- management of multiply injured patient,
- factors determining decision making in choice of flaps and tissue for soft tissue reconstruction.

Clinical Skills

BASIC

Should demonstrate ability to

- take a focused history for lower limb injury,
- clinically assess and undertake non-operative management of acute injury,
- recognise life-threatening injuries,
- examine to including assessment of severity of injury,
- assess vascular status,
- assess for the presence of compartment syndrome.

INTERMEDIATE

Should demonstrate ability to

- examine neurological status of limb,
- apply the management algorithms pertinent to the conditions covered in this module.

ADVANCED

Should be able to demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning pertaining to lower limb injury.

Technical Skills and Procedures

BASIC

Should be able to perform

- application of appropriate dressings in emergency room,
- reduction of fracture in emergency department,
- application of a plaster cast.

INTERMEDIATE

Should be able to measure compartment pressures and interpret results.

ADVANCED

Should be able to stabilise associated injuries and bleeding.

Module 2: Debridement, stabilisation and compartment syndrome.

Objective: 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.

Knowledge

BASIC

Should demonstrate knowledge of

- principles of fracture management,
- anatomy of lower limb,
- on-table imaging techniques and their interpretation,
- safe access incisions,
- the importance of tissue sampling,
- temporary wound dressings,
- pathophysiology of compartment syndrome.

INTERMEDIATE

Should demonstrate knowledge of

- anatomy of perforators,

- principles and management of fractures and the relevance to subsequent soft tissue reconstruction,
- monitoring and interpretation of results of raised compartment pressures

ADVANCED

Should demonstrate knowledge of principles of bone debridement.

Clinical Skills

BASIC

Should demonstrate ability to

- assess fractures clinically,
- manage wounds in various locations on the lower limb,
- apply plaster splints,
- apply temporary dressings – negative pressure and antibiotic bead pouch,
- measure compartment pressures.

INTERMEDIATE

Should demonstrate ability to

- manage more complex fractures,
- formulate treatment plan for degloving injuries, especially multiplanar degloving.

ADVANCED

Should demonstrate ability to recognise those injuries that would benefit from primary amputation.

Technical Skills and Procedures

BASIC

Should be able to perform

- appropriate pre-wash and prep,
- systematic wound debridement under tourniquet control,
- wound extension along fasciotomy lines,
- application of temporary dressing.

INTERMEDIATE

Should be able to perform

- identification of tissues that can be preserved,
- adequately debride injured soft tissues to achieve a stable wound approaching elective

- conditions,
- release four muscle compartments in leg in cases of compartment syndrome,
- intraoperative planning of future soft tissue reconstruction in conjunction with orthopaedic team and ensure appropriate bone fixation to facilitate this.

ADVANCED

Should be able to perform amputation of non-salvageable limbs

Module 3: Soft tissue reconstruction

Objective: Acquire competence in the planning and execution of appropriate soft tissue cover of open tibial fractures

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of perforators and angiosomes – relevant to planning of local flaps,
- zone of injury
- anatomy of free flaps suitable for lower limb reconstruction with the advantages and disadvantages of each, and the appropriate use of each option.

INTERMEDIATE

Should demonstrate knowledge of

- options available for fracture fixation and tailoring soft tissue management accordingly,
- planning and prioritising treatment within an MDT setting.

ADVANCED

Should demonstrate knowledge of

- principles of circular frames and bone transport,
- controversies of fasciocutaneous versus muscle flaps for soft tissue coverage of open fractures.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess soft tissue defects demonstrating recognition of injury patterns,
- use simple management techniques including use of appropriate dressings,

- use appropriate antibiotics at definitive wound closure,
- plan both local and free flap reconstruction appropriately for defect,
- co-ordinate soft tissue reconstruction in conjunction with orthopaedic team.

INTERMEDIATE

Should be able to

- plan management algorithms for the common injuries covered in this module,
- plan logical step-by-step planning of complex cases in conjunction with orthopaedic surgeons.

ADVANCED

Should demonstrate ability to

- plan management algorithms for the injuries covered in this module including complex injuries,
- plan management and reconstruction for the more complex soft tissue defect in patients requiring distraction lengthening of the skeleton.

Technical Skills and Procedures

BASIC

Should be able to perform

- direct closure,
- skin graft,
- temporary dressings – negative pressure and antibiotic bead pouch..

INTERMEDIATE

Should be able to perform

- nerve repair (direct),
- planning and raising appropriate fasciocutaneous flaps, both proximally and distally-based,
- raising gastrocnemius muscle flap for proximal third/knee defects,
- performing most steps in the raising and anastomosing of free flaps,
- harvesting of vein graft,
- exposure of recipient vessels in leg.

ADVANCED

Should be able to perform

- raising and anastomosing ALT, LD and radial forearm free flaps under supervision,
- nerve repair using sural nerve graft.

Module 4: Vascular injuries and amputation

Objective: Acquire competence in the diagnosis and management of all vascular injuries to the lower limb.

Acquire competence in the recognition and management of patients requiring early and delayed amputations.

Acquire understanding of the impact of amputation level on subsequent rehabilitation and detailed knowledge of the rehabilitation regimens for patients requiring amputation.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of vasculature, including well-known variations e.g. peronea magna,
- response of vessels to injury and repair,
- primary management of vascular injuries and the devascularised limb,
- appropriate use of investigations,
- timing of surgery for acutely ischaemic limb,
- indications for amputation and the levels,
- rehabilitation of amputation patients.

INTERMEDIATE

Should demonstrate knowledge of

- role of vascular shunts,
- role of angiography,
- techniques of vessel repair.

Clinical Skills

BASIC

Should demonstrate ability to

- control bleeding.
- interpret angiograms.

INTERMEDIATE

Should demonstrate ability to

- clinically assess and prepare management algorithms for the conditions covered in this module,
- counsel a patient for limb amputation.

Technical Skills and Procedures

BASIC

Should be able to perform

- exposure of vessels,
- insertion of shunts,
- harvesting vein graft,
- application of skin graft to amputation stump if required.

INTERMEDIATE

Should be able to perform

- vein graft for vascular injury,
- uncomplicated transtibial amputation.

Module 5: Complications

Objective: Acquire competence in the diagnosis and management of both bone and soft tissue complications and recognition of the need for multidisciplinary management.

Knowledge

BASIC

Should demonstrate knowledge of

- consequences of infection following trauma and surgery,
- complications of free flap surgery,
- complications following the use of local flaps,
- those complications which require referral to specialist centres.

INTERMEDIATE

Should demonstrate knowledge of the management of all complications following soft tissue reconstruction including recognition of skeletal complications.

ADVANCED

Should demonstrate knowledge of

- basic science and evidence-base underpinning the management of complications,
- orthopaedic principles of managing delayed union and non-union

Clinical Skills

BASIC

Should demonstrate ability to

- undertake clinical assessment of complications and in particular recognise a compromised free or local flap, in conjunction with general patient parameters.
- use relevant adjunctive techniques such as ultrasound.

INTERMEDIATE

Should demonstrate ability to use a range of free flap monitoring techniques.

Technical Skills and Procedures

BASIC

Should be able to perform

- washout of haematoma/collection.
- application of leeches to flap tip with venous congestion.
- simple debridement of non-viable flap and appropriate application of temporary dressing.

INTERMEDIATE

Should be able to take back free flap to theatre with consultant assistance.

ADVANCED

Should be able to perform

- salvage or amputation of limb following flap failure,
- bone debridement in conjunction with orthopaedic surgeons.
- raising flaps to assist orthopaedic team for skeletal revision surgery including cancellous bone graft

Module 6: Paediatric injuries

Objective: Acquire competence in the diagnosis and management of children with lower limb injuries.

Knowledge

BASIC

Should demonstrate knowledge of

- principles of management of children's injuries – skeletal and soft tissue – and appreciate differences from adults,
- normal growth and development, in particular the importance of growth plates,

INTERMEDIATE

Should demonstrate knowledge of management of open lower limb injuries in children.

ADVANCED

Should demonstrate knowledge of

- management of paediatric lower limb injuries and the specific bone and soft tissue considerations needed with regard to growth,
- controversies regarding paediatric open lower limb injuries,

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess the injured child,
- communicate and liaise with parents,
- work and communicate within the relevant multidisciplinary team (MDT),
- recognise non-accidental injury.

INTERMEDIATE

Should demonstrate ability to plan management algorithms for the paediatric patient with lower limb injury.

ADVANCED

Should demonstrate ability to use skills of analysis and diagnostic synthesis, judgement, and surgical planning.

Technical Skills and Procedures

BASIC

Should be able to stabilise the child with lower limb injury for safe transfer to specialist centre.

INTERMEDIATE

Should be able to perform primary debridement and application of temporary wound dressings in theatre.

ONCOPLASTIC BREAST SURGERY

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

Module 1: Basic Sciences – including embryology, development, anatomy, physiology and genetics, stem cell biology, biology of scarring and wound healing. Management of abnormal scars. Breast assessment – examination, investigations : including imaging and biopsy techniques.

Objective: Acquire competence in basic sciences pertinent to the breast and competence in clinical diagnosis and investigation

Knowledge

BASIC

Should demonstrate knowledge of

- topographical and segmental anatomy of the breast, vascular neural and lymphatic supply / drainage of breast, anatomy of chest wall, abdomen and axilla,
- lymphatic system physiology,
- embryology of breast,
- endocrine physiology and endocrine effects on the breast at puberty, pregnancy, lactation, menopause and in mastalgia,
- effect of hormonal therapeutics on the breast (OCP, HRT, selective estrogen-receptor modulators & aromatase inhibitors)

INTERMEDIATE

Should demonstrate knowledge of

- developmental abnormalities - accessory nipples, accessory breast tissue
- concept and limitations of triple assessment

ADVANCED

Should demonstrate knowledge of

- breast aesthetics (including breast measurements), breast asymmetry, breast hyperplasia, hypoplastic breast syndromes including Poland's syndrome, chest wall deformities, associated limb abnormalities

Clinical Skills

BASIC

Should demonstrate ability to

- take a focused breast history related to any breast symptom,
- examine the breast and axilla,
- request component investigations of triple assessment, and ensure that results are discussed at breast MDT
- accurately record diagnostic findings.

Technical Skills and Procedures

BASIC

Should be able to perform

- free-hand and ultrasound guided lesion FNA
- free-hand core biopsy,
- punch biopsy of skin / nipple.

INTERMEDIATE

Should be able to perform

- surgical excision biopsy.

Module 2: Breast Cancer

Objective: 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.

Knowledge

BASIC

Should demonstrate knowledge of

- epidemiology, histological classification and sub-types of invasive disease and DCIS,
- staging of breast cancer (UICC – TNM),
- prognostic factors (tumour and patient-related) and implications for patient treatment recommendations Breast cancer MDT dataset.

INTERMEDIATE

Should demonstrate knowledge of

- indications for primary medical therapy,
- rationale for neo-adjuvant chemotherapy / endocrine therapy including evidence and limitations,
- indications and contraindications for mastectomy and BCS and appropriate selection of axillary surgery (SLNB versus ALND),
- oncoplastic techniques (therapeutic mammoplasty / IBR/SSM & NSM),
- complications of surgery and their management,
- adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies (NICE clinical guidelines 80 & 81), specifically common regimes, indications, complications and side effects and supporting evidence,
- cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis,
- palliative treatment options for breast cancer.

Clinical Skills

BASIC

Should demonstrate ability to

- take a focussed breast history including presenting complaint, family history, elicit risk factors and identify co-morbidities important in treatment planning,
- examine the breast, nodal basins and relevant distant sites where metastasis suspected,
- initiate appropriate initial investigations as part of triple assessment,
- recognise the importance of, and work effectively within, the breast multidisciplinary team.

INTERMEDIATE

Should demonstrate ability to

- recognise uncommon presentations of breast cancer (Pagets disease, inflammatory carcinoma),
- assess and manage patients presenting with locally advanced disease,
- recognise where further mammographic views or MRI may be required and request these appropriately,
- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients in conjunction with dedicated Breast Care Nurse.

Technical Skills and Procedures

BASIC

Should be able to perform

- appropriate pre-op skin prep and draping and antibiotic prophylaxis,
- palpable excision biopsy, palpable wide local excision,
- sentinel lymph node biopsy, dual modality and blue dye only,
- node sample in centres where SNB not employed,

- simple mastectomy

INTERMEDIATE

Should be able to perform axillary lymph node dissection (level 3) both primary and delayed.

Module 3: Benign breast conditions

Objective: Acquire competence in the diagnosis and management of benign breast conditions.

Knowledge

BASIC

Should demonstrate knowledge of

- pathophysiology and presentation of mastalgia, fibroadenoma, breast cysts, papilloma, benign nipple discharge, duct ectasia, periductal mastitis, mammary duct fistula and breast sepsis (lactational and non- lactational) including microbiology
- Phylloides tumour,
- gynaecomastia,
- involutional change of the breast.

Clinical Skills

BASIC

Should demonstrate ability to

- take focussed breast history, eliciting factors associated with benign breast disease,
- examine breast and axilla
- examine systems associated with benign breast disease (endocrine, abdominal),
- initiate appropriate investigations / triple assessment where indicated

INTERMEDIATE

Should demonstrate ability to

- formulate management plan of benign breast pathology included in this module,
- interpret investigation findings and understand how they differ from findings in malignant disease.

Technical Skills and Procedures

BASIC

Should be able to perform

- free hand aspiration / surgical drainage of breast abscess,
- aspiration of cyst,
- benign lump excision.

INTERMEDIATE

Should be able to perform

- nipple eversion techniques.

Module 4: Reconstruction – Implant based techniques

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

Knowledge

BASIC

Should demonstrate knowledge of

- indications and contraindications to implant based reconstruction,
- surgical anatomy of implant / expander based reconstructive procedures,
- alloplastic materials and tissue interface,
- dermal xenografts.

INTERMEDIATE

Should demonstrate knowledge of

- advantages and disadvantages in comparison to autologous based reconstruction,
- range of devices available,
- implant infection and management,
- implant extrusion,
- capsular contracture,
- aetiology, classification, role of DXT and management, - historical development and controversies.

ADVANCED

Should demonstrate knowledge of

- staged procedures – single and two stage: advantages and disadvantages,

- adjunctive biological technologies,
- outcome of implant based reconstruction,
- relevant literature

Clinical Skills

BASIC

Should demonstrate ability to

- assess suitability for implant based reconstruction and alternatives,
- identify pre-operative factors which can be optimized prior to surgery (smoking, systemic disease).

INTERMEDIATE

Should demonstrate ability to consent patients describing full range of potential complications, and set realistic expectations.

ADVANCED

Should demonstrate ability to select appropriate implants / expanders for patients, recognise post-operative complications and formulate associated management plans.

Technical Skills and Procedures

BASIC

Should be able to

- orient devices and prepare appropriately,
- explain issues regarding antibiotics, drains, changing gloves,
- use electric operating tables,
- protect pressure areas,
- prevent nerve injuries / neurapraxia.

INTERMEDIATE

Should be able to perform

- creation and closure of sub-pectoral pocket

Module 5: Reconstruction – Autologous tissue based techniques

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

Knowledge

BASIC

Should demonstrate knowledge of

- classification of flaps (random versus axial / muscle flap - Mathes and Nahai / type of tissue being transferred)
- factors affecting outcome in flap surgery (patient related, operative, adjuvant therapy related),
- principles of flap surgery (replace “like with like”, reconstructive units, back- up plan and “life boat”, donor site considerations),
- principles of microsurgery.

INTERMEDIATE

Should demonstrate knowledge of

- relevant surgical anatomy and neurovascular supply of flaps used in breast reconstruction (LD, Abdominal wall, I/S GAP, TUG, TDAP),
- concept of angiosomes, specifically in reconstructions using abdominal free flaps,
- indications and contraindications for IBR and DBR – pre-operative factors to be considered in decision making,
- tissue effects of DXT.
- psychological impact of IBR and DBR, - advantages and disadvantages in comparison with implant based reconstruction,
- pre-operative investigations for specific flaps,
- complications of autologous tissue reconstruction including donor site morbidity.

ADVANCED

Should demonstrate knowledge of

- long term outcomes of breast reconstruction
- assessment of outcome (clinical / PROMs),
- reconstruction in prophylactic surgery,
- partial breast reconstruction,
- nipple reconstruction techniques,
- flap salvage and options following failure,
- lipomodelling in reconstruction (indications, complications and controversies – stem cells, mammographic follow-up).

Clinical Skills

BASIC

Should demonstrate ability to

- take history eliciting factors important for decisions regarding suitability / type of autologous reconstruction,

- maintain clear documentation in the notes in the post-operative period.

INTERMEDIATE

Should demonstrate ability to

- assess suitability for IBR vs DBR,
- discuss advantages and disadvantages of reconstruction - specifically setting of realistic expectation, reconstruction as a process, template in- patient stay and complications,
- describe importance of informed consent and joint decision making,
- manage complications of surgery in clinic (wound, seroma),
- manage patients appropriately in post-operative period.

ADVANCED

Should demonstrate ability to

- identify patients not suitable for autologous reconstruction (physical and psychological contraindications),
- undertake appropriate post-operative assessment of (free) flaps,
- plan algorithms for managing complications.

Technical Skills and Procedures

BASIC

Should be able to perform

- positioning of patient on operating tissue,
- protection of pressure areas,
- prevention of nerve injuries / neurapraxia,
- skin preparation, draping and antibiotic prophylaxis,
- selection / arrangement of appropriate level of post-operative care,
- use of electric operating tables.

INTERMEDIATE

Should be able to perform

- pre-operative marking of patient ,
- raising pedicled autologous flaps including latissimus dorsi.
- in-setting of flap.

ADVANCED

Should be able to perform

- preoperative marking up of patient,
- nipple reconstruction techniques (nipple sharing procedures, local flaps, tattooing),
- raising pedicled autologous TRAM or DIEP flap,

- free-flap techniques,
- microvascular anastomoses,
- lipomodelling for correction of resectional defects,
- lipomodelling in breast reconstruction.

Module 6: Aesthetic Surgery of the Breast

Objective: Acquire competence in the diagnosis, aesthetic assessment and safe management of all deformities and conformations of the breast, developmental and acquired, pathological and physiological. Acquire proficiency in all aspects of breast reconstruction and subsequent revisional procedures. Acquire facility in the psychological assessment of patients presenting for breast surgery.

Knowledge

BASIC

Should be able to demonstrate knowledge of

- applied and surgical anatomy of the breast, its blood, nerve supply and function,
- development of the breast and congenital deformity and variations of breast form and associated structures,
- hormonal control of the breast and its pathology, when deranged,
- breast physiology in pregnancy and lactation,
- benign pathologies of the breast,
- presentation, clinical features of breast cancer, its staging, prognosis and management pathways,
- effect of ionizing radiation on the breast and implants,
- planning incisions on the breast.
- closure and management of breast wounds.
- self-perception and self-consciousness in relation to breast conformation and proportion including the social and sexual dimensions,
- pathology of deranged self-image.

INTERMEDIATE

Should be able to demonstrate knowledge of

- content, structure, physical and biological properties of breast implants,
- spectrum of implants available and their applications,
- design, principles and applications of tissue expanders,
- nature, physiology and behaviour of implant capsules,
- management of capsular contractures.
- biology, implications, avoidance of and management of implant infection,
- various designs and approaches to breast augmentation and their applications.
- issues surrounding breast size and its assessment.
- complications of breast augmentation and their management.
- various designs and patterns of breast reduction and mastopexy,
- complications and management of breast reduction/remodelling.

- presentation, management and complications of gynaecomastia.

ADVANCED

Should be able to demonstrate knowledge of

- assessment of envelope and volume in relation to breast asymmetry, both developmental and acquired,
- classification and management pathways of the tuberous breast,
- management pathways and choices in breast asymmetry,
- impact of breast reconstruction choices on symmetry,
- effect of time, ageing and pregnancy on breast asymmetry correction,
- various techniques of breast reconstruction, their applications, design and planning,
- complications of breast reconstruction,
- techniques for nipple reconstruction, including considerations of sequence and timing,
- features of dysmorphophobia,
- psychosexual dimension in aesthetic breast surgery.

Clinical Skills

BASIC

Should demonstrate ability to

- assess and undertake non-operative management of the acute surgical patient,
- take a targeted breast history,
- perform patient examination including breast examination with reference to aesthetic considerations.

INTERMEDIATE

Demonstrate knowledge of the management algorithms for the procedures covered in this section including investigations.

ADVANCED

Should be able to

- demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning,
- assess and accurately record aesthetic concerns about the breast,
- formulate management plans in relation to aesthetic interventions,
- clearly explain, consent and counsel potential patients for aesthetic breast surgery,
- assess the psychological suitability for aesthetic breast surgery and appropriately refer for expert psychological advice as necessary,
- undertake risk benefit analysis of non-pathological based surgery,
- deal with disappointment and postoperative dissatisfaction

Technical Skills and Procedures

BASIC

Should be able to perform

- planning, execution and closing incisions on the breast with reference to aesthetic principles and sub units.
- designing and conduction of excision of skin lesions of the breast,
- undertaking an aesthetic approach to removal of benign lesions of the breast,
- scar revision in aesthetic breast surgery

INTERMEDIATE

Should be able to perform

- correction of the inverted nipple (various techniques),
- bilateral breast augmentation by various routes, in various planes
- Wise pattern bilateral breast reduction,
- vertical pattern bilateral breast reduction,
- bilateral mastopexy of periareolar, vertical and Wise patterns,
- excision of gynaecomastia, incorporating various forms of liposuction as appropriate.

PELVIC RECONSTRUCTION

Module:

Pelvic reconstruction

Objective: Acquire competence in the principles of management including reconstruction of the pelvic defect.

Knowledge

BASIC

Should demonstrate knowledge of:

- types and basic management of various types of pelvic/genito- urethral malignancy.
- effects of gender on defect
- principle of management of malignancy of pelvic origin
- role of the MDT
- range of flaps and techniques available for reconstruction

INTERMEDIATE

Should demonstrate knowledge of techniques available for pelvic defect reconstruction including:

- assessment of the nature of the commoner partial defects and the most appropriate flaps
- assessment of total perineal defect and the main types of flap.
- pros and cons of various flaps for various defects

ADVANCED

Should demonstrate knowledge of techniques available for specific aspects of pelvic and perineal reconstruction such as:

- penile amputation for carcinoma.
- vulval reconstruction with fasciocutaneous flaps
- coverage of exposed testis following Fourniers
- urethral reconstruction options following malignancy or
- trauma, including flap, FTSG, transplantation of urethra, tubed bladder wall

Clinical Skills

BASIC

Ability to demonstrate

- 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.

INTERMEDIATE

Ability to demonstrate

- 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.

ADVANCED

Ability to manage and lead

- 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.

Technical Skills and Procedures

BASIC

Should be able to perform

- raising local flaps
- use of quilted SSG for penile amputation
- raise and deal with donor site for SSG and FTSG including BUMG.

INTERMEDIATE

Should be able to perform

- elevation of complex flaps including, Lotus flap, Singapore flap, Inferiorly based TRAM and VRAM, SIEA flap and gracilis flap.

ADVANCED

Should be able to perform specific operations for perineal reconstruction such as:

- penile amputation for carcinoma
- urethral reconstruction for stricture or trauma
- vaginal reconstruction following malignancy

SKIN SURGERY

Modules:

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

Module 1: Basic Sciences – embryology, development, anatomy and physiology Skin assessment – examination, investigations including imaging and biopsy techniques.

Objective: Acquire competence in the development, anatomy and physiology of the skin in relation to its surgery.

Acquire competence in the diagnosis, use of imaging and management of suspicious skin lesions.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of the skin-epidermal and dermal layers and appendigeal structures,
- embryology of the skin,
- histopathological appearance of skin,
- anatomy of the body surface, in particular the head and neck, hands, nails and feet,
- vascular, neuronal and lymphatic supply / drainage of the head & neck, trunk and limbs, blood supply of the skin,
- diagnostic imaging of skin neoplasia X-rays, CT, MRI, US, PET-CT, and imaging assisted diagnostic biopsy,
- standard skin stains used for histology,
- origin of stains used and for what purpose
- immunocytochemistry and cytogenetic techniques ,
- common benign skin disorders-hidradenitis suppurativa, epidermal cysts, lipomas, vascular and congenital malformations,
- melanocytic naevi including giant, actinic lesions and epidermal/dermal lesions etc., risks of malignant transformation in chronic lesions, giant melanocytic naevi and Marjolin's ulcers,
- specific history and diagnostic features (clinical and non-clinical) of benign skin lesions (pigmented and non-pigmented), dysplastic naevi, lentigo maligna, melanoma and non-melanoma skin cancers (basal cell carcinoma and squamous cell carcinoma), dermatofibroma, keratoacanthoma, pilomatrixoma, actinic keratoses, Bowen's disease,
- clinical features of dermatitis artefacta, folliculitis, pyogenic granuloma, inflammatory skin conditions (hidradenitis and acne vulgaris), fungal skin lesions, lentiginos, angiomas,
- difference between telangiectasia and spider naevi,
- chronic wounds and pressure sores.

INTERMEDIATE

Should demonstrate knowledge of

- anatomy of special sites, the pelvis, epitrochlear and popliteal fossa, the triangular space of the back, the axilla, head and neck lymph node basins,
- anatomy and access for diagnostic biopsies when required,
- concepts and limitations of diagnostic techniques, dermoscopy, mapping biopsies, frozen sections,
- range, indications and principles of surgical options for surgical ablation of tumours of the skin,
- staged histological clearance
- sentinel node biopsy,
- the role of the skin MDT,
- diagnosis of lesions at difficult sites, subungual, large facial lesions, mucosal lesions, metastatic lesions,
- the range of dressings for open skin lesions/wounds.

ADVANCED

Should demonstrate knowledge of

- anatomy in particular for block dissections of the axilla, inguinal, iliac and ilioinguinal regions,
- functional and surgical anatomy of the face, head and neck,
- the surgical options for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips), the trunk, the upper lower and lower limb,
- the range of dressings available for complex wounds/ulcers.

Clinical Skills

BASIC

Should demonstrate ability to

- take focused skin history related to any skin lesion and skin symptoms,
- use the magnifying glass, lighting, dermoscopy
- plan non-operative management of small open wounds,
- use non-operative methods of hemostasis in the acutely bleeding wound/ulcer,
- examine of the head & neck, upper limb, lower limb, abdomen and pelvis,
- assess lesions on the face, head and neck, hand, arm, trunk and lower limb,
- examine regional lymph nodes,
- organise discussion of cases at clinical meetings,
- accurately record diagnostic findings,
- use the current minimum dataset for skin cancers,
- use current databases and audit and peer review tools according to published requirements and guidelines.

INTERMEDIATE

Should demonstrate ability to

- assess the chronic ulcer/wounds,
- interpret, CT, PET-CT and MRI scans,
- interpret and discuss cytological and histological biopsy reports.

ADVANCED

Should demonstrate ability to

- interpret any scans performed in particular PET, PET-CT and lymphoscintigraphy,
- assess and formulate management plan for the large complex wound,
- formulate appropriate and timely management, investigations, treatment and follow up plan for a patient in respect of all types of benign and malignant skin lesions

Technical Skills and Procedures

BASIC

Should be able to perform

- free-hand and ultrasound guided lesion biopsy
- FNA of suspected lesions, punch biopsy,
- harvesting of cells for cytological examination for fungus or malignancy,
- aspiration of seromas or cystic skin lesions,
- excision biopsy of undiagnosed skin lesions smaller than 1cm in size including those suspicious for malignancy and direct closure techniques,
- application of the appropriate dressings in open wounds,
- application of the appropriate dressings in infected skin wounds

INTERMEDIATE

Should be able to perform

- surgical incision / excision biopsy of lesions at difficult sites (any size if periorbital, nasal, sole of the foot or hands and larger lesions on the pretibial region),
- biopsy of subungual lesions,
- use of staged histological clearance
- application of a negative pressure dressing.

ADVANCED

Should be able to perform

- sentinel lymph node biopsy to include interpretation of result
- surgical incision / excision biopsy of large suspicious skin lesions (greater than 1cm in size) including large facial lesions,

Module 2: Primary treatment of Skin-related neoplasia

Objective: Acquire competence in the diagnosis, assessment and management of all types of primary skin-related neoplasia.

Knowledge

BASIC

Should demonstrate knowledge of

- epidemiology ,
- histological classification (basal cell carcinoma / squamous cell carcinoma / Melanoma / Merkel cell/ porocarcinoma/ adnexal and pre-cancerous lesions,
- potential differential diagnosis skin lesions,
- staging of skin cancer (SCC and melanoma), (histological classifications, TMN, AJCC

- and current),
- prognostic factors (tumour and patient related) and implications for patient treatment recommendations
- implications of the occupational, family history, sun exposure history and immunosuppression,
- genetic counselling and referral indications,
- margins of excision for different histological types of basal cell carcinomas, Squamous cell carcinomas, Bowen's disease, in-situ disease, dermatofibroma and benign dysplastic skin lesions.
- peer review and NICE guidelines in treatment of melanoma and non-melanoma skin cancers (melanoma, SCC, Sarcoma, Bowen's, actinic keratoses, Kaposi's sarcoma and BCC's) in particular margin recommendations,
- the role of the MDT,
- peer review and MDM documentation,

INTERMEDIATE

Should demonstrate knowledge of

- margins of excision of different stages of melanoma, porocarcinoma, Merkel Cell carcinoma, Dermatofibroma sarcoma Protuberans, fibrosarcoma and suprafascial sarcoma,
- indications for non-surgical treatment (Photodynamic therapy- PDT, Cryotherapy, laser and topical therapies)
- indications for sentinel lymph node biopsy and other prognostic investigations,
- adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies particularly for melanoma,
- cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis,
- palliative treatment options for skin cancer.

ADVANCED

Should demonstrate knowledge of

- association between specific high risk benign skin conditions with associated increased skin cancer risk,
- genetic conditions in skin cancer,
- melanoma tumour biology,
- controversies that have existed around sentinel lymph node biopsy, its history, origins and basis of sentinel lymph node biopsy,
- theories of melanoma spread - incubator versus marker theory,
- important adjuvant and neo-adjuvant historical and current national and international trials (clinical/surgical, chemotherapy, radiotherapy, laser, hormonal and biological).

Clinical Skills

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 with skin cancer.

Technical Skills and Procedures

BASIC

Should be able to perform

- excision biopsy of lesion and incision biopsy of skin lesions when indicated,
- Fine Needle Aspiration-FNA / core sample of lymph nodes,
- wider excision of skin tumours with the advised margins on the trunk, leg and arm,
- local flap reconstruction (rotation / transposition / advancement),
- optimum placement of incisions allowing for possible secondary surgery and future block dissections,
- explain the rationale for use of split and full thickness skin grafts and artificial skin

- replacements,
- pre-op skin prep and draping and antibiotic and venous thromboembolism prophylaxis,
- node sample in centres where sentinel lymph node biopsy is not employed.

INTERMEDIATE

Should be able to perform

- wider excision of lesions with the advised margin on the skin of the head and neck, face, genitalia and hand,
- head and neck, truncal and limb sentinel lymph node biopsy, - level I, II and III axillary dissections and inguinal block dissection,
- regional flaps – various including rotational, advancement, axial pattern.

ADVANCED

Should be able to perform

- pelvic or head and neck block dissection,
- reconstruction with regional and distant flaps,
- free flap surgery,
- reconstruction of aesthetic units (nose / eyelids / ears / lips) and special sites – nose, digits, eyes, genitalia and ears,
- oculoplastic techniques

Module 3: Treatment of recurrent and chronic skin tumours

Objective: Acquire competence in the diagnosis, assessment, investigation and management of all types of recurrent and metastatic skin cancers.

Knowledge

BASIC

Should demonstrate knowledge of

- epidemiology and genetics of skin,
- basic understanding of familial syndromes,
- genes/oncogenes associated with skin cancer,
- margins of excision for metastatic lesions including national guidance,
- types of cancer – recurrences, new primaries, related malignancies,
- immunosuppressed patients,
- syndromic patients, ie, Gorlin's, Cowden's, polyposis coli, melanosis, xeroderma pigmentosum, giant melanocytic naevi, skin conditions in immunocompromised patients,
- TNM Staging of skin cancer,
- prognostic factors (tumour and patient related) and implications for patient treatment recommendations,
- rationale and types of imaging for prognostic and staging information,

- biopsies, FNA, USS, X-Ray, CT, MRI, PET-CT, SPECT-CT and SNB,
- cancer network guidelines in treatment of recurrent skin cancers,
- functioning of the MDT,

INTERMEDIATE

Should demonstrate knowledge of

- indications for non-surgical treatment,
- anatomy and techniques for excision and closure of block dissections,
- adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies,
- Staged Histological Clearance (SHC), isolated limb infusions, ECT, isolated limb perfusion, CO2 laser ablation and minimally invasive techniques including laparoscopic and robotic surgery,
- cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis,
- palliative treatment options for the skin cancer patient,
- management of the complex wound,
- hospice care

Clinical Skills

BASIC

Should demonstrate ability to

- take focused skin related history,
- elicit factors associated with malignant non-skin related neoplasia,
- examine skin of entire body surface for additional primary tumors,
- examine all sites for regional lymphadenopathy,
- initiate appropriate investigations,
- work effectively within the skin cancer multidisciplinary team,
- manage the non-operative aspects of the chronic wound including pressure sores

INTERMEDIATE

Should demonstrate ability to

- interpret CT, MRI & PET scans,
- assess and manage patients presenting with locally advanced disease,
- recognise where further pathology or radiology may be required and request these appropriately,
- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues.

ADVANCED

Should demonstrate ability to

- formulate management plan using skills of analysis and diagnostic synthesis, judgement in particular for the patient with multiple co- morbidities,
- discuss a skin cancer diagnosis and prognosis with patients,
- communicate skilfully with patients and with other members of the clinical team,

Technical Skills and Procedures

BASIC

Should be able to perform

- incision biopsy of lesions,
- excision biopsy of lesions,
- FNA / core sample of lymph nodes,
- undertaking local flap reconstruction (rotation / transposition / advancement).

INTERMEDIATE

Should be able to perform

- cervical sentinel lymph node biopsy
- regional lymph node dissections of the axilla and groin,
- regional flaps, pedicled reconstructions
- use of dermal substitutes for wound resurfacing

ADVANCED

Should be able to perform

- free flap surgery,
- reconstruction of aesthetic units (nose / eyelids / ears / lips),
- mapping biopsy techniques Staged Histological Clearance (SHC).

Module 4: Reconstructive techniques for skin surgery

Objective: Acquire competence in the planning, execution and management of appropriate soft tissue reconstruction of skin defects.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of perforators and angiosomes – relevant to planning of local, regional and distal flaps,
- anatomy of local, regional and free flaps suitable for head & neck reconstruction,

- classification of flaps (random v axial / muscle flap - Mathes and Nahai / type of tissue being transferred),
- advantages and disadvantages of local, regional and free flaps in the patient post skin tumour excision,
- use of local, regional and free flaps in the head & neck/upper limb/leg/chest and trunk,
- factors affecting outcome in flap surgery (patient related, operative, adjuvant therapy related),
- principles of flap surgery (replace “like with like”, reconstructive units, back-up plan and “life boat”, donor site considerations),
- principles of microsurgery

INTERMEDIATE

Should demonstrate knowledge of

- indications for preoperative investigations for specific flaps,
- post-operative flap monitoring techniques,
- complications of autologous tissue reconstruction including donor site morbidity,
- use of common skin substitutes

ADVANCED

Should demonstrate knowledge of

- factors determining decision making in choice of flaps and tissue for soft tissue defect reconstruction,
- factors determining decision making in choice of flaps and tissue for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips), factors determining appropriate surgical ablation techniques,
- range, indications and principles of surgical options and non- operative techniques,
- assessment of outcome,
- flap salvage and options following failure.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess the soft tissue defect,
- take history, eliciting factors important for decisions regarding suitability / type of reconstruction,
- perform contemporaneous and appropriate record keeping.
- manage uncomplicated wounds using a range of dressings,
- plan both local and free flaps resurfacing of soft tissue defects,
- co-ordinate soft tissue reconstruction in conjunction with ablative team,
- manage the patient following Staged Histological Clearance (SHC).

INTERMEDIATE

Should demonstrate ability to

- discuss advantages and disadvantages of reconstructive options with patients specifically setting realistic expectations, advising on reconstruction as a process, and detailing possible complications,
- take informed consent from patients and participate in joint decision making,
- arrange appropriate level of post-operative care.
- manage complications of surgery appropriately in post-operative period and in the clinic,
- use of common skin substitutes

ADVANCED

Should demonstrate ability to

- clinically assess complex reconstructive requirements and formulate appropriate management plan,
- interpret investigations as part of formulating management plan.

Technical Skills and Procedures

BASIC

Should be able to perform

- positioning of patient on operating table.,
- protection of pressure areas,
- prevention of nerve injuries / neurapraxia,
- pre-operative marking of patient, skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis,
- split skin grafting, full thickness skin grafting
- range of local flaps

INTERMEDIATE

Should be able to perform

- reconstruction of the scalp and management of chronic scalp wounds and the unstable scalp,
- raising pedicled autologous flaps,
- in-setting of flap,
- harvesting chondrocutaneous, cartilage, composite grafts and vein grafts,
- use of common skin substitutes

ADVANCED

Should be able to perform

- 3D reconstruction of specialised structures,
- reconstruction of the periorbital structures/ear and nose,
- microvascular anastomoses,

Module 5: Scarring, wounds and other surgical conditions of the skin

Objective: 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

Knowledge

BASIC

Should demonstrate knowledge of

- skin anatomy,
- aetiology and related benign conditions,
- hypertrophic scars, keloids, dermatofibroma, epidermal cysts, lentigines, actinic keratoses, xanthelasmata, lipomas,
- history and examination of the skin.

INTERMEDIATE

Should demonstrate knowledge of

- dermoscopy and imaging techniques of the skin,
- Marjolin's ulcer, pilomatrixoma, DFSP, hidradenitis suppuritiva, acne scarring, inflammatory skin conditions.

ADVANCED

Should demonstrate knowledge of

- consequences of nerve resection and other functional deficits after resection of tumour,
- lymphoedema,
- complex wounds,
- psychological and social issues that can affect the skin cancer patient,

Clinical Skills

BASIC

Should demonstrate ability to

- assess the skin using dermoscope,
- recognise infection, induration, lymphoedema, seroma, post radiotherapy recurrence in complex scars.

INTERMEDIATE

Should demonstrate ability to

- assess surgical scar and deploy non-operative techniques for scar improvement,
- injection techniques for scar improvement,
- manage functional and psychological effects of post cancer resection surgery,

ADVANCED

Should demonstrate ability to

- make decisions and analyse the options for aesthetic improvement in the surgically-scarred cancer patient including advance communications skills.

Technical Skills and Procedures

BASIC

Should be able to perform

- debulking of keloids,
- excision of benign lesions,
- shave excisions,
- laser ablation of skin lesions,
- incision and curettage for active hidradenitis suppurativa.

INTERMEDIATE

Should be able to perform

- botulinum toxin and filler injections,
- scar release,
- z-plasty,
- reconstruction post excision of scars,
- surgical options of laser,
- excision or sclerotherapy for vascular malformations,
- fat grafting.

Module 6: Multidisciplinary team workings, allied professionals, palliative care and follow up regimes, trials, research and national guidelines

Objective: 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.

Knowledge

BASIC

Should demonstrate knowledge of

- national guidelines (NICE) for the diagnosis, treatment and follow up of BCC, SCC's, Bowen's, Melanoma, dermatofibrosarcoma protuberans and suprafascial sarcoma,
- surgical and non surgical options.

INTERMEDIATE

Should demonstrate knowledge of

- management of the patient with recurrent disease (surgical, non-surgical and radiotherapy options),
- stages of bereavement that can be associated with loss of body image and the clinical and psychological supports that can be put in place to assist the patient cope with that loss.

Clinical Skills

BASIC

Should demonstrate ability in using communication and referral pathways to specialist MDM's

INTERMEDIATE

Should demonstrate ability to

- interpret lymphoscintigraphy, CT, MRI, PET, FNA, USS and pathology minimum dataset,
- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues,
- apply psychological assessment tools for evaluation of psychological needs (patient questionnaires).

Technical Skills and Procedures

BASIC

Should be able to perform

- excision of small skin recurrences / in transit metastases,
- recording surgical procedures,
- handling of surgical specimens,
- orientation and appropriate carriage medium for skin specimens,
- performing FNA.

VASCULAR ANOMALIES

Module:

Vascular Anomalies

Objective: Competence in the assessment, surgical management and aftercare of vascular anomalies.

Knowledge

BASIC

Should demonstrate knowledge of

- classification and natural history of the common types of vascular anomalies including haemangiomas and vascular malformations affecting different vessels
- diagnostic criteria of main types of vascular anomalies including ability to distinguish high and low flow lesions as originally described by Mulliken

INTERMEDIATE

Should demonstrate knowledge of

- abnormalities and syndromes associated with haemangiomas (eg PHACE syndrome, Kasabach-Merritt syndrome, Maffucci's syndrome) and vascular malformations (eg Sturge-Weber, Klippel-Trenaunay, Parkes-Weber, Hereditary Haemorrhagic Telangiectasia)
- indications for radiological investigations and safety issues pertaining to those investigations including MRI, CT and angiography
- pharmacological interventions that are or have been used in the treatment of haemangiomas eg corticosteroids (systemic and intralesional), propranolol and possible side effects
- principles of management of vascular tumours and malformations
- problems related to multiple lesions eg haemangiomas including visceral or venous malformations
- different types of laser treatment for vascular malformations eg pulsed dye laser and long pulse Neodymium:YAG laser including the role of topical cooling
- role of the MDT in management of Vascular Anomalies

ADVANCED

Should demonstrate knowledge of:

- difficult to classify lesions eg glomangiomas, rapidly involuting congenital haemangiomas, non-involuting congenital haemangiomas, tufted haemangiomas and haemangioendotheliomas
- appearance of different vascular lesions on ultrasound, MRI, CT and angiography
- different radiological procedures used for the treatment of vascular anomalies, eg

- sclerotherapy for venous malformations and lymphatic malformations and embolization of arteriovenous malformations and their potential complications
- techniques of surgical excision of difficult lesions such as arteriovenous malformations in conjunction with embolization and problems of surgical treatment in eg Klippel-Trenaunay syndrome and the importance of preserving venous drainage

Clinical Skills

BASIC

Should demonstrate ability to:

- correctly diagnose the main types of haemangiomas and vascular anomalies on history and physical signs
- advise patients and parents on the natural history of haemangiomas and different vascular anomalies including prognosis of these lesions

INTERMEDIATE

Should demonstrate ability to:

- utilise investigations to confirm diagnosis,
- demonstrate extent of a vascular anomaly,
- formulate a treatment plan utilising medical and non-invasive methods of management in an appropriate and effective way,
- liaise as needed with other specialities eg radiology, dermatology, ophthalmology ENT

ADVANCED

Should demonstrate ability to:

- plan appropriate interventional treatments
- advise patients and parents on outcomes and complications of radiological, laser-based and surgical interventions with particular reference to critical anatomical sites including orbit, perioral and parotid areas

Technical Skills and Procedures

BASIC

Should be able to use a hand held Doppler for diagnostic purposes.

INTERMEDIATE

Should be able to perform

- debulking of infantile haemangioma
- excision of small vascular malformation
- injection of steroids into infantile haemangioma

TRAINING YEAR 5 AND SPECIAL INTEREST / SUB-SPECIALITY TRAINING

AESTHETIC SURGERY

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

Module 1: Aesthetic Surgery of the Breast

Objective: Acquire competence in the diagnosis, aesthetic assessment and safe management of all deformities and conformations of the breast, developmental and acquired, pathological and physiological. Acquire proficiency in all aspects of breast reconstruction and subsequent revisional procedures. Acquire facility in the psychological assessment of patients presenting for breast surgery.

Knowledge

BASIC

Should be able to demonstrate knowledge of

- applied and surgical anatomy of the breast, its blood, nerve supply and function,
- development of the breast and congenital deformity and variations of breast form and associated structures,
- hormonal control of the breast and its pathology, when deranged,
- breast physiology in pregnancy and lactation,
- benign pathologies of the breast,
- presentation, clinical features of breast cancer, its staging, prognosis and management pathways,
- effect of ionizing radiation on the breast and implants,
- planning incisions on the breast.
- closure and management of breast wounds.
- self-perception and self-consciousness in relation to breast conformation and proportion including the social and sexual dimensions,
- pathology of deranged self-image.

INTERMEDIATE

Should be able to demonstrate knowledge of

- content, structure, physical and biological properties of breast implants,

- spectrum of implants available and their applications,
- design, principles and applications of tissue expanders,
- nature, physiology and behaviour of implant capsules,
- management of capsular contractures.
- biology, implications, avoidance of and management of implant infection,
- various designs and approaches to breast augmentation and their applications.
- the issues surrounding breast size and its assessment.
- complications of breast augmentation and their management.
- various designs and patterns of breast reduction and mastopexy,
- complications and management of breast reduction/remodelling.
- presentation, management and complications of gynaecomastia.

ADVANCED

Should be able to demonstrate knowledge of

- assessment of envelope and volume in relation to breast asymmetry, both developmental and acquired,
- classification and management pathways of the tuberous breast,
- management pathways and choices in breast asymmetry,
- impact of breast reconstruction choices on symmetry,
- effect of time, ageing and pregnancy on breast asymmetry correction,
- various techniques of breast reconstruction, their applications, design and planning,
- complications of breast reconstruction,
- techniques for salvage of failed breast surgery,
- techniques for nipple reconstruction, including considerations of sequence and timing,
- features of dysmorphophobia,
- psychosexual dimension in aesthetic breast surgery.

Clinical Skills

BASIC

Should demonstrate ability to

- assess and undertake non-operative of the management of the acute surgical patient,
- take a targeted breast history,
- perform patient examination including breast examination with reference to aesthetic considerations.

INTERMEDIATE

Demonstrate knowledge of the management algorithms for the procedures covered in this section including investigations.

ADVANCED

Should be able to

- demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning,
- assess and accurately record aesthetic concerns about the breast,
- formulate management plans in relation to aesthetic interventions,
- clearly explain, consent and counsel potential patients for aesthetic breast surgery,
- assess the psychological suitability for aesthetic breast surgery and appropriately refer for expert psychological advice as necessary,
- undertake risk benefit analysis of non-pathological based surgery,
- deal with disappointment and postoperative dissatisfaction

Technical Skills and Procedures

BASIC

Should be able to perform

- planning, execution and closing incisions on the breast with reference to aesthetic principles and sub units.
- designing and conduction of excision of skin lesions of the breast,
- undertaking an aesthetic approach to removal of benign lesions of the breast,
- scar revision in aesthetic breast surgery

INTERMEDIATE

Should be able to perform

- correction of the inverted nipple (various techniques),
- bilateral breast augmentation by various routes, in various planes,
- Wise pattern bilateral breast reduction,
- vertical pattern bilateral breast reduction,
- bilateral mastopexy of periareolar, vertical and Wise patterns,
- excision of gynaecomastia, incorporating various forms of liposuction as appropriate.

ADVANCED

Should be able to perform

- correction of the spectrum of nipple deformities,
- unilateral or differential breast augmentation to attain symmetry,
- unilateral or asymmetric breast reduction in pattern or volume to attain symmetry,
- synchronous mastopexy and breast augmentation in several patterns,
- correction of tuberous breast by combinations of mastopexy, augmentation or tissue expansion,
- unilateral or differential mastopexy in pattern or extent to attain symmetry.
- revision procedures following previous aesthetic surgery of the breast.
- aesthetic surgery of the breast as above in patients with previous breast cancer or irradiation.
- fat grafting for minor deformities of the breast.

Module 2: Aesthetic Surgery of Face, Orbit & Neck Rejuvenation

Objective: 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.

Knowledge

BASIC

Should be able to demonstrate knowledge of

- psychology of the desire for anti-aging interventions,
- features denoting high-risk groups of patients that may present for surgical rejuvenation,
- normal facial anatomy and its common variants, including clear understanding of the blood supply, sensory and motor innervation,
- facial musculature and the course and distribution of the facial nerve,
- the fascial planes of the face and the brow and the pattern of fascial compartments of the brow, face and neck,
- anatomy of the eyelids,
- cosmetic units of the face,
- the effect of sun exposure on the texture and elasticity of the skin and the patterns of aging,
- effect of various laser/light treatments on the dermis,
- mechanisms of healing of partial thickness injury in facial skin,
- formulation and application of chemical peeling agents.

INTERMEDIATE

Should be able to demonstrate knowledge of

- accurate assessment and analysis of the pattern of face aging,
- injectable fillers available, their uses, contraindications and interactions,
- complications of various fillers and their management,
- pharmacology of paralytic agents, the different formulations and the muscle groups to which they may be applied,
- role of fillers and paralytics in the overall patient management plan,
- indications for, and design of, endoscopic and open browlift and foreheadplasty,
- fixation methods in brow lift,
- indications and contraindications for facelift,
- anatomy of the SMAS layer and how it may be modified,
- facial fat pads and how they change with time,
- variation of designs for facelift incisions,
- different methods of facelifting,
- different methods of necklifting,
- designs and variations of blepharoplasty, upper and lower,
- role of submental lipectomy and liposuction,
- management of complications of rejuvenation surgery.

ADVANCED

Should be able to demonstrate knowledge of

- choice of brow lift and its combination with upper lid surgery and facelift,
- choice of facelift for a given pattern of aging,
- design and application of deep plane lifts and isolated midface lifting,
- importance and role of volumetric enhancement in facial contouring,
- applications, indications, limitations and complications of blepharoplasty alone and in combination with other techniques,
- use and techniques of platysmaplasty including limitations and complications, appropriate addition of adjuvant techniques, resurfacing, fillers, lip enhancement and lift,
- impact of manipulations of the teeth dentures, the facial plane including genioplasty.

Clinical Skills

BASIC

Should demonstrate ability to

- assess and deliver non-operative management of the acute surgical patient,
- take history to include features relevant to the assessment and management of the aesthetic features of the head and neck,
- examine the patient to include relevant aesthetic features of the head and neck.

INTERMEDIATE

Should be able to

- demonstrate knowledge of the management algorithms, combinations and permutations of the rejuvenation procedures covered in this section including appropriate investigations,
- record accurate assessment of the pattern of symptoms and physical features.

ADVANCED

Should be able to

- demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning,
- prepare an overall management plan for a given patient,
- assess the psychological suitability for rejuvenation surgery and appropriately refer for expert advice as necessary,
- undertake risk benefit analysis of non-pathological based surgery,
- counsel and consent a patient for rejuvenation intervention.
- define the subgroup of patients that can be managed by nonsurgical intervention,
- recognise and counsel the unrealistic patient,
- manage the situation whereby a patient's best interests are served by declining to treat that patient,
- deal with disappointment and postoperative dissatisfaction.

Technical Skills and Procedures

BASIC

Should be able to perform

- planning, designing and performing excision of facial skin lesions for aesthetic indications,
- selecting and using injectables for fine rhytids,
- using paralytics to weaken aging muscle groups,
- pan or regional facial rejuvenation by laser / chemical peel / dermabrasion,
- upper lid blepharoplasty.

INTERMEDIATE

Should be able to perform

- assessment and analysis of all the features of the aging eyelid,
- open browlift,
- skin only facelift,
- facelift with plication of the SMAS,
- MACS lift,
- neck lift,
- dermofat grafting in the lip and other areas,
- submental lipectomy,
- liposuction for the face and neck areas.
- lip lift.

ADVANCED

Should be able to perform

- endoscopic brow lift or foreheadplasty,
- SMAS lifting,
- deep plane facelifting,
- isolated midface or SOOF lift,
- platysmaplasty,
- rejuvenation by lipofilling/fat graft,
- lower lid blepharoplasty by external or transconjunctival approaches,
- repositioning or correction of position of the outer canthus or treatment of the lax lid for cosmetic indications,
- revision of failed procedures and suboptimal results,
- repeat facelifting of any design.

Module 3: Rhinoplasty and Otoplasty

Objective: Competence in the diagnosis, planning and management of all aspects of aesthetic nasal and aesthetic ear surgery.

Knowledge

BASIC

Should demonstrate knowledge of

Rhinoplasty

- anatomy of the nose including detailed description of the bone, cartilage, soft tissue structures, aesthetic units,
- blood supply of the nose including ophthalmic artery, facial artery and angular artery as well as nerve supply,
- physiological functions of the nose and how these may be affected by nasal surgery,
- facial aesthetics including the psychological implications of rhinoplasty surgery,
- dysmorphophobia and recognises clinical features of condition,
- local anaesthesia and the use of topical agents such as cocaine.

Otoplasty

- anatomy of the ear including embryology and growth (including nomenclature of different elements of the ear),
- blood supply of the ear including branches from external carotid artery, posterior auricular artery and superficial temporal artery,
- nerve supply of the ear including auriculotemporal nerve, great auricular nerve, branches of the vagus nerve and lesser occipital nerve.

INTERMEDIATE

Should demonstrate knowledge of

Rhinoplasty

- techniques to manage the nasal dorsum including dorsal hump reduction and dorsal augmentation,
- different osteotomy techniques including placement of osteotomies,
- techniques of endonasal and open approaches, including appropriate selection of surgical technique,
- management of the alar cartilages and septum including resection, dome suturing and cartilage grafting techniques,
- endonasal and open approaches to rhinoplasty,
- techniques for nasal tip adjustment including resection, suturing, control of projection.
- management of septal trauma

Otoplasty

- appropriate age-related considerations in respect of timing of otoplasty. cartilage maturation,
- non-surgical management including neonatal moulding techniques,
- anaesthesia including use of local anaesthesia and appropriate infiltration/blocks,
- classification of prominent ears and definitions of cup ear, lop ear and Stahl's deformity,
- surgical techniques for prominent ear correction including cartilage scoring e.g. Chongchet and suture-only techniques e.g. modified Mustardé,
- various dressing techniques with their relative merits,
- potential complications of prominent ear correction with risk factors for the same, including infection and necrosis of cartilage and skin.

ADVANCED

Should demonstrate knowledge of

Rhinoplasty

- complications of rhinoplasty surgery including functional complications,
- secondary rhinoplasty techniques with indications for same.

Otoplasty

- the reconstructive techniques available for treatment of significant necrosis or deformity following prominent ear correction.

Clinical Skills

BASIC

Should demonstrate ability to

Rhinoplasty

- arrange appropriate views for clinical photographic record,
- elicit focussed history in respect of the rhinoplasty patient,
- examine patient with reference to the nose including preoperative analysis of appearance and function,
- recognise the need for psychological assessment and identifies dysmorphophobia.

Otoplasty

- clinically assess the patient with reference to the external ear and demonstrates appropriate communication when dealing with the paediatric patients,
- arrange appropriate views for clinical photographic record,
- take consent for primary otoplasty modifying communication when dealing with paediatric patient,
- recognise the need for psychological assessment and identifies dysmorphophobia.

INTERMEDIATE

Should demonstrate ability to

Rhinoplasty

- clinically assess and analyse nasal defects including issues of balance and proportion.,
- make a surgical plan for primary rhinoplasty using skills of analysis and judgement
- counsel and consent patient for rhinoplasty surgery,
- recognise and counsel the unrealistic patient,
- explain to patient when rhinoplasty not in best interests of patient.

Otoplasty

- clinically assess and analyse ear deformities including issues of symmetry and proportion,
- make a surgical plan for primary otoplasty using skills of analysis and judgement,
- counsel and consent patient for otoplasty surgery,
- recognise and counsel the unrealistic patient,

- explain to patient when otoplasty not in best interests of patient.

ADVANCED

Should demonstrate ability to

Rhinoplasty

- examine the patient with reference to the nose including preoperative analysis of appearance and function,
- deal with disappointment and postoperative dissatisfaction.
- make a surgical plan for secondary using skills of analysis and judgement,
- counsel and consent patient needing secondary rhinoplasty surgery,
- recognise and counsel the unrealistic patient,
- explain to patient when rhinoplasty not in best interests of patient.

Otoplasty

- deal with postoperative complications,
- deal with disappointment and postoperative dissatisfaction,
- make a surgical plan for secondary otoplasty using skills of analysis and judgement
- counsel and consent patient for secondary otoplasty surgery
- recognise and counsel the unrealistic patient.

Technical Skills and Procedures

BASIC

Should be able to perform

Rhinoplasty

- application of internal and external nasal splints,
- drainage of septal haematoma
- harvesting cartilage graft from ear and costochondral junction,
- nasal packing for bleeding
- infiltrating nose with local anaesthetic and administer topical agents such as cocaine,
- osteotomies of nasal bones (various patterns).

Otoplasty

- infiltration of ears with local anaesthesia including greater auricular nerve blocks,
- application of prominent ear head dressing.

INTERMEDIATE

Should demonstrate ability to

Rhinoplasty

- closed approach to the septum with or without concomitant rhinoplasty
- submucous resection of spurs
- approach to the septum during open rhinoplasty
- enlargement of septal perforation to reduce symptoms
- cartilage graft harvest from nasal septum,

- adjustment of nasal dorsum including dorsal hump, reduction and dorsal augmentation.

Otoplasty

- primary otoplasty with cartilage-scoring techniques,
- primary otoplasty with suture-only techniques,
- management of complications including haemorrhage, infection and necrosis of skin and cartilage.

ADVANCED

Should be able to perform

Rhinoplasty

- harvesting calvarial bone graft,
- septoplasty surgery including scoring and SMR techniques,
- septoplasty with or without cartilage grafting
- management of complications including haemorrhage,
- secondary procedures to correct unsatisfactory results,
- closure of septal perforation
- reconstruction of septum for nasal support

Otoplasty

- secondary procedures to correct unsatisfactory results including ear reconstruction techniques (see Ear Reconstruction Module),
- techniques to correct other deformities such as cup ear, lop ear and Stahl's deformity.

Module 4: Rejuvenation/restoration of the trunk, body contouring, liposuction & fat grafting

Objective: Acquire competence in the assessment, planning correction and management of all aspects of body lifting and contouring

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of the skin and subcutis,
- patterns and organisation of the blood and nerve supply of the relevant regions of the skin,
- pattern of relaxed skin tension lines over the whole body,
- pathogenesis of thromboembolic disease, and the prophylaxis and management of these disorders,
- selection of appropriate prophylactic antibiotics.

INTERMEDIATE

Should demonstrate knowledge of

- principles of bariatric surgery,
- metabolic consequences of bariatric surgery,
- pathogenesis, effects and management of tissue necrosis,
- appropriate placement of incisions for best aesthetic outcome,
- complications of skin-tailoring surgery,
- principles of liposuction and know of the different devices and their relative risks and benefits,
- effects of postoperative changes in body weight and pregnancy in this group of patients,
- pathology and principles of fat grafting.

ADVANCED

Should demonstrate knowledge of

- psychological condition of dysmorphophobia,
- condition of monosymptomatic hyperchondriacal psychosis,
- psychosexual impacts of body image disorder,
- patterns of acquired skin excess,
- syndromic abnormalities of skin laxity,
- forms of lipodystrophy, its patterns and presentations,
- specific complications of the various techniques of liposuction,
- techniques, donor sites and morbidity of fat grafting,
- the developing research into trophic/non-volumetric effects of fat grafts.

Clinical Skills

BASIC

Should demonstrate ability to

- assess and deliver non-operative management of the acute surgical patient,
- take history to include features relevant to the assessment and management of body contour problems,
- examine the patient with reference to patterns of skin excess and laxity to include assessment and documentation of symptomatically displeasing body contours.

INTERMEDIATE

Should demonstrate ability to

- undertake clinical assessment for the perceived deformities covered in this module.
- translate presenting complaints into an appropriate plan for potential intervention,
- recognise the patient seeking treatment of obesity by body contouring.

ADVANCED

Should demonstrate ability to

- make a surgical plan for the individual patient in respect of conditions covered in this module using skills of analysis and judgement,

- assess the psychological suitability for body contouring surgery and appropriately refers for psychological advice as necessary,
- perform risk-benefit analysis of non-pathological based surgery,
- counsel and consent a patient for an episode of body contouring surgery,
- communicate the range of secondary effects of a given operation and suggest adjuvant procedures or alternative techniques,
- accurately assess local volume excess and translate that into a plan for liposuction,
- recognise lipodystrophies,
- recognise local fat deficiencies which will benefit from fat grafting,
- recognise and counsel the unrealistic patient,
- explain to patient when body contouring surgery not in best interests of patient,
- deal with disappointment and postoperative dissatisfaction.

Technical Skills and Procedures

BASIC

Should be able to undertake

- wound management and dressing care,
- management of the necrotic wound and its defect,
- range of wound closure techniques,
- application of closed suction drainage.

INTERMEDIATE

Should be able to perform

- various patterns of abdominoplasty.
- correction of lax abdominal musculature,
- regional liposuction,
- scar revision including management of the „dogear“,
- fat graft harvest and preparation of fat grafts,
- undertakes local lipofilling with fat graft.

ADVANCED

Should be able to perform:

- modified abdominoplasty in the presence of unfavourable abdominal scarring.
- brachioplasty.
- BELT/body lift,
- buttock lift,
- thigh lift,
- liposuction of the arms or distal to the mid thigh, major circumferential liposuction,
- complex combination procedures,
- major staged fat graft for general contour restoration,
- secondary contouring procedures to correct unsatisfactory results.

Module 5: Non-Surgical rejuvenation

Objective: Acquire competence in the management of the aesthetic patient using non-surgical enhancement techniques

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy and physiology of skin including classification of skin types,
- normal ageing changes of skin including changes related to sun exposure,
- range of products and non-surgical techniques available for non-surgical rejuvenation,
- the role of these techniques, the indications for use as sole techniques and as adjuncts to other surgical procedures.

INTERMEDIATE

Should demonstrate knowledge of

- specific patterns of ageing in different parts of the body with emphasis on face, neck and hands,
- biology of scarring, pigmentation changes, and their modulation,
- factors and conditions that may cause premature ageing including smoking and substance abuse,
- mechanism of action, effects and duration of action of the products and techniques used for non-surgical rejuvenation. Specifically, the range of preparations of botulinum toxin, dose schedules and how to achieve complete and partial temporary paralysis of selected muscle groups.
- the various filler injection preparations on the market and the literature regarding outcomes of the same (permanent, semi-permanent and temporary fillers).
- different types of lasers available for aesthetic enhancement, their potential applications, mechanism of action, treatment schedules and useage.

ADVANCED

Should demonstrate knowledge of

- racial differences in skin type and the differences in response by skin type to the interventions described in this module,
- complications of use of non-surgical techniques including use of hydroxyquinones, botulinum toxin overuse, scarring from chemical peel, laser,
- regulatory framework for supply of relevant products on named patient basis.
- the regulation of non-surgical rejuvenation including the legislation and safety requirements on the use of lasers.

Clinical Skills

BASIC

Should demonstrate ability to

- elicit relevant features in patient history including the specific concerns of the patient,
- identify and enumerate the features of facial ageing and examines the skin and underlying tissues to demonstrate those features.

INTERMEDIATE

Should demonstrate ability to

- identify evidence of previous treatments including active botulinum toxin, stigmata of laser resurfacing / dermabrasion / microdermabrasion,
- formulate management plan for the optimal enhancement of the facial aesthetic patient by non-surgical techniques,
- optimize the sequencing of the recommended treatments,
- undertake basic functional and psychological assessment of patient's needs,
- show ability to take clinical photographs and catalogue within the legislative framework of the Data Protection Act, and offer appropriate explanation to patient regarding the safeguarding and use of their images.

ADVANCED

Should demonstrate ability to

- record the patient's pretreatment status and progress using charts.
- formulates management plan for use of techniques in the patient who has previously undergone facial rejuvenation surgery including amelioration of the unsatisfactory result by non-surgical means.
- demonstrate planning and prescription of dermatological formulations in the form of skin care regimen for skin stimulation and skin lightening (tretinoin based / glycolic acid based).
- modify the original prescription of dermatological formulations based on patient response.

Technical Skills and Procedures

BASIC

Should be able to perform

- injection techniques to the facial area including simulation exercises,
- steroid injection for hypertrophic or keloidal scar,
- filler injections for facial rhytids or small depressed scars.

INTERMEDIATE

Should be able to administer

- botulinum toxin injections to glabella, forehead, periorbital, perioral and cervical areas for targeted muscle paralysis.

ADVANCED

Should be able to perform

- laser resurfacing treatment for skin resurfacing including fractionated CO₂, erbium, NdYAG (hair removal)
- chemical peel for facial rejuvenation using trichloroacetic acid / glycolic acid,
- micropigmentation techniques for aesthetic enhancement.
- microneedling for refinement of mature scar.

BURNS SURGERY

Modules:

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

Module 1: Classification, primary management and transfer

Objective: Acquire competence in the initial management of patients with burns in the emergency department and their transfer to an appropriate burns facility/unit/centre.

Knowledge

BASIC

Should be able to describe in detail the knowledge set contained in the courses:

ATLS

EMSB or ABLIS PALS/APLS

Should demonstrate knowledge of

- anatomy of the body surface, physiology, pathophysiology of burn injury,
- factors influencing burn healing,
- blood supply of skin,
- the timing and rationale for antibiotic use

- timing of initial surgery,
- appropriate pre-operative investigations,
- classification of burn injury,
- resuscitation options,
- importance of specialist centres, MDT and interdisciplinary communication, especially with anaesthetic and paediatric colleagues
- the role of other members of team including microbiologists, physiotherapy, occupational therapy,
- paediatric fluid regimes,
- features and management of toxic shock syndrome,
- an overview of non-accidental injury.

INTERMEDIATE

Should demonstrate knowledge of

- differing roles of burn facilities, units and centres.
- pathophysiology of burns and their classification,
- management of specific injuries e.g. inhalation, chemical and electrical burns,
- non-accidental injury,
- various transfer options available for the burn patient,

ADVANCED

Should demonstrate knowledge of

- management of the multiply-injured burn patient,
- controversies and issues arising as a result of a decision not to resuscitate,
- other protection issues,
- the impact of disfigurement, the consequences of an altered appearance, what it involves psychologically and socially, and the impact of an individual's body image on their life and that of their family.
- the process by which an individual can successfully adjust to disfigurement and explain how the multidisciplinary team can assist with that process.

Clinical Skills

BASIC

Should demonstrate ability to

- elicit burn-related history,
- assess and plan the non-operative management of burn injury,
- recognise life-threatening injuries,
- perform examination to including assessment of severity (extent and depth) of injury,
- assess vascular status of limb,
- assess the presence of compartment syndrome.

INTERMEDIATE

Should demonstrate ability to

- prepare a range of management options for the conditions covered in this module.
- work with other agencies in non-accidental injury.

ADVANCED

Should demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning relevant to the subjects specified in this module.

Technical Skills and Procedures

BASIC

Should be able to perform

- assessment of burn area and depth,
- adjunctive techniques for depth assessment,
- escharotomy and fasciotomy,
- application and change of burn dressings.

INTERMEDIATE

Demonstrate ability to use epidermal substitutes.

ADVANCED

Should be able to perform

- airway management including performing tracheostomy,
- stabilising associated injuries and bleeding.

Module 2: Resuscitation and critical care

Objective: Acquire competence in the initial resuscitation of a burn patient and ongoing critical care.

Knowledge

BASIC

Should demonstrate knowledge of

- options for airway management,
- pathophysiology of burn shock,
- resuscitation regimes,

- wound dressings,
- pathophysiology of inhalation injury.

INTERMEDIATE

Should demonstrate knowledge of

- principles of early burn debridement,
- principles and management of burns and the relevance to subsequent soft tissue reconstruction,
- relevance of pharmacological interventions including antibiotics and inotropes,
- management of inhalation injury including bronchoscopy,
- metabolic response to the burn injury,
- palliative care in respect of the burn patient.
- PHDU practices.

ADVANCED

Should demonstrate knowledge of

- microbiology of burns,
- principles of ventilation,
- nutritional support,
- PICU practices.

Clinical Skills

BASIC

Should demonstrate ability to

- assess burn injury,
- manage large burn wounds,
- apply temporary dressings e.g. negative pressure.

INTERMEDIATE

Should demonstrate ability to

- manage more complex burns,
- resuscitate burns with TBSA <40%,
- explain the problems associated with the extremes of age and of polytrauma,
- prescribe appropriate antibiotics (antibiotic stewardship),
- undertake nutritional management of burns patients,
- provide detailed advice on the treatment pathway within the context of the relevant MDT.

ADVANCED

Should demonstrate ability to

- recognise injuries that would benefit from primary amputation,
- manage the metabolic response,
- resuscitate burns with TBSA >40%.

Technical Skills and Procedures

BASIC

Should be able to perform

- endotracheal intubation,
- appropriate pre-washing and prepping burn during dressing change,
- escharotomy and fasciotomy,
- application of a range of burns dressings e.g. Biobrane, Flamazine.

INTERMEDIATE

Should be able to perform

- elective tracheostomy,
- adequate debridement of injured soft tissues to achieve a stable wound approaching elective conditions (including fascial excision),
- planning of future soft tissue reconstruction.

ADVANCED

Should be able to perform

- endotracheal intubation,
- bronchoscopy,
- basic ventilator management,
- amputation of non-salvageable limbs.

Module 3: Early surgery

Objective: Acquires competence in the planning and execution of appropriate early surgery in burns.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of skin,
- classification of burn injury by zones,
- benefits and disadvantages of both early excision and conservative management.

INTERMEDIATE

Should demonstrate knowledge of

- options available for early surgery,
- requirements of special sites,
- principles of management of more complex injuries, including polytrauma,
- planning and prioritising treatment within an MDT setting.

ADVANCED

Should demonstrate knowledge of

- management of more complex injuries, and polytrauma,
- surgical management of the burn,
- principles and use of dermal and epidermal substitutes,
- principles of cell culture.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assesses burn injuries and demonstrates recognition of injury patterns.
- use simple management techniques including use of appropriate dressings,
- prescribe appropriate antibiotics,
- plan burn excision and grafting,
- use of epidermal substitutes such as Biobrane.

INTERMEDIATE

Should demonstrate ability to

- formulate management algorithms for the common patterns of burn injury,
- plan total and staged burn excision and grafting,
- apply psychological assessment tools for evaluation of psychological needs (patient questionnaires).

ADVANCED

Should demonstrate ability to

- formulate management algorithms for complex burn injuries,
- arrange patient-centred care with patient as partner in the process, providing realistic information and guiding patient decision-making regarding choices available and timing of those treatments,
- manage and lead the multi-disciplinary teams in respect of provision of psycho-social care
- be able to arrange the care pathway that supports an individual to successfully adjust to

disfigurement through giving the individual and family specific life-skills. These include the patient being provided with information about their condition and its treatment, developing a positive outlook/belief system, learning to cope with their feelings, exchanging experiences with others who've "been there" and social skills training to manage other people's reactions.

Technical Skills and Procedures

BASIC

Should be able to perform

- dressings care,
- skin grafts of small to moderate areas.

INTERMEDIATE

Should be able to perform

- skin grafts of large areas,
- plan and raise flaps where grafts are not appropriate,
- early excision of paediatric burns to prevent systemic upset.

ADVANCED

Should be able to perform

- resurfacing procedures using temporary skin cover,
- resurfacing using skin substitutes,
- limb amputations.

Module 4: Late surgery

Objective: Acquire competence in later burn management including the planning and execution of reconstructive surgery.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of skin and soft tissues,
- pathophysiology of hypertrophic scars and keloids,
- principles of scar management,
- effect of growth on burn scars,
- use of grafts and local flaps.

INTERMEDIATE

Should demonstrate knowledge of

- indications for use of skin substitutes, distant flaps and free flaps,
- stages of bereavement associated with loss of body image and the clinical and psychological supports that can be put in place to assist the patient cope with that loss.

ADVANCED

Should demonstrate knowledge of

- principles of management of more complex injuries,
- surgical options for late reconstruction,
- novel therapies.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess burn scars and contractures demonstrating recognition of injury patterns,
- use simple management techniques including use of splints and pressure garments,
- plan release of burn scars using grafting and local flaps.

INTERMEDIATE

Should demonstrate ability to

- formulate management algorithms for the common patterns of burn scarring,
- plan for the use of skin substitutes, distant flaps and free flaps.

ADVANCED

Should demonstrate ability to

- describe detailed management algorithms for complex burn injuries,
- show understanding of the complexities of burn injury reconstruction in patients with polytrauma and significant co- morbidities.

Technical Skills and Procedures

BASIC

Should be able to perform burn scar grafting and local flaps including the Z-plasty and its variations.

INTERMEDIATE

Should be able to use skin substitutes and distant flaps of small and medium areas.

ADVANCED

Should be able to perform

- resurfacing with skin substitutes, distant flaps and free flaps of medium and large areas.
- late major amputations.

Module 5: Infection and other complications

Objective: Acquire competence in the diagnosis and management of burn infections and other complications

Knowledge

BASIC

Should demonstrate knowledge of the microbiology of burns.

INTERMEDIATE

Should demonstrate knowledge of

- metabolic derangement occurring in the burn patient,
- concept and practice of antibiotic stewardship.

ADVANCED

Should demonstrate knowledge of

- antibiotic and antiseptic regimens and their rationale,
- controversies regarding metabolic management,
- multi-organ effects and systemic disturbance caused by burns.

Clinical Skills

BASIC

Should demonstrate ability to undertake wound assessment.

INTERMEDIATE

Should demonstrate ability for the clinical assessment and management algorithms for the infections and other burn complications.

ADVANCED

Should demonstrate ability to

- clinically assess the unstable complex burn patient
- make decisions on appropriate management issues.
- interpret the range of investigations in the unstable complex burn patient to formulate management plans.
- manage the iatrogenic injury.

Technical Skills and Procedures

BASIC

Should be able to undertake surgical management of wound infection.

INTERMEDIATE

Should be able to perform radical excision of burn wound for infection.

ADVANCED

Should be able to perform amputation and other life-saving surgery in the case of infection and other complications.

Module 6: Paediatric burns

Objective: Acquire competence in the diagnosis and management of paediatric burns and the recognition of the need for multidisciplinary management.

Knowledge

BASIC

The knowledge requirements are as per modules 1-5, in the context of the paediatric patient.

Should demonstrate knowledge

- as defined by PALS/APLS,
- paediatric fluid regimens,
- toxic shock syndrome,
- non-accidental injury.

INTERMEDIATE.

As per modules 1-5, in the context of the paediatric patient.

Demonstrates knowledge of PHDU practices.

ADVANCED

As per modules 1-5, in the context of the paediatric patient.

Should demonstrate knowledge

- other child protection issues.
- PICU practices

Clinical Skills

BASIC

As per modules 1-5, in the context of the paediatric patient.

Works with other agencies in the event of non-accidental injury.

INTERMEDIATE

As per modules 1-5, in the context of the paediatric patient. Works with the paediatric elements of the MDT.

Applies the law in respect of non-accidental injury and communicates with appropriate parties.

ADVANCED

As per modules 1-5, in the context of the paediatric patient.

Technical Skills and Procedures

BASIC

As per modules 1-5, in the context of the paediatric patient.

Should be able to apply Biobrane and similar dressings.

INTERMEDIATE

As per modules 1-5, in the context of the paediatric patient.

Should be able to perform early excision of burns to prevent systemic upset.

ADVANCED

As per modules 1-5, in the context of the paediatric patient.

CLEFT SURGERY

Modules:

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

Module 1: Primary management of cleft lip and nose

Objective: Acquire competence in the management of the unrepaired cleft lip and nose deformity.

Knowledge

BASIC

Should be able to demonstrate knowledge of:

- surgical anatomy, pathological anatomy, embryology and basic genetics of facial clefting and associated anomalies.
- past and current and protocols for repair of cleft lip and palate.
- content of the Paediatric Intermediate Life Support Course or equivalent course as currently approved by the Resuscitation council of the UK, and ability to resuscitate a child.
- criteria that would constitute grounds for admission to Intensive Care Unit.
- issues of non-accidental injury and child protection. Know the referral pathways for protection of the 'at-risk' child.

INTERMEDIATE

Should demonstrate knowledge of

- the different techniques for cleft lip and nose repair.
- timelines and sequence of operative procedures.

ADVANCED

Should demonstrate knowledge of

- history of cleft lip and nose repair, and the outcomes as well as the means of measurement of outcomes for cleft lip and nose repair,
- characteristic anatomical elements of the neonatal airway, and basis for tracheostomy in emergency circumstances where airway cannot be maintained mechanically,
- alternatives for timing of different sequences and operations for repair of the cleft lip and

nose.

Clinical Skills

BASIC

Should demonstrate ability to

- take care of the pre and post-operative patient/child undergoing cleft surgery including assessment for anaesthetic risk factors, postoperative fluid management, antibiotic prescribing,
- manage a naso-pharyngeal airway both in the peri-operative environment, and post-operatively,
- take informed consent for the procedures covered in this module,
- use the operating microscope,
- present cases within the Cleft MDT.

INTERMEDIATE

Should demonstrate ability to:

- counsel parents of new patients including those following ante-natal scan diagnosis,
- plan appropriate treatment schedule within the context of the cleft MDT.

ADVANCED

Should demonstrate ability to:

- formulate a management plan within the MDT as a fully integrated member of the team,
- communicate with patients/families,
- maintain and demonstrate the skills articulated in APLS/PALS,
- recognise signs of non-accidental injury, risk factors, and family pathology.

Technical Skills and Procedures

BASIC

Should be able to mark up a cleft lip repair according to one of the currently accepted techniques.

INTERMEDIATE

Should be able to perform (in order) Muscle dissection, periosteal elevation, elevation of vomerine flap, suture of vomerine flap,

ADVANCED

Should be able to repair the cleft lip and nose according to one of the currently accepted techniques, vary a standard marking plan for subtle differences in the types of cleft lip or

palate, perform (in order) nasal dissection, repair of mucosa and muscle, repair of ala base, placement of sutures for nasal suspension, lip closure, use of lengthening flaps, vermilion flap and mucosal balancing.

Module 2: Secondary repair of cleft lip and nose

Objective: Acquire competence in the management of the previously repaired cleft lip and nose deformity.

Knowledge

BASIC

Should be able to demonstrate knowledge of

- surgical anatomy, pathological anatomy and physiology of the cleft nose,
- rhinoplasty techniques for reconstruction of cleft nasal deformity.

INTERMEDIATE

Should demonstrate knowledge of:

- facial morphology and aesthetics,
- basic cephalometric planning techniques and

ADVANCED

Should be able to demonstrate:

- detailed knowledge of soft tissue flap and composite graft techniques for contour and scar modification.
- understanding of muscle dissection methods and transposition to correct functional and aesthetic abnormalities,
- knowledge of cleft nasal defect to include familiarity with current literature on the same, and
- detailed knowledge of elements of aesthetic rhinoplasty where applicable to cleft rhinoplasty.

Clinical Skills

BASIC

Should demonstrate ability to correctly elicit patients' concerns and their perceptions of the conditions.

INTERMEDIATE

Should demonstrate ability to

- perform assessment of lip and nose disability including alveolar fistula.
- determine the optimum timing of surgery and decide on priorities for treatment,
- communicate with the MDT,
- know when to recruit help of a clinical psychologist.

ADVANCED

Should be able to demonstrate skill in formulating plan for surgical correction of secondary deformities of the cleft lip and nose within the context of the integrated (MDT) care of the patient.

Technical Skills and Procedures

BASIC

Should be able perform

- formulation of a design for correction of secondary deformities of the lip and nose,
- skin markings
- dissection of the lip,
- closure of rhinoplasty incisions,
- management of the cleft airway.

INTERMEDIATE

Should be able to perform

- formulation of designs for correction of secondary deformities of the lip and nose
- dissection and suture of lip, degloving of nose, and ala reduction.

ADVANCED

Should be able to perform

- design and execute complete revision of complex cleft deformity, including total lip revision and more subtle deformities in later years
- (in order) the previous elements specified and proceeding to hump reduction with rasp, management of the septum, infracture, application of splint,
- full cleft rhinoplasty.

Module 3: Primary repair of cleft palate

Objective: Competence in the assessment, surgical management and aftercare of primary cleft palate.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy, embryology and basic genetic of facial clefting and associated anomalies (as for Module 1).
- knowledge of sequencing of procedures for cleft palate repair.

INTERMEDIATE

Should demonstrate knowledge of

- anatomical basis for surgical correction of palatal abnormalities

ADVANCED

Should be able to explain

- detailed mechanisms of speech production, along with implications of various genetic conditions on speech (including Stickler's, 22q11 deletion, and other common disorders,
- surgical procedures for correction cleft palate with historic and common internationally-performed variations.

Clinical Skills

BASIC

Should demonstrate ability to

- take informed consent for the procedures specified in this module,
- care skilfully for the pre and post-operative cleft palate patient/child,
- use the operating microscope,
- manage a naso-pharyngeal airway.

INTERMEDIATE

Should be able to demonstrate proficiency in managing the child undergoing cleft palate repair of average complexity.

ADVANCED

Should be able to demonstrate proficiency to manage a child undergoing complex cleft palate repair including cases with associated disorders (syndromic cases), and cases with wide defects which generate significant postoperative potential airway and wound healing problems.

Technical Skills and Procedures

BASIC

Should be able to perform

- marking up a cleft palate repair,
- (in order) closure of oral layer, elevation of the oral layer in patients with isolated cleft palate.

INTERMEDIATE

Should be able to perform

- (in order) elevation of the oral layer in patients with unilateral and bilateral cleft lip and palate, closure of the nasal layer.

ADVANCED

Should be able to perform

- repair of the palate and associated involved structures according to one of the currently accepted techniques (complete within timely manner),
- muscle dissection, and demonstrate the vascular pedicle in repeated fashion
- adaptations of the standard procedure for anatomical variation.

Module 4: Secondary speech surgery

Objective: To develop competence in the management of speech disorders associated with cleft palate and related disorders

Knowledge

BASIC

Should be able to demonstrate knowledge of

- the surgical anatomy, pathological anatomy and physiology of palatal function and abnormalities after cleft closure, including the pathophysiology of velopharyngeal incompetence (VPI).
- the feeding mechanisms and relationship of infant feeding patterns to later speech development,
- the physiology of the middle ear, Eustachian tube and causes of deafness in the cleft patient,
- the clinical and investigative tools for examining speech development,
- the place of surgical and orthodontic assistance to treatment of speech disorder

INTERMEDIATE

Should be able to describe:

- the range of normal speech development mechanisms and how these are at risk in cleft disorders,
- the impact of chronic otitis media on speech skills at school entry
- the techniques used by speech and language therapists inputting into cleft management, and
- the operations available for the amelioration of speech disorders including VPI.

ADVANCED

Should be able to describe:

- the indications for investigation of speech disorder, methods and limitations,
- the radiation protection protocols linked to such investigations, and
- adult communication problems related to previous cleft palate repair and previous surgery for VPI.

Clinical Skills

BASIC

Should have ability to

- elicit speech disorders
- liaise with Speech Therapists.

INTERMEDIATE

Should have ability to

- interpret findings of nasendoscopy,
- assess likelihood of patient co-operation with nasendoscopy,
- formulate a treatment plan based on the nasendoscopy findings

ADVANCED

Should demonstrate ability to:

- interpret an audiogram and tympanometry study,
- describe the principles of brain stem evoked response audiometry,
- and formulate an appropriate referral based on clinical history and audiogram.

Technical Skills and Procedures

BASIC

Not applicable.

INTERMEDIATE

Should be able to perform:

- nasendoscopy in the diagnosis of speech disorder.

ADVANCED

Should be able to perform:

- skilful dissection of a previously repaired cleft palate as part of a correction for speech disorder
- pharyngoplasty (various techniques).

Module 5: Dento-alveolar defect including alveolar bone grafting

Objective: To develop competence in the management of alveolar defects associated with cleft lip and palate.

Knowledge

BASIC:

Should be able to demonstrate knowledge of:

- the evolution of secondary dentition,
- the clinical and investigative tools available to the orthodontist,
- the related investigations and the basis for treatment of the secondary dentition,
- the anatomy of various potential sites for cancellous bone graft harvesting

INTERMEDIATE

Should be able to describe:

- options and patient preferences for orthodontic treatment.
- indications for pre-surgical orthodontic treatment,
- the role of Paediatric Dentists including the basics of oral and dental hygiene,
- the use of synthetic substitutes in dento-alveolar surgical practice, and
- the methods of assessment of success of bone grafting, with scoring techniques and relevant background in reasonable outcomes.

ADVANCED:

Should be able to describe:

- overview of surgical aspects of stomatological practice
- principles of restorative dentistry, and role of such care within the holistic management of patients.

Clinical Skills

BASIC

Should be able to make clinical assessment of the secondary dentition. Should demonstrate ability to function and communicate within the framework of the Cleft MDT.

INTERMEDIATE

Should be able to:

- liaise appropriately with Orthodontic colleagues, and
- liaise with and refer to Paediatric and Restorative Dental colleagues.

ADVANCED

Should be able to devise complete management plan for the preoperative and postoperative care of the patient undergoing alveolar bone grafting.

Technical Skills and Procedures

BASIC

Should be able to perform low scar access with harvest of iliac bone graft.

INTERMEDIATE

Should be able to perform bone grafting of the alveolus.

ADVANCED

Should be able to perform closure of an alveolar fistula with appropriate technique.

Module 6: Orthognathic surgery / Working with the Cleft MDT

Objective: To acquire knowledge of the management of residual cleft deformity in adults including principles of orthognathics and related assessment / investigation
To develop skills in participation in the Cleft MDT, including working with allied

disciplines as a team member and team leader.

Knowledge

BASIC

Should demonstrate knowledge of:

- the range of residual deformities that pertain at the cessation of facial growth,
- the nasal septal deformities associated with clefting,
- the self-image problems extending into adult life,
- guidelines for the diagnosis, treatment and follow up of cleft patients.

INTERMEDIATE

Should demonstrate understanding of

- the role of the orthodontist in cleft care,
- the surgical principles of orthognathic appliances and their use in practice, and
- NICE Improving Outcomes guidance and Peer review.

ADVANCED

Should demonstrate knowledge of

- the surgical anatomy and pathological anatomy of the residual deformities of facial growth,
- the principal methods of use in orthognathics including distraction osteogenesis,
- methodology for research and audit with respect to cleft practice in local, national and international settings.
- impact of disfigurement and altered appearance, what it involves psychologically and socially, and the impact of an individual's body image on their life and that of their family,
- the processes by which an individual can successfully adjust to disfigurement and explain how the multidisciplinary team can assist with that process.

Clinical Skills

BASIC

Should demonstrate ability to

- assemble appropriate professionals to solve adults, concerns,
- communicate and refer within the specialist MDT.

INTERMEDIATE

Should demonstrate ability to

- undertake orthodontic measurement of mid-facial growth,
- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues, and
- analyse and develop diagnostic and surgical planning within the context of an MDT, and
- lead clinical discussion of cleft-related disorders for neonate, infant, pre-school, and later ages following consultations

ADVANCED

Should demonstrate ability to

- undertake appropriate referral and liaison with Orthodontists,
- to plan a program of orthognathic surgery including distraction osteogenesis,
- to discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent, and
- to lead whole clinic process for an entire MDT session

Technical Skills and Procedures

BASIC

Not applicable

INTERMEDIATE

Not applicable

COMPLEX WOUND

Module:

Complex wound

Objective: Overall competence in the diagnosis and management of the complex wound excluding burn injury

Knowledge

BASIC

Should be able to describe:

- the principles of management of non-burn conditions managed by the burn team (including cold injuries, TENS and purpura fulminans).

INTERMEDIATE

Should demonstrate knowledge of detailed management of non-burn conditions managed

by the burn team (including cold injuries, TENS and purpura fulminans).

ADVANCED

Should be able to discuss the controversies regarding the management of non-burn conditions managed by the burn team.

Clinical Skills

BASIC

Should demonstrate proficiency in

- clinical assessment of the non-burn injury,
- liaison with other specialities
- working and communicating within the relevant multidisciplinary team (MDT).

INTERMEDIATE

Should be able to

- devise management plans and treatment algorithms for the conditions covered in this module,
- apply psychological assessment tools for evaluation of psychological needs (patient questionnaires).

ADVANCED

Should be able to

- deploy skills of analysis and diagnostic synthesis, judgement, and surgical planning to the complex wound patient
- advise regarding timing of reconstruction and effect of growth on reconstructive surgery in paediatric cases,
- provide detailed advice on the treatment pathway, including interpretation of special investigations, within the context of the relevant MDT,
- demonstrate skills needed to arrange patient-centered care with patient as partner in the process, providing realistic information and guiding patient decision-making regarding choices available and timing of those treatments.
- 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.

Technical Skills and Procedures

BASIC

Should be able to

- stabilise the complex wound patient for safe transfer to specialist centre.
- apply negative pressure dressing.

INTERMEDIATE

Should be able to perform primary debridement and application of temporary wound dressings in theatre.

ADVANCED

Should be able to perform appropriate reconstruction of soft tissue defect using the range of available reconstructive techniques.

CRANIOFACIAL SURGERY

Modules:

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

Module 1: General Principles

Objective: Principles of the MDT and the 'Craniofacial Assessment' e.g. Psychology of facial difference and speech and language assessment

Anatomy & Embryology of the craniofacial complex

Cephalometrics and facial analysis

Orthognathic surgery relating to craniofacial syndromes

Craniofacial radiology

Trauma

Emergency procedures

Surgical approaches to the craniofacial complex

Craniofacial aesthetic surgery

Knowledge

BASIC

Should demonstrate knowledge of:

- embryology of the pharyngeal arch development and syndromes arising from developmental pathology, and should be to demonstrate proficiency in the descriptive anatomy of head and neck
- multidisciplinary assessment of 'The Craniofacial Patient' (parameters including visual, audiological, airway, speech, feeding, psychological and neurological),
- content of the Paediatric Intermediate Life Support Course or equivalent course .
Know how to resuscitate a child,
- criteria that would constitute grounds for admission to Intensive Care Unit,
- issues of non-accidental injury and child protection, and the referral pathways for protection of the 'at-risk' child.

Should be able to describe the management of extravasation injuries

INTERMEDIATE

Should be able to demonstrate knowledge of:

- cephalometrics: skeletal and dental occlusal relationships, SNA angle, SNB angle, facial reference points
- cephalometric characteristics of craniofacial syndromes e.g. Crouzon syndrome, Treacher Collins syndrome (TCS) and hemifacial microsomia (HFM), definition of anterior open bite, cross bites etc.
- distraction osteogenesis: history and application: mandible, alveolus, midface, orbit and cranium.

ADVANCED

Should be able to demonstrate knowledge of:

- anatomy of surgical approaches to craniofacial skeleton and relevant local flaps (temporalis, superficial temporal etc),
- facial analysis: choice of camera systems, CT, MRI and software analysis in surgical planning,
- Craniofacial Radiology – recognition of tumour and threats to neurological function,
- the multidisciplinary assessment of „The Craniofacial Patient“: specific tests – VEPs, sleep studies and psychological assessment scales,
- impact of disfigurement, the consequences of an altered appearance, what it involves psychologically and socially, and the impact of an individual’s body image on their life and that of their family,
- the processes by which an individual can successfully adjust to disfigurement, and how the multidisciplinary team can assist with that process.

Clinical Skills

BASIC

Should demonstrate ability to

- care for the pre and post-operative patient/child undergoing craniofacial surgery including assessment for anaesthetic risk factors, postoperative fluid management, antibiotic prescribing,
- manage the airway both in the peri-operative environment, and post-operatively.
- take informed consent for the procedures covered in this module,
- present cases within the Craniofacial MDT

INTERMEDIATE

Should demonstrate ability to

- counsel parents of new patients including those following antenatal scan diagnosis for relevant syndromes.
- apply psychological assessment tools for evaluation of psychological needs (patient questionnaires),

- plan appropriate treatment schedule within the context of the craniofacial MDT

ADVANCED

Should demonstrate ability to:

- formulate a management plan within the MDT as a fully integrated member/leader of the team and be able to communicate with patients/families,
- manage and lead the multi-disciplinary teams in respect of provision of psycho-social care,
- arrange the care pathway that supports a child and his/her family to successfully adjust to disfigurement through giving the individual and family specific life-skills. These include, where appropriate, the patient being provided with information about their condition and its treatment, developing a positive outlook/belief system, learning to cope with their feelings, exchanging experiences with others who've "been there" and social skills training to manage other people's reactions,
- maintain and demonstrate the skills articulated in APLS/PALS, and
- recognise signs of non-accidental injury, risk factors, family pathology.

Technical Skills and Procedures

BASIC

Trauma:

Should be able perform tracheostomy (emergency and percutaneous) and nasal packing for epistaxis

INTERMEDIATE

Should be able to perform

- intermaxillary fixation
- emergency management of retrobulbar haemorrhage
- emergency management of elevated ICP and/or intracranial haemorrhage,
- various surgical approaches to the craniofacial skeleton: coronal and upper and lower buccal sulcus incisions.

ADVANCED

Should be able to perform

- Orthognathic surgery relating to craniofacial syndromes.
How to perform a Le Fort I +/- distraction osteogenesis, the sagittal split osteotomy, bimaxillary surgery, segmental orthognathic surgery, palatal expansion and segmental alveolar transport.
- Distraction osteogenesis of the craniofacial skeleton. Indications compared to traditional techniques.
Device selection and application of chosen distraction device at all levels of the

craniofacial skeleton. Knowledge of outcome studies.

- Implants and prostheses:
Choice of alloplast for inlays and onlays. Osseointegrated implant choice, sites and design in conjunction with maxillofacial prosthodontist.
- Surgical approaches to the craniofacial skeleton: McCord lid swing, transconjunctival, transbleph, transcaruncular, Weber-Ferguson and open rhinoplasty, transbuccal. Levels of Craniofacial access.
- Craniofacial aesthetic surgery:
Endoscopic techniques, subperiosteal surgery, genioplasty, advanced rhinoplasty.

Module 2: Craniosynostosis

Objective: Management of single suture and syndromic craniosynostosis

Knowledge

BASIC

Should demonstrate knowledge of

- surgical anatomy, pathological anatomy and pathophysiology of craniosynostosis,
- common phenotypes and head shapes, and
- positional vs synostotic plagiocephaly: torticollis.

INTERMEDIATE

Should demonstrate knowledge of

- basic clinical genetics of craniosynostosis syndromes,
- recognition of different syndromic craniosynostoses (Apert, Crouzon, Pfeiffer, Saethre-Chotzen, Carpenter, Muenke etc),
- strategies for the management of intracranial hypertension and its multifactorial influences.

ADVANCED

Should demonstrate detailed knowledge of:

- protocols of surgical management (Multidisciplinary: ENT, Ophthalmology, Neurosurgery etc),
- indications for intervention: crisis, urgent, elective, aesthetic – both functional and psychological,
- indications and applications of distraction osteogenesis,
- indications for FOR/Le Fort III, Monobloc and bipartition osteotomies, distraction vs bone graft techniques.

Clinical Skills

BASIC

Should be able to

- explain to parents the challenges of these conditions at different stages of life from birth to adolescence,
- describe the impact on the family of the birth of a child with a craniofacial anomaly and provide or arrange support.

INTERMEDIATE

Should have ability to

- manage globe subluxation,
- manage the compromised airway,
- recognise elevated ICP,
- recognise complications of transcranial surgery,
- apply psychological assessment tools for evaluation of psychological needs (patient questionnaires).

ADVANCED

Should demonstrate ability to

- formulate plan for surgical correction of problems arising in patients with craniosynostosis
- deploy the skills of the MDT appropriately.

Technical Skills and Procedures

BASIC

Should be able to close a coronal incision

INTERMEDIATE

Should be able to perform

- harvesting techniques for autologous grafts including iliac crest bone, rib, costochondral and cranial bone.
- canthopexies, canthoplasties and eyelid balance
- coronal flaps

ADVANCED

Should be able to perform

- major segmental osteotomies and advancements of the craniofacial complex,

- distraction osteogenesis,
- cranioplasties,
- fronto-orbital surgery,
- frontofacial surgery

Module 3: Craniofacial tumours in adults and children

Objective: Acquire competence in the management of adults with transcranial tumours (orbital, nasal, frontofacial, skull base) including SCC, BCC, melanoma and olfactory neuroblastoma.

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

Knowledge

BASIC

Should be able to describe common adult tumours eg BCC, SCC, melanoma, and their pathology, natural history and treatment protocols

INTERMEDIATE

Should demonstrate knowledge of

- other adult tumours – eg NF, neuroblastoma with their pathology, natural history and treatment protocols,
- common paediatric tumours eg NF, fibrous dysplasia, teratomas and their pathology, natural history and treatment protocols,
- differences in clinical behaviours between adult and paediatric tumours.
- adjunctive techniques eg interventional radiology and IMRT and chemo-irradiation,
- role of palliation in adults and children
- management of end of life,
- complex craniofacial vascular anomalies and malformations, and
- role of the surgeon in the MDT

ADVANCED

Should demonstrate knowledge of

- applied surgical anatomy, segmental resection and reconstruction (alloplastic, autologous, microsurgical), functional preservation, aesthetic techniques,
- rare transcranial tumours and related contemporary literature,
- management of the facial nerve in adult and paediatric tumours with indications for facial nerve sacrifice and rehabilitation

Clinical Skills

BASIC

Should be able to present cases to the MDT

INTERMEDIATE

Should demonstrate ability to diagnose, investigate the conditions covered in this module.
Should demonstrate ability to counsel patients and deliver bad news concerning adult and paediatric patients.

ADVANCED

Should demonstrate ability to

- formulate treatment plans for the conditions covered in this module
- lead decision making in the MDT,
- co-ordinate the patient treatment pathway.

Technical Skills and Procedures

BASIC

Should be able to perform reconstructive techniques including grafts and local flaps

INTERMEDIATE

Should be able to perform

- elevation of 'workhorse' free flaps including latissimus dorsi and radial forearm flap
- manage Le Fort I down-fracture for skull base access

ADVANCED

Should be able to perform

- accessing craniofacial skeleton via various approaches (see module 1),
- planning and resecting of craniofacial vascular lesions,
- various approaches to the orbit (tumours)
- reconstruction with free perforator flaps or composite free tissue transfer,
- operating within a multidisciplinary team,

Module 4: Craniofacial syndromes of tissue deficiency

Objective: Acquire competence in the management of hemifacial microsomia, Treacher Collins syndrome, mandibular deficiencies - Pierre Robin, Romberg's disease, morphoea, craniofacial clefts & encephalocoels, Binder's syndrome, holoprosencephaly, arrhinia

Knowledge

BASIC

Should demonstrate knowledge of (with their aetiology, developmental pathology & embryology, natural history)

- hemifacial microsomia (HFM),
- Treacher Collins syndrome (TCS),
- Romberg's disease.
- Morphoea,
- Tessier's classification of craniofacial clefts. And
- classification of encephalocoeles

INTERMEDIATE

Should demonstrate knowledge of

- principles of intervention (crisis, urgent, elective and aesthetic),
- treatment protocols for mandibular deficiencies - Pierre Robin
- impact of the tissue deficiency syndromes on the child and the family at different stages of maturity.
- use of the MDT in the „craniofacial assessment“,

ADVANCED

Should demonstrate knowledge of

- other tissue deficiency syndromes eg Craniofacial clefts & encephalocoeles,
- Binder's syndrome,
- holoprosencephaly,
- arrhinia

Clinical Skills

BASIC

Not applicable

INTERMEDIATE

Should have ability to

- manage the compromised airway
- undertake 'defensive' surgical treatment planning (allowing for effect of growth on surgical results in children).

ADVANCED

Should have ability to formulate treatment plans for secondary procedures for the

conditions covered in this module.

Technical Skills and Procedures

BASIC

Should be able to perform excision of accessory auricles

INTERMEDIATE

Should be able to perform

- tissue expansion in the head and neck,
- tarsorrhaphy techniques,
- fat transfer,
- Le Fort I or Le Fort II advancements of maxilla

ADVANCED

Should be able to perform

- eyelid rebalancing and reconstruction,
- mandibular distraction and reconstruction
- ear reconstruction – autologous and osseointegrated implant
- nasal reconstruction and rhinoplasty
- orbital translocation
- soft tissue free flaps eg adipofascial flaps

Module 5: Craniofacial overgrowth syndromes

Objective: Acquire competence in the management of hemifacial hypertrophy, facial infiltrating lipomatosis, tissue overgrowth secondary to vascular malformations, Beckwith Wiedemann Syndrome, proboscis

Knowledge

BASIC

Should demonstrate knowledge of hamartomas, teratomas, and dysplasias

INTERMEDIATE

Should demonstrate knowledge of

- differential diagnosis of overgrowth asymmetries
- radiological diagnosis

ADVANCED

Should demonstrate knowledge of

- techniques for facial nerve preservation
- indications for surgery within the MDT setting
- the planes of facial resuspension.

Clinical Skills

BASIC

Should demonstrate ability to manage patients with reference to

- maintenance of vital functions including airway, feeding etc
- preservation of oral, nasal, palpebral sphincters

INTERMEDIATE

Should demonstrate ability to undertake a clinical assessment of the craniofacial conditions covered in this module.

ADVANCED

Should demonstrate ability to formulate a treatment plan for the conditions covered in this module.

Technical Skills and Procedures

BASIC

Not applicable

INTERMEDIATE

Should be able to perform emergency procedures (see module 1)

ADVANCED

Should be able to perform

- resectional surgery in the absence of malignancy including segmental osteotomies of maxilla and mandible, functional wedge resection of tongue, tarsorrhaphy, eyelid rebalancing with preservation of balanced facial function and aesthetics
- tissue reduction with preservation of neuromuscular function

Module 6: Orbital surgery

Objective: Acquire competence in the management of hypertelorism, microphthalmos, frontonasal dysplasia, craniofrontonasal dysplasia, orbital malpositions and dystopias, vertical orbital dystopia, late plagiocephaly and hemifacial microsomia.

Knowledge

BASIC

Should demonstrate knowledge of

- applied anatomy of the orbit and contents
- examination of the eye and basic vision
- eyelid anatomy and eyelid malposition
- growth of the orbit
- definition of terms eg hypertelorism, dystopia, telecanthus
- differential diagnosis/genetics of hypertelorism syndromes
- MDT assessment of hypertelorism syndromes

INTERMEDIATE

Should demonstrate knowledge of

- visual physiology, squint & principles of strabismus surgery
- medial and lateral canthal fixation methods
- orbital Prostheses – types, indications
- superior orbital fissure syndrome
- orbital apex syndrome
- relative afferent papillary defect
- retrobulbar haemorrhage
- reasons and timing for orbital translocation

ADVANCED

Should demonstrate knowledge of

- orbital osteotomies
- microphthalmos – orbital expansion (expanders & osteotomies)
- impact on orbital translocation on vision
- use of Box, Bipartition and advancement osteotomies of the orbit

Clinical Skills

BASIC

Emergencies – see module 1

INTERMEDIATE

Should demonstrate ability to

- plan orbital osteotomies
- formulate a management plan with respect to both techniques and timing

ADVANCED

Should demonstrate ability to

- formulate management plans with Ophthalmology and Neurosurgery in the context of the MDT
- plan minimal access and endoscopic approaches

Technical Skills and Procedures

BASIC

Not applicable

INTERMEDIATE

Should be able to perform split calvarial bone graft harvest and fixation of bone graft

ADVANCED

Should be able to perform

- minimal access incisions
- box osteotomies
- facial bipartition
- vertical orbital dystopia correction
- orbital reconstruction – autologous or alloplastic
- transcranial and subcranial orbital expansion
- Mommaerts osteotomies
- orbital access approaches (tumours)

EAR RECONSTRUCTION

Module:

Ear deformities and ear reconstruction

Objective: Competence in the diagnosis and management of all aspects of ear deformities and ear reconstruction.

Knowledge

BASIC

Should demonstrate knowledge of:

- anatomy and embryology of the external, middle and inner ear,
- pathophysiology of skin and cartilage wound healing, soft tissue tumours of the ear including haemangioma, problem scarring including keloid and principles of management of scarring,
- various classifications of ear deformities including acquired ear deformities

INTERMEDIATE

Should demonstrate knowledge of:

- principles of osseointegration,
- local and regional flaps around the ear including the scalp,
- development of the mandible and syndromes associated with ear deformities,
- different techniques of correcting the prominent ear principles of tissue expansion.

ADVANCED

Should demonstrate knowledge of

- various techniques of reconstructing microtia, macrotia, complex ear deformities such as constricted ears, sports induced trauma, acrobatic ears, anatomy of the scalp, chest wall, microsurgery, advances in tissue engineering, different techniques of ear reconstruction following partial/total loss, with and without cartilage loss, ear implants, timing of microtia surgery, mandibular distraction techniques, MDT approach to management of syndromic patients.
- classification and techniques to correct ear lobe deformities, anatomy of the facial nerve in relation to microtia and mandibular hypoplasia.

Clinical Skills

BASIC

Should demonstrate ability to undertake

- clinical assessment of the ear and identifying anatomical variations from the norm.
- clinical assessment of problem scarring and soft tissue tumours and formulating a plan of management.

INTERMEDIATE

Should demonstrate ability to

- differentiate and classify the various ear deformities and identify the anatomical deficiencies or variations of the ear and mandible,

- plan surgical procedures for prominent ear, cryptotia, deformities of the ear with minimal loss of the auricular tissue,
- plan and interpret relevant investigations for the ear sinus, congenital ear deformities

ADVANCED

Should demonstrate ability to

- assess complex ear deformities including those of the earlobe and syndromic patients, formulate a plan of management,
- assess the soft tissue cover and need for tissue expansion/flap cover,
- assess facial nerve function and mandibular deformities as well as occlusion of teeth,
- assess the suitability of patient for autogenous versus prosthetic ear reconstruction,
- assess and manage complications of ear corrections and ear reconstructive procedures
- communicate effectively with patient and carer,
- communicate with other team members of the MDT to integrate a time line for reconstruction

Technical Skills and Procedures

BASIC

Should be able to perform

- excision of simple accessory auricles, cysts and small tumours on the ear with direct closure or skin grafting, intralesional steroid injection,
- repair of split earlobes with local flaps, r
- repair of simple lacerations of the ear with or without cartilage repair,
- excision of Darwin's tubercle.

INTERMEDIATE

Should be able to perform

- correction of prominent ear with and without cartilage mutilation,
- correction of cryptotia,
- excision of tumours and repair of defects with local/regional flaps,
- excision of auricular sinuses,
- management of complications of corrective surgery,
- insertion of tissue expander

ADVANCED

Should be able to perform

- correction of complex ear deformities: spectrum of constricted ears, "crumpled" ears, cauliflower ears, acrobatic ears with calcified cartilage framework, macrotia and autogenous reconstruction of ears for anotia / microtia,

- harvesting rib cartilage, carving cartilage to design framework for ear reconstruction,
- dissecting skin envelope, temporalis fascial flap raising and inseting, raising other local flaps for skin cover of framework, conchal cartilage graft harvest, carving and inseting into defect,
- various operations for ear lobe reconstruction.

GENITOURINARY RECONSTRUCTION

Modules:

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

Module 1: Hypospadias and allied conditions

Objective: 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.

Knowledge

BASIC

Should demonstrate knowledge of

- embryology of the external genitalia, endocrinology pathology, anatomy of the male genitalia,
- wound healing,
- aetiological factors,
- investigations,
- management of the family.

INTERMEDIATE

Should demonstrate knowledge of

- classification of hypospadias,
- classification of surgical procedures,
- surgical techniques available for correction of hypospadias
- timing of surgery,
- principles of surgical management, postoperative management and complications

ADVANCED

Should demonstrate knowledge of hypospadias and allied conditions including

- recent theories on aetiology.
- assessment of outcome, flow rate.
- management of complications.
- management of salvage patient.
- management of BXO including aetiology.
- management of buried penis.
- management of cryptohypospadias(ventral curvature without hypospadias)/Peyronies disease

Clinical Skills

BASIC

Should demonstrate ability to

- assess presence and severity of hypospadias, presence of ventral curvature.
- assess whether foreskin is suitable for reconstruction.
- manage the child/family unit so that all are comfortable with the reconstructive process.

INTERMEDIATE

Should demonstrate ability to

- assess which operative technique is appropriate for the degree of deformity.
- analyse outcome including identification of complications.
- assess the child with foreskin pathology.

ADVANCED

Should demonstrate ability to

- identify those patients with suboptimal outcome or complication requiring further investigation or surgery and develop a management plan.
- assess a patient with foreskin and/or urethral BXO requiring further investigation and/or surgery.
- assess an hypospadias salvage/cripple patient with a view to surgical correction and develop a management plan.

Technical Skills and Procedures

BASIC

Should be able to perform

- meatotomy.

- circumcision.
- trimming of skin envelope following hypospadias repair.
- harvesting of foreskin/buccal mucosal full thickness graft, preparation and closure of the donor site.
- artificial erection test
- closure of GAP hypospadias repair.
- foreskin reconstruction.

INTERMEDIATE

Should be able to perform

- distal hypospadias reconstruction,
- dissection of GAP hypospadias repair.
- Snodgrass repair – dissection, closure of urethra, raising and inset of waterproofing layer, closure.
- Snodgraft repair – dissection, inset of graft, and closure as above.
- reconstruction of midshaft and proximal hypospadias,
- 1st stage Bracka repair – dissection of urethral plate, removal of fibrous bands, dissection of glans wings, inset of graft, application of dressing and post-op management of dressing.
- 2nd stage Bracka – dissection and closure as per Snodgrass.

ADVANCED

Should be able to perform

- closure of simple fistula.
- closure of complex fistula.
- operative management of fistula with distal urethral stenosis.
- operative management of distal/meatal stenosis.
- operative management of cryptohypospadias/Peyronies
- management of BXO – steroids, circumcision, 2 stage recon with buccal mucosal graft.
- management of complex salvage/cripple patient – Snodgraft, 2 stage Bracka repair with buccal and/or bladder mucosa.
- harvesting bladder mucosal graft.

Module 2: Epispadias, Anomalies of Female Genitalia, Ambiguous Genitalia and Acquired Perineal Defects

Objective: Acquire competence in the management of epispadias, anomalies of female genitalia, ambiguous genitalia and acquired perineal defects.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of epispadias / bladder extrophy, incidence, aetiology, MDT principles of management.
- defects of female genitalia – congenital/acquired.
- Congenital. Aims of surgical correction – restoration of urinary / faecal and sexual function.
- age at presentation.
- Acquired - causes – tumour, infection, trauma, previous DXT, scarring secondary to birth tear / episiotomy.

INTERMEDIATE

Should demonstrate knowledge of

- epispadias – aims of management, principles of treatment, principles of two main surgical repairs.
- female genitalia – congenital absence of vagina (Meyer- Rokitansky Syndrome), incidence, presents with primary amenorrhoea diagnostic test, principles of reconstruction – length, width vagina, durability, sensation.
- male genitalia reconstruction in Fournier’s disease, cancer, trauma, vascular malformation, BXO with emphasis on preservation of adequate length, sufficient skin for unrestricted erection, durability and sensation, preservation of erection and adequate urinary stream.
- reconstruction of urethra – staged BUMG, bladder mucosa.
- skin – SSG.
- scrotum – SSG, Flaps.

ADVANCED

Should demonstrate knowledge of

- Methods of female reconstruction post acquired defect – local pedicled flaps – lotus, gracillis, SSG, muscle flaps – gracillis myocutaneous flaps, distant flaps – VRAM.
- Male reconstruction post acquired defects.
- Urethra – 2 stage Bracka with BUMG with or without bladder mucosa grafts.
- Glans – Glansectomy and quilted thick SSG for reforming glans over existing corpora.
- Scrotum – tissue expansion, SSG, flaps – gracillis, Singapore technique.

Clinical Skills

BASIC

Should demonstrate ability to

- arrange appropriate investigations for conditions described in this module,
- perineal defects including assessment of patient with Fournier’s and initial management, identification of potential defect following resection of perineal tumour.

INTERMEDIATE

Should demonstrate ability to formulate treatment plan for

- epispadias, female genitalia anomalies and ambiguous genitalia incorporating expectations of the child and the family, analysis of the specific congenital problem and what may be required during reconstruction,
- perineal defects

Should be able to consent patients for reconstruction of perineal defects including graft and flap reconstruction.

ADVANCED

Should demonstrate ability to formulate treatment plan for

- ambiguous genitalia – incidence, causes, associated features, investigations – chromosome profile, testosterone / sex steroid profile and approach to parents.
- absence of vagina – reconstruction, Frank method – dilators, fasciocutaneous flaps, colonic or intestinal flaps.
- SSG – McIndoe method.

Should demonstrate ability to manage epispadias, female genital anomalies and ambiguous genitalia

Technical Skills and Procedures

BASIC

Should be able to perform

- SSG, full thickness graft, jumping man, application of topical negative pressure dressing.

INTERMEDIATE

Should be able to perform

- reconstruction of perineal defects – local flap reconstruction of vagina/labia including lotus and gracillis, resurfacing penile shaft, groin dissection, coverage of exposed testes.

ADVANCED

Should be able to perform

- surgical correction of epispadias, female genital anomalies and ambiguous genitalia be inaccessible to many trainees.
- reconstruction of perineal defects – external pudendal flap, posterior thigh flap, VRAM for abdominoperineal resection, glansctomy for cancer, free flaps for major perineal defects.

Module 3: Genital reassignment

Objective: Acquire competence in the management of gender reassignment.

Knowledge

BASIC

Should demonstrate knowledge of:

- definition of transsexualism.
- aetiology sex ratio.
- diagnosis of gender dysphoria
- problems associated with gender dysphoria - psychosocial, physical support for surgery, financial support for surgery.
- MDT.
- Requirement for Management: Live as other gender for two years, Hormones, Surgery

INTERMEDIATE

Should demonstrate knowledge of techniques available for male to female reassignment:

- penile flap – glans reduced as clitoris, penile skin as flap for vagina, scrotum for labia / clitoral hood – usually two stage
- modified McIndoe – SSG or FTSG from penis for vagina.
- others – Bowel for vagina

ADVANCED

Should demonstrate knowledge of techniques available for female to male reassignment

- mastectomy.
- phallus construction with internal urethra and ability to become erect, non hair bearing, sensate, size, erectability and arousability by deep pudendal nerve. Specific options for phallus reconstruction
- random pattern abdominal tube pedicle
- groin flap
- SIEA flap
- gracilis flap
- radial forearm flap
- urethral reconstruction options,
- SSG
- FTSG
- transplantation of urethra
- tubed bladder wall
- ancillary procedures
- testicular implants
- vaginectomy
- facial feminising techniques
- breast augmentation

Clinical Skills

BASIC

Ability to demonstrate working within an MDT and the ability to assess the psychological state of the patient.

INTERMEDIATE

Develop the skills to arrange patient-centered care with patient as partner in the process (depending on age of patient), providing realistic information and guiding patient decision-making regarding choices available and timing of those treatments.

ADVANCED

Ability to manage and lead multi-disciplinary teams in respect of provision of psychosocial 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.

Technical Skills and Procedures

BASIC

Should be able to perform

- raising local flaps
- insertion of testicular prosthesis.

INTERMEDIATE

Should be able to perform

- elevation of complex flaps including, groin flap, radial forearm flap, abdominal tubed pedicle, SIEA flap and gracilis flap.

ADVANCED

Should be able to perform

- specific operations for gender reassignment

HAND SURGERY

Modules:

- 1 Skin / Soft tissue / Microsurgery / Dupuytren's Disease
- 2 Fractures and Joint Injuries including Wrist Instability
- 3 Osteoarthritis and Inflammatory Arthritis
- 4 Tendon and tendon-related disorders
- 5 Nerve and nerve-related disorders
- 6 The Child's Hand, Vascular Disorders and Tumours

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

Objective: Acquire competence in the diagnosis and management of soft tissue problems around the hand and upper limb including traumatic loss.

Acquire competence in all aspects of care of Dupuytren's disease.

Knowledge

BASIC

Should demonstrate knowledge of:

- anatomy, embryology, physiology of skin, blood supply and blood flow,
- models of skin blood supply
- mechanism of action of pharmacology on the microcirculation,
- elements of wound healing,
- organisms causing soft tissue infection including, microbiology of infecting organisms, surgical pathology and spread of infection,
- surgical and pathological anatomy of Dupuytren's disease in the palm and digits.

INTERMEDIATE

Should demonstrate knowledge of:

- range, indications and principles of operations to treat conditions listed in this module,
- post-operative complications and their management,
- hand therapy interventions for wound & scar management, reduction of swelling and management of stiffness,
- levels of amputation for the upper limb,
- principles of microvascular surgery,
- principles of replantation including macroreplantation.
- sciences of pathogenesis of Dupuytren's disease.

ADVANCED

Should demonstrate knowledge of:

- recent advances in wound healing including wound healing technology such as vacuum-assisted closure,
- ancillary investigations including those pertinent to vascular compromise of limb, life or limb-threatening infections, techniques to raise vascularised free tissue transfers including lateral arm flap, latissimus dorsi flap, gracilis flap, toe transfer,
- management of the mutilating hand injury including rollover injury, gunshot injury,
- management of extravasation and high-pressure injection injury to the hand.
- management of thermal injury to the hand including local treatment of scald, flame, chemical & electrical burns and frostbite,

Clinical Skills

BASIC

Should perform :

- assessment and non-operative management of the acute surgical patient including targeted hand-related history and hand examination.

INTERMEDIATE

Should demonstrate ability to:

- devise management algorithms for the conditions covered in this section including investigations.

ADVANCED

Should demonstrate abilities of :

- analysis and diagnostic synthesis, judgement, surgical planning.

Technical Skills and Procedures

BASIC

Should be able to perform:

- nail bed repair,
- different types of skin grafts including split skin/full thickness skin graft,
- palmar fasciectomy for Dupuytren's disease,
- fasciocutaneous flaps around the forearm.
- variety of flap reconstructions,
- local flap (transposition, rotation, island),
- microsurgical techniques including simulation-based exercises
- arterial and venous repair – small and medium vessels

INTERMEDIATE

Should be able to perform :

- fingertip reconstruction : heterodigital flap reconstruction including cross-finger flap, thenar flap, Foucher flap, and homodigital neurovascular island flaps
- application of mechanical vacuum suction device for appropriate wounds,
- debridement of complex wounds,
- fasciectomy for MCPJ contracture (Dupuytren's disease),
- fasciectomy with correction of PIPJ contracture.

ADVANCED

Should be able to perform :

- planning and execution of flap reconstruction
- distant flap e.g. groin, posterior interosseous artery flap, radial forearm flap
- free tissue transfer – flap elevation,
- elevation of variety of free tissue transfers e.g. lateral arm flap, latissimus dorsi muscle flap, second toe transfer etc.,
- includes cadaver based flap elevation as part of simulation exercises
- microsurgical techniques
- microsurgical free tissue transfer
- revascularisation digit or upper limb part
- replantation of digit or upper limb segment
- fasciectomy for recurrence of Dupuytren's disease,
- dermofasciectomy for Dupuytren's disease.

Module 2: Fractures and Joint Injuries including Wrist Instability

Objective: 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 and management of the unstable wrist including distal radioulnar joint.

Knowledge

BASIC

Should be able to demonstrate knowledge of

- pathophysiology of fracture healing including non-union and malunion,
- principles of operative and non-operative management of hand and wrist fractures,
- detailed anatomy of:
 - radio-carpal/DRUJ/MCP/PIP/DIP joints and CMC joint of the thumb
 - ligamentous anatomy of these joints and how it influences treatment
- available imaging techniques and their interpretation:
 - plain and stress radiographs of the wrist and hand.
 - other specific views relevant to particular situations

- role of: MRI/bone scan / ultrasound / arthrography / arthroscopy for investigating the hand and wrist

INTERMEDIATE

Should be able to demonstrate knowledge of

- detailed management of fractures and dislocations of bones and joints of hand and wrist including carpus and distal radioulnar joint,
- normal biomechanics of the osseoligamentous structures of the hand and wrist.

ADVANCED

Should be able to demonstrate knowledge of

- detailed wrist anatomy,
- pathophysiology of wrist instability / recognised patterns of instability and their clinical presentation,
- investigations for complex joint disorders and wrist instability,
- appropriate interventions for wrist instability through knowledge of indications,
- indications for diagnostic and therapeutic wrist arthroscopy.

Clinical skills

BASIC

Should demonstrate ability to

- clinically assess fractures, dislocations and ligamentous injuries of the hand and wrist,
- assess the unstable wrist,
- manage common fractures of the hand and wrist,
- apply a range of plaster splints.

INTERMEDIATE

Should demonstrate ability to

- manage more complex fractures of the hand and wrist,
- manage distal radius and scaphoid fractures by standard techniques.

ADVANCED

Should demonstrate ability to

- clinically assess and manage complex fractures of the distal radius and scaphoid,
- manage ligamentous injury of the carpus and distal radioulnar joint,
- manage malunion and non-union of fractures of the phalanges, carpus and distal radius.

Technical Skills and Procedures

BASIC

Should be able to perform

- 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.

INTERMEDIATE

Should be able to perform

- closed K-wiring for: CMC/PIP joint dislocations phalangeal/metacarpal fractures distal radius fractures (pins & plaster)
- open fixation of metacarpal fractures,
- open fixation of uncomplicated distal radius fractures,
- repair of ulnar collateral ligament of MCPJ of thumb (Gamekeeper's thumb),
- application of external fixator to upper limb.

ADVANCED

Should be able to perform

- open fixation of phalangeal fractures,
- operative treatment of intra-articular fractures of the PIP joint,
- open fixation of complex distal radius fractures,
- scaphoid fracture fixation (acute and for non-union),
- vascularised bone grafting for scaphoid non-union,
- operative stabilisation of acute carpal disruptions, ligament stabilisation procedures for chronic problems of the, scapholunate, lunotriquetral CMC joints and midcarpal instability,
- bone transport
- be able to use bone substitutes.

Module 3: Osteoarthritis and Inflammatory Arthritis

Objective: 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.

Knowledge

BASIC

Should be able to demonstrate knowledge of

- pathophysiology of osteoarthritis, inflammatory arthritis and septic arthritis including appreciation of patterns of disease.
- imbalances and deformities associated with inflammatory arthritis
- pathomechanics of common rheumatoid hand deformities including: distal radioulnar joint subluxation and carpal translocation, MCPJ subluxation and ulnar drift digital boutonnière and swan neck thumb deformity and CMC disease
- principles of arthroplasty.

INTERMEDIATE

Should be able to demonstrate knowledge of

- principles and detailed management of the common osteoarthritic disorders of the hand and wrist including the basal joint of the thumb,
- principles and detailed management of rheumatoid arthritis in the hand and wrist,
- aetiology, pathomechanics of deformity in inflammatory arthritides including understanding disease patterns,
- biomechanics of small joint replacement,
- place of soft tissue reconstruction, joint fusion, replacement, interposition and excision arthroplasty in the treatment of the rheumatoid hand and wrist,
- planning and prioritising treatment within an MDT setting.

ADVANCED

Should be able to demonstrate knowledge of

- principles and detailed management of more complex and osteoarthritic disorders of the hand including secondary osteoarthritis,
- surgical and non-surgical management of the wrist, tendons, small joints and imbalance disorders (swan neck and boutonnière) occurring in rheumatoid arthritis,
- pathology, mechanisms of deformity and management of other inflammatory conditions (non-rheumatoid) affecting the hand and wrist,
- management of Kienböck's disease and Madelung's deformity.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess the arthritic patient and recognise the typical patterns of disease,
- demonstrate conservative management techniques including splinting, exercises and understanding of occupational therapy assessment and provision of aids to daily living,
- undertake external K-wire removal.

INTERMEDIATE

Should demonstrate ability to

- undertake detailed examination of the patient with inflammatory arthritis to demonstrate

the features of distal radioulnar joint subluxation and carpal translocation, MCPJ subluxation and ulnar drift digital boutonnière and swan neck thumb deformity and CMCJ disease

- diagnose pathology through local anaesthetic joint injection techniques,
- undertake treatment by joint injection,
- includes simulation-based exercises for joint injection techniques

ADVANCED

Should demonstrate knowledge of detailed management algorithms for the conditions covered in this module including complex conditions.

Technical Skills and Procedures

BASIC

Should be able to perform

- harvesting of iliac bone graft / radius bone graft,
- simulation-based exercises of wrist arthroscopy

INTERMEDIATE

Should be able to perform

- arthrodesis of DIPJ / PIPJ/ MCPJ,
- trapeziectomy plus/minus soft tissue ligamentous reconstruction,
- total wrist arthrodesis
- Darrachs procedure
- Suave-Kapandje procedure
- diagnostic wrist arthroscopy

ADVANCED

Should be able to perform

- therapeutic wrist arthroscopy e.g. TFCC debridement
- limited arthrodesis including STT, 4-corner, radiolunate
- variety of procedures for rheumatoid arthritis including MCPJ arthroplasty e.g. Swanson silicone spacer replacement, surface replacement arthroplasty, soft tissue arthroplasty with ligament reconstruction for instability, soft tissue correction for swan neck/boutonnière deformities
- joint replacement arthroplasty: PIP / CMCJ / Wrist / DRUJ

Module 4: Tendon and tendon-related disorders

Objective: 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.

Knowledge

BASIC

Should be able to demonstrate knowledge of

- mechanisms of tendon injury and healing,
- pathophysiology of related tendon disorders.

INTERMEDIATE

Should be able to demonstrate knowledge of

- principles of tendon transfer,
- biomechanics of the tendons and tendon sheath / pulleys,
- available suture techniques for repair of the divided tendon including multistrand repair,
- rehabilitation regimens for flexor and extensor tendon repair.

ADVANCED

Should be able to demonstrate knowledge of

- recent advances in basic sciences of tendon injury and repair,
- basic science and evidence base informing use of different techniques of tendon repair and rehabilitation regimens,
- the role of the intrinsic muscles in facilitating co-ordinated tendon function.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess the injured tendon and other tendon disorders,
- select use of relevant specialist imaging techniques such as ultrasound.

INTERMEDIATE

Should demonstrate ability to

- clinically assess and manage algorithms for the conditions covered in this module,
- examine the stiff finger and distinguish flexor/extensor adhesions / primary or secondary joint stiffness.

ADVANCED

Should demonstrate ability to

- undertake detailed assessment of and advise on complex tendon problems including reconstruction and reanimation of the hand in cases of tendon loss and nerve palsy using

- individualised tendon transfers,
- analyse and advise on modifications needed to standard therapy regimens to correct specific problems such as joint contracture.

Technical Skills and Procedures

BASIC

Should be able to perform

- extensor tendon repair
- flexor tendon repair (Zones III-V)
- tendon graft harvest
- extensor / flexor synovectomy
- trigger digit release

INTERMEDIATE

Should be able to perform:

- De Quervain's release
- flexor tendon repair (multistrand)(Zones I & II)
- flexor or extensor tenolysis
- tendon transfer (EI-EPL)
- tenodesis (EDC replacement in partial EDC rupture)

ADVANCED

Should be able to perform

- late reconstruction of flexor and extensor tendons:
- tendon grafting 1 and 2-stage
- tendon transfer
- radial nerve set
- opponensplasty for opposition
- intrinsic replacement for claw hand
- adductorplasty for key pinch

Module 5: Nerve and nerve-related disorders

Objective: 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.

Knowledge

BASIC

Should demonstrate knowledge of

- topographic anatomy of peripheral nerve including brachial plexus,
- response of peripheral nerve to injury and repair,
- pathophysiology of nerve compressive disorders.
- appropriate outcome assessment instruments.

INTERMEDIATE

Should demonstrate knowledge of

- techniques of nerve repair,
- mechanisms of brachial plexus injury, the patterns of injury and outline treatment options,
- pathophysiology and classification of CRPS and neuropathic pain problems.

ADVANCED

Should demonstrate knowledge of

- appropriate use of nerve grafts and other conduits,
- techniques of nerve reconstruction, neurotisation, and muscle transfers for reanimation of the upper limb,
- principles of management and classification systems pertinent to cerebral palsy and tetraplegia,
- pharmacological and non-pharmacological methods for the relief of nerve-related pain problems.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess nerve-related disorders including brachial plexus,
- apply relevant specialist imaging techniques such as electrophysiological investigation and ultrasound,
- prevent iatrogenic nerve injury.

INTERMEDIATE

Should demonstrate knowledge of

- clinical assessment and management algorithms for the conditions covered in this module.
- assessment of nerve function using specific equipment used in rehabilitation and

assessment (such as Semmes Weinstein filaments).

ADVANCED

Should demonstrate ability to

- clinically assess brachial plexus and obstetrical brachial plexus injury including acute and interval treatment,
- clinically assess the spastic and tetraplegic upper limb.
- define the management algorithm of the iatrogenic nerve injury.

Technical Skills and Procedures

BASIC

Should be able to perform:

- peripheral nerve repair including digital nerve including simulation- based exercises for microsurgical peripheral nerve repair
- nerve graft harvest
- carpal tunnel release
- cubital tunnel release (simple decompression)

INTERMEDIATE

Should be able to perform:

- nerve decompression : cubital tunnel release (transposition / medial epicondylectomy), revision carpal tunnel release
- nerve grafting for segmental nerve defect

ADVANCED

Should be able to perform:

- nerve decompression: ulnar nerve in Guyon's canal, submuscular transposition of ulnar nerve (cubital tunnel), radial nerve in radial tunnel, median nerve in pronator tunnel
- transposition of neuroma
- wrist denervation
- brachial plexus exploration (including OBP), nerve grafting neurotisation, intercostal nerve grafting muscle transfer for reanimation

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

Objective: Acquire overall competence in the diagnosis and management of children's hand problems with emphasis on congenital hand conditions. 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.

Knowledge

BASIC

Should demonstrate knowledge of

- principles of management of children's hand disorders including classification, reconstructive principles and timing of operations for congenital difference,
- embryology of the upper limb and the mechanisms of malformation,
- patterns of normal growth and development,
- management of vascular injury including compartment syndrome,
- principles of management of soft tissue and bony tumours particularly the more common swellings found around the hand.,
- management of upper limb tumours with reference to surgical oncology including biopsy techniques, excision margins, management of regional lymph nodes, formal amputations.

INTERMEDIATE

Should demonstrate knowledge of

- the following conditions of the Child's Hand: trigger digits, polydactyly including thumb duplication, simple syndactyly, epiphyseal injury (Salter Harris)
- management of vascular insufficiency syndromes, - haemangiomas and vascular malformations,
- management of soft tissue and bony tumours including formal amputations, reconstructions,
- principles of management of skin cancer occurring in the upper limb and management of the regional lymph nodes.

ADVANCED

Should demonstrate knowledge of

- 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
- vascular lesions including vascular malformations,
- management of acute and chronic vascular insufficiency syndromes including compartment syndrome / Volkmann's ischaemic contracture.
- classification systems and histopathology relevant to neoplasms of the upper limb including skin cancer, sarcoma and bone tumours,
- modalities of treatment including non-surgical and surgical options,
- surgical margins for the commoner tumours,
- options for reconstruction of the surgically excised defect,
- adjuvant treatments used in combination with surgery for malignant neoplasms.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess and deliver non-operative management of the Child's Hand disorder,
- in respect of cancer diagnoses demonstrates the skill set necessary to advise a patient of such diagnosis.
- work and communicate within the relevant multidisciplinary team (MDT)

INTERMEDIATE

Should demonstrate ability to apply a working knowledge of the management algorithms to the conditions covered in this module.

ADVANCED

Should demonstrate

- skills of analysis and diagnostic synthesis, judgement, and surgical planning.
- in respect of the Child's Hand, the ability to advise regarding timing of reconstruction and effect of growth on reconstructive surgery previously performed,
- in respect of vascular disorders shows the ability to advise regarding conservative, non-surgical and surgical treatment options,
- in respect of neoplastic conditions of the upper limb the shows the ability to provide detailed advice on the treatment pathway, including interpretation of specialist imaging, within the context of the relevant MDT.

Technical Skills and Procedures

BASIC

Should be able to perform

- surgery for uncomplicated traumatic conditions of the Child's Hand,
- excision of small superficial vascular malformations,
- ganglion excision (dorsal wrist, volar wrist, DIPJ)
- safe biopsy for suspected tumours of the upper limb

INTERMEDIATE

Should be able to perform

- trigger thumb/finger release simple syndactyly separation correction of duplicate thumb correction of polydactyly
- reconstruction of vascular defects by vein grafting,
- excision of vascular malformations involving multiple tissue layers,
- fasciotomies for compartment syndrome,
- excision of giant cell tumour of tendon sheath,

- excision/curettage enchondroma,
- removal of swellings from nerves e.g. Schwannoma
- excision of other benign tumours of bone and soft tissue.

ADVANCED

Should be able to perform:

- complex syndactyly correction
- radialisation radial club hand
- application external distraction devices for radial club hand
- pollicisation
- cleft hand correction
- recreation of first web space (various conditions)
- excision of major vascular malformations and reconstruction resultant defects
- excision of malignant tumours of bone and soft tissue including compartmentectomy and reconstruction of resultant defects.
- axillary lymphadenectomy

HEAD & NECK SURGERY

Modules:

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

Module 1: Basic Sciences

- Embryology, development, anatomy and physiology
- Head & Neck assessment – examination, investigations including imaging and biopsy techniques

Objective: To understand the development, anatomy and physiology of the head and neck in relation to its surgery.

Competence in the diagnosis, use of imaging and management of head and neck disorders

Knowledge

BASIC

Should demonstrate knowledge of

- embryology of head & neck.
- topographical and segmental anatomy of the head & neck.
- vascular, neuronal and lymphatic supply / drainage of the head & neck.
- appropriate use of diagnostic imaging
- aesthetic units of the face and neck

INTERMEDIATE

Should demonstrate knowledge of

- range, indications and principles of surgical options for surgical ablation of tumours of the head & neck.
- range, indications and principles of surgical options for soft tissue defect reconstruction of the head & neck.
- range, indications and principles of surgical options for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips).
- concepts and limitations of diagnostic techniques
- aetiology and assessment of facial palsy
- assessment of facial aesthetics
- role and use of the head & neck MDT

ADVANCED

Should demonstrate knowledge of

- factors determining appropriate surgical ablation techniques
- factors determining decision making in choice of flaps and tissue for soft tissue defect reconstruction
- factors determining decision making in choice of flaps and tissue for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips).
- range, indications and principles of surgical options and non-operative techniques in facial reanimation.

Clinical Skills

BASIC

Should demonstrate ability to

- take a focused head & neck history related to any head & neck symptom.
- assess and non-operatively manage acute injury. recognise life-threatening injuries of the airway and major blood vessels.
- Undertake competent examination of the head & neck.
- Undertake competent examination of cervical lymph nodes.
- record diagnostic findings accurately
- organise discussion of cases at head & neck MDT meetings.

INTERMEDIATE

Should demonstrate ability to

- interpret significance of cytological and histological biopsy reports
- interpret CT and MRI scans of the head and neck.
- plan appropriately for further non-standard investigations of head & neck symptoms following inconclusive initial test results.

ADVANCED

Should demonstrate skills of analysis and diagnostic synthesis, judgement and surgical planning pertaining to the topics covered in this module.

Technical Skills and Procedures

BASIC

Should be able to perform

- airway management with the skill detailed in ATLS
- circulatory support with the skills detailed in ATLS
- free-hand and ultrasound guided lesion FNA of the head & neck
- free-hand and ultrasound guided core biopsy of the head & neck

INTERMEDIATE

Should be able to perform

- surgical incision / excision biopsy of intra-oral lesions
- direct and indirect pharyngolaryngoscopy
- examination of head & neck under anaesthesia

ADVANCED

Should be able to perform

- sentinel lymph node biopsy
- surgical incision / excision biopsy of intra-oral / laryngeal / pharyngeal lesions

Module 2: Skin-related neoplasia of the head & neck

Objective: Competence in the diagnosis, assessment and management of all types of skin related cancer of the head and neck.

Knowledge

BASIC

Should demonstrate knowledge of

- epidemiology

- histological classification (BCC / SCC / Melanoma / adnexal)
- staging of skin cancer
- prognostic factors (tumour and patient-related) and implications for patient treatment recommendations
- principles of screening programmes within a population.
- NICE guidelines in treatment of non-melanoma skin cancers
- understanding the MDT
- knowledge of reconstructive options

INTERMEDIATE

Should demonstrate knowledge of

- indications for non-surgical treatment
- adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies particularly for melanoma.
- cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis
- palliative treatment options for skin cancer.

ADVANCED

Should demonstrate knowledge of

- association between specific high risk benign skin conditions with associated increased skin cancer risk
- melanoma biology
- important adjuvant and neo-adjuvant historical and current trials (clinical/surgical, chemotherapy, radiotherapy, hormonal and biological).

Clinical Skills

BASIC

Should demonstrate ability to

- take focused skin-related history, eliciting factors associated with benign and malignant skin neoplasia
- undertake competent head & neck examination
- examine for head & neck lymphadenopathy
- initiate appropriate investigations
- undertake pre-op. skin prep and draping and prescribe antibiotic prophylaxis
- work effectively within the skin cancer multidisciplinary team.

INTERMEDIATE

Should demonstrate ability to

- assess and manage patients presenting with locally advanced disease
- interpret CT, MRI & PET scans,

- recognise where further pathology or imaging studies may be required and request these appropriately,
- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues.

ADVANCED

Should demonstrate skills of

- communication of a cancer diagnosis with patients,
- discussion of complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent,
- analysis and diagnostic synthesis, judgement and surgical planning pertaining to conditions described in this module.
- communication within the MDT.

Technical Skills and Procedures

BASIC

Should be able to perform

- incision biopsy of lesion
- excision biopsy of lesion
- FNA / core sample of lymph node
- Lymph node sampling [in centres where SNB not available]
- local flap reconstruction (rotation / transposition / advancement)
- split and full thickness skin grafts.

INTERMEDIATE

Should be able to perform

- sentinel lymph node biopsy, dual modality and blue dye only
- selective / modified radical neck dissection
- elevation of regional flaps

ADVANCED

Should be able to perform

- radical or extended neck dissection
- reconstruction with regional flaps
- free flap surgery
- reconstruction of specific aesthetic units (nose / eyelids / ears / lips) – see also Module 4 Reconstructive techniques of the head and neck : Advanced technical skills and procedures.

Module 3: Non skin-related neoplasia of the head & neck

Objective: Competence in the diagnosis, assessment and management of all types of non-skin related cancer of the head and neck.

Knowledge

BASIC

Should demonstrate knowledge of

- epidemiology
- types of cancer – oral cavity, nasopharynx, oropharynx, larynx,
- reconstructive options
- TNM Staging of skin cancer
- prognostic factors (tumour and patient related) and implications for patient treatment recommendations
- cancer network guidelines in treatment of non-skin cancers of the head & neck
- understanding the MDT

INTERMEDIATE

Should demonstrate knowledge of

- indications for non-surgical treatment
- adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies.
- cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis.
- palliative treatment options for head & neck cancer.
- hospice care

ADVANCED

Should demonstrate knowledge of

- association between specific high risk benign skin conditions with associated increased skin cancer risk
- important adjuvant and neo-adjuvant historical and current trials (clinical/surgical, chemotherapy, radiotherapy, hormonal and biological).
- role of HPV virus in cancer aetiology

Clinical Skills

BASIC

Should to be able to

- take focused history related to non-skin tumours of the head & neck eliciting relevant

factors,

- undertake competent head & neck examination particularly of oral cavity, pharynx and larynx
- undertake competent examination of head & neck lymphadenopathy
- initiate appropriate investigations
- work effectively within the skin cancer multidisciplinary team.

INTERMEDIATE

Should demonstrate ability to

- assess and manage patients presenting with locally advanced disease,
- interpret CT, MRI & PET scans,
- recognise where further pathology or radiology may be required and request these appropriately,
- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues.

ADVANCED

Should demonstrate ability to

- discuss a cancer diagnosis with patients,
- discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent,
- communicate effectively and skilfully
- use skills of analysis and diagnostic synthesis, judgement and surgical planning pertaining to the conditions described in this module.

Technical Skills and Procedures

BASIC

Should be able to perform

- incision biopsy of lesion (oral cavity / pharynx / larynx)
- excision biopsy of lesion (oral cavity / pharynx / larynx)
- FNA / core sample of cervical / parotid lymph node
- local flap reconstruction (rotation / transposition / advancement)
- examination under anaesthesia

INTERMEDIATE

Should be able to perform

- direct and indirect pharyngolaryngoscopy
- cervical sentinel lymph node biopsy, dual modality and blue dye only.
- selective / modified radical neck dissection
- regional flaps

ADVANCED

Should be able to perform

- radical or extended neck dissection
 - free flap surgery
 - reconstruction of aesthetic units (nose / eyelids / ears / lips) – see module 4
- Reconstructive techniques of the head and neck : Advanced technical skills and procedures.

Module 4: Techniques for reconstruction of the head & neck

Objective: Acquire competence in the planning, execution and management of appropriate soft tissue reconstruction of head & neck defects.

Knowledge

BASIC

Should demonstrate knowledge of

- classification of flaps (random v axial / muscle flap - Mathes and Nahai / type of tissue being transferred)
- factors affecting outcome in flap surgery (patient related, operative, adjuvant therapy related),
- principles of flap surgery (replace “like with like”, reconstructive units, back-up plan and “life boat”, donor site considerations)
- principles of microsurgery
- anatomy of perforators and angiosomes – relevant to planning of local, regional and distal flaps.
- anatomy of local, regional and free flaps suitable for head & neck reconstruction.
- advantages and disadvantages of local, regional and free flaps in the head & neck,
- appropriate use of local, regional and free flaps in the head & neck,

INTERMEDIATE

Should demonstrate knowledge of

- relevant surgical anatomy and neurovascular supply of flaps used in head & neck reconstruction
- pre-operative investigations for specific flaps
- ability to interpret angiographic abnormalities when planning reconstruction,
- complications of autologous tissue reconstruction including donor site morbidity
- post-operative flap monitoring techniques
- airway management of the head & neck,
- stages of bereavement associated with loss of body image and the clinical and psychological supports that can be put in place to assist the patient cope with that loss,
- planning and prioritising treatment within the head & neck MDT setting,

ADVANCED

Should demonstrate knowledge of

- assessment of outcome
- long term outcomes of head & neck reconstruction
- flap salvage and options following failure,
- outline the impact of disfigurement, the consequences of an altered appearance, what it involves psychologically and socially, and describe the impact of an individual's body image on their life and that of their family.
- outline the process by which an individual can successfully adjust to disfigurement and explain how the multidisciplinary team can assist with that process.

Clinical Skills

BASIC

Should demonstrate ability to

- take focused history eliciting factors important for decisions regarding suitability / type of reconstruction,
- clinically assess the soft tissue defect,
- keep contemporaneous and appropriate record,
- demonstrate simple management techniques including use of appropriate dressings,
- plan both local and free flaps appropriately for defect,
- co-ordinate soft tissue reconstruction in conjunction with ablative team.

INTERMEDIATE

Should demonstrate ability to

- counsel patient regarding advantages and disadvantages of reconstruction - specifically setting realistic expectations, reconstruction as a process, template in-patient stay and complications,
- take informed consent and participate in joint decision-making.
- manage patients in post-operative period,
- manage complications of surgery applicable to the clinic setting.
- use psychological assessment tools for evaluation of psychological needs (patient questionnaires).

ADVANCED

Should demonstrate ability to

- clinically assess complex reconstructive requirements and make decisions on appropriate management,
- interpret investigations and formulate management plans,
- undertake patient-centered care with patient as partner in the process, providing realistic information and guiding patient decision-making regarding choices available and timing of those treatments,
- manage and lead multi-disciplinary teams in respect of provision of psycho-social care,

- arrange the care pathway that supports an individual to successfully adjust to disfigurement through giving the individual and family specific life-skills. These include the patient being provided with information about their condition and its treatment, developing a positive outlook/belief system, learning to cope with their feelings, exchanging experiences with others who've "been there" and social skills training to manage other people's reactions.

Technical Skills and Procedures

BASIC

Should be able to perform

- exposure of vessels
- positioning of patient on operating table
- protection of pressure areas.
- prevention of nerve injuries / neurapraxia.
- skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis.
- selection / arrangement of appropriate level of post-operative care.

INTERMEDIATE

Should be able to perform

- pre-operative marking of patient
- raising range of pedicled autologous flaps
- in-setting of flap.
- harvesting vein graft

ADVANCED

Should be able to perform

- microvascular anastomoses
- flap salvage for failing flaps
- flap shaping techniques
- flap revision techniques

Module 5: Reconstruction of specific head and neck sites

Objective: Acquire competence in the planning, execution, management and reconstruction of specific head and neck sub-units including eyelids, nose, lips, ears and scalp.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of tissues suitable for planning of local, regional and distal flaps to specific sites in the head & neck,
- vascular anatomy relevant to planning of local, regional and distal flaps to specific sites in the head & neck,
- recognise the appropriate use, advantages and disadvantages of local, regional and free flaps in reconstruction of specific sites in the head & neck
- factors affecting outcome in flap surgery (patient-related, operative, adjuvant therapy-related).

INTERMEDIATE

Should demonstrate knowledge of

- airway management of the head & neck
- ability to interpret angiographic abnormalities when planning reconstruction of specific sites in the head and neck,
- pre-operative investigations for specific flaps,
- complications of autologous tissue reconstruction including donor site morbidity,
- post-operative flap monitoring techniques,
- planning and prioritising treatment within the head & neck MDT setting.

ADVANCED

Should demonstrate knowledge of

- long-term outcomes of head & neck reconstruction,
- assessment of outcome,
- flap salvage and options following failure,
- use of osseointegrated implants and head and neck prosthetics,
- effects of radiotherapy.

Clinical Skills

BASIC

Should demonstrate ability to

- take focused history eliciting factors important for decisions regarding suitability / type of reconstruction for a specific head and neck site,
- clinically assess specific head and neck defects,
- keep contemporaneous and appropriate records,
- effect simple wound management techniques including use of appropriate dressings,
- plan both local, regional and free flaps appropriate for specific defect,

- demonstrate soft tissue reconstruction in conjunction with ablative team,

INTERMEDIATE

Should demonstrate ability to

- discuss advantages and disadvantages of reconstruction - specifically setting of realistic expectation, reconstruction as a process, template in-patient stay and complications,
- understand importance of informed consent and joint decision making,
- manage complications of surgery in pre, peri and post-operative phases.

ADVANCED

Should demonstrate ability to

- clinically assess complex reconstructive requirements and make decisions on appropriate management for specific sites in the head and neck,
- interpret investigations to formulate management plan,
- manage tissues previously treated with radiotherapy.

Technical Skills and Procedures

BASIC

Should be able to perform

- exposure of vessels,
- positioning of patient on operating table,
- protection of pressure areas,
- prevention of nerve injuries / neurapraxia,
- skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis regimens,
- selection / arrangement of appropriate post-operative care.

INTERMEDIATE

Should be able to perform

- pre-operative marking of patient,
- raising local, regional and pedicled autologous flaps relevant to specific sites of the head and neck,
- in-setting of flap.

ADVANCED

Should be able to perform

- treatment of specific sites of the head and neck following previous radiotherapy,
- salvage surgery of specific sites of the head and neck,
- microvascular anastomoses,
- flap salvage for failing flaps,

- flap revision techniques,
- use of osseointegrated implants and facial prosthetics.

Module 6: Facial reanimation

Objective: Competence in the diagnosis of facial palsy and management by both static and dynamic procedures as well as non-surgical treatments.

Knowledge

BASIC

Should demonstrate knowledge of

- epidemiology,
- anatomy of the facial nerve,
- aetiological causes of facial palsy,
- prognostic factors and implications for patient treatment recommendations,
- range of reconstructive options

INTERMEDIATE

Should demonstrate knowledge of

- non-surgical treatments (Botox, biofeedback, electrical stimulation of facial musculature),
- static sling procedures (tendon, fascia, artificial),
- dynamic sling procedures (temporalis, masseter),
- principles of facial nerve reconstruction (direct suturing, nerve grafting, cross facial nerve grafting).

ADVANCED

Should demonstrate knowledge of

- free muscle transfer techniques (cross facial nerve grafting, gracilis, pectoralis minor, rectus abdominis),
- reconstructive aesthetic techniques (endoscopic browlift, facelift, upper & lower blepharoplasties),
- use of ancillary surgical techniques (autologous fat transfer, re-positioning parotid ducts etc),
- cranial nerve transfers (hypoglossal, accessory).

Clinical Skills

BASIC

Should demonstrate ability to

- take focused facial nerve related history eliciting factors localising site of injury,
- undertake competent facial nerve examination ,
- initiate appropriate investigations (CT, MRI, EMG, nerve conduction studies).

INTERMEDIATE

Should demonstrate ability to

- interpret CT, MRI, EMG& nerve conduction studies,
- assess and manage patients presenting with locally advanced disease,
- recognise where further investigations may be required and request these appropriately,
- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues.

ADVANCED

Should demonstrate ability to

- undertake analysis and diagnostic synthesis, judgement and surgical planning pertinent to facial palsy,
- discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent.

Technical Skills and Procedures

BASIC

Should be able to perform

- exploration, protection and identification of facial nerve branches,
- direct repair of facial nerve,
- nerve grafting of facial nerve,
- techniques of Botox injection of face, techniques of biofeedback and electrical stimulation of facial musculature,
- surgical access and identification of deep layers of the face.

INTERMEDIATE

Should be able to perform

- cross facial nerve grafting,
- insertion of static slings,
- dynamic slings (Temporalis, masseter).

ADVANCED

Should be able to perform

- free muscle tissue transfer techniques (gracilis, pectoralis minor, rectus abdominis),

- cranial nerve transfers (hypoglossal, accessory),
- ancillary reconstructive techniques (autologous fat transfer, re-positioning parotid ducts etc),
- reconstructive aesthetic techniques (endoscopic browlift, facelift, upper & lower blepharoplasties).

LOWER LIMB TRAUMA

Modules:

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

Module 1: Assessment and primary management lower limb injuries

Objective: Acquire competence in the initial combined management of patients with open lower limb fractures in the emergency department.

Knowledge

BASIC

Should demonstrate knowledge of

- resuscitation principles as defined by ATLS.
- applied anatomy, physiology, pathology and mechanisms of limb injury, blood supply of skin, fat and muscle,
- angiosomes of lower limb
- classification of open fractures, including Gustilo classification,
- factors influencing fracture healing,
- timing and rationale for antibiotic use and timing of initial debridement.,
- appropriate pre-operative investigations.
- role of other members of team including microbiologists, physiotherapy, occupational therapy,
- importance of specialist centres, MDT and interdisciplinary communication, especially with orthopaedic colleagues,

INTERMEDIATE

Should demonstrate knowledge of

- pathophysiology of degloving injuries and their classification.

- management of specific injuries e.g. crush and degloving,
- range, indications and principles of surgical options for soft tissue reconstruction: direct closure, skin graft, local and free flaps,
- options of bone fixation, including internal versus external fixation.

ADVANCED

Should demonstrate knowledge of

- role of major trauma centres,
- management of multiply injured patient,
- factors determining decision making in choice of flaps and tissue for soft tissue reconstruction.

Clinical Skills

BASIC

Should demonstrate ability to

- take a focused history for lower limb injury,
- clinically assess and undertake non-operative management of acute injury,
- recognise life-threatening injuries,
- examine to including assessment of severity of injury,
- assess vascular status,
- assess for the presence of compartment syndrome.

INTERMEDIATE

Should demonstrate ability to

- examine neurological status of limb,
- apply the management algorithms pertinent to the conditions covered in this module.

ADVANCED

Should be able to demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning pertaining to lower limb injury.

Technical Skills and Procedures

BASIC

Should be able to perform

- application of appropriate dressings in emergency room,
- reduction of fracture in emergency department,
- application of a plaster cast.

INTERMEDIATE

Should be able to measure compartment pressures and interpret results.

ADVANCED

Should be able to stabilise associated injuries and bleeding.

Module 2: Debridement, stabilisation and compartment syndrome

Objective: 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.

Knowledge

BASIC

Should demonstrate knowledge of

- principles of fracture management,
- anatomy of lower limb,
- on-table imaging techniques and their interpretation,
- safe access incisions,
- the importance of tissue sampling,
- temporary wound dressings,
- pathophysiology of compartment syndrome.

INTERMEDIATE

Should demonstrate knowledge of

- anatomy of perforators,
- principles and management of fractures and the relevance to subsequent soft tissue reconstruction,
- monitoring and interpretation of results of raised compartment pressures

ADVANCED

Should demonstrate knowledge of

- principles of bone debridement,
- microbiology of open fracture injuries,
- characteristics of defects that can be closed primarily at the initial debridement and the techniques available,
- controversies of delayed diagnosis of compartment syndrome

Clinical Skills

BASIC

Should demonstrate ability to

- assess fractures clinically,
- manage wounds in various locations on the lower limb,
- apply plaster splints,
- apply temporary dressings – negative pressure and antibiotic bead pouch,
- measure compartment pressures.

INTERMEDIATE

Should demonstrate ability to

- manage more complex fractures,
- formulate treatment plan for degloving injuries, especially multiplanar degloving.

ADVANCED

Should demonstrate ability to recognise those injuries that would benefit from primary amputation.

Technical Skills and Procedures

BASIC

Should be able to perform

- appropriate pre-wash and prep,
- systematic wound debridement under tourniquet control,
- wound extension along fasciotomy lines,
- application of temporary dressing.

INTERMEDIATE

Should be able to perform

- identification of tissues that can be preserved,
- adequately debridement of the injured soft tissues to achieve a stable wound approaching elective conditions,
- release four muscle compartments in leg in cases of compartment syndrome,
- intraoperative planning of future soft tissue reconstruction in conjunction with orthopaedic team and ensure appropriate bone fixation to facilitate this.

ADVANCED

Should be able to perform amputation of non-salvageable limbs

Module 3: Soft tissue reconstruction

Objective: Acquire competence in the planning and execution of appropriate soft tissue cover of open tibial fractures

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of perforators and angiosomes – relevant to planning of local flaps,
- zone of injury
- anatomy of free flaps suitable for lower limb reconstruction with the advantages and disadvantages of each, and the appropriate use of each option.

INTERMEDIATE

Should demonstrate knowledge of

- options available for fracture fixation and tailoring soft tissue management accordingly,
- planning and prioritising treatment within an MDT setting.

ADVANCED

Should demonstrate knowledge of

- principles and detailed management of more complex injuries, including multilevel and bilateral lower limb injuries.,
- the surgical management of bone and soft tissue reconstruction,
- principles of circular frames and bone transport,
- controversies of fasciocutaneous versus muscle flaps for soft tissue coverage of open fractures,
- angiographic abnormalities when planning reconstruction.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess soft tissue defects demonstrating recognition of injury patterns,
- use simple management techniques including use of appropriate dressings,
- use appropriate antibiotics at definitive wound closure,
- plan both local and free flap reconstruction appropriately for defect,
- co-ordinate soft tissue reconstruction in conjunction with orthopaedic team.

INTERMEDIATE

Should be able to

- plan management algorithms for the common injuries covered in this module,
- plan logical step-by-step planning of complex cases in conjunction with orthopaedic surgeons.

ADVANCED

Should demonstrate ability to

- plan management algorithms for the injuries covered in this module including complex injuries,
- plan management and reconstruction for the more complex soft tissue defect in patients requiring distraction lengthening of the skeleton.

Technical Skills and Procedures

BASIC

Should be able to perform

- direct closure,
- skin graft,
- temporary dressings – negative pressure and antibiotic bead pouch,
- exposure of recipient vessels in leg.

INTERMEDIATE

Should be able to perform

- nerve repair (direct),
- planning and raising appropriate fasciocutaneous flaps, both proximally and distally based,
- raising gastrocnemius muscle flap for proximal third/knee defects,
- performing most steps in the raising and anastomosing of free flaps,
- harvesting of vein graft

ADVANCED

Should be able to perform

- raising and anastomosing ALT, LD and radial forearm free flaps under supervision,
- harvesting a free fibula flap.
- nerve repair using sural nerve graft.
- using interposition vein grafts to perform anastomoses outside zone of injury.

Module 4: Vascular injuries and amputation

Objective: Acquire competence in the diagnosis and management of all vascular injuries to the lower limb.

Acquire competence in the recognition and management of patients requiring early and delayed amputations.

Acquire understanding of the impact of amputation level on subsequent rehabilitation and detailed knowledge of the rehabilitation regimens for patients requiring amputation.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of vasculature, including well-known variations e.g. peronea magna,
- response of vessels to injury and repair,
- primary management of vascular injuries and the devascularised limb,
- appropriate use of investigations,
- timing of surgery for acutely ischaemic limb,
- indications for amputation and the levels,
- rehabilitation of amputation patients.

INTERMEDIATE

Should demonstrate knowledge of

- role of vascular shunts,
- role of angiography,
- techniques of vessel repair,
- challenges for primary amputation.,
- how to deal with the nerves during amputation and the need for a myodesis,
- role of adductor myodesis for transfemoral amputation.

ADVANCED

Should demonstrate knowledge of

- methods for secondary amputation for infection, failed reconstruction etc.,
- how to manage the revascularised limb post-operatively,
- pharmacological and non-pharmacological methods for the relief of pain, including phantom limb and neuropathic pain.
- requirements of a good amputation stump to allow proper prosthesis fitting,
- role of fillet of limb (foot) technique,
- knowledge of need to reconstruct large veins proximal to trifurcation.

Clinical Skills

BASIC

Should demonstrate ability to

- control bleeding.

- interpretation of angiograms.

INTERMEDIATE

Should demonstrate ability to

- clinically assess and prepare management algorithms for the conditions covered in this module,
- counsel a patient for limb amputation.

ADVANCED

Should demonstrate ability to

- clinically assess complex injuries and make decisions on subsequent management,
- interpret investigations and formulate management plan in secondary amputation e.g. CT, angiography etc.,
- manage iatrogenic vessel injury.

Technical Skills and Procedures

BASIC

Should be able to perform

- exposure of vessels,
- insertion of shunts,
- harvesting vein graft,
- application of skin graft to amputation stump if required.

INTERMEDIATE

Should be able to perform

- vein graft for vascular injury,
- uncomplicated transtibial amputation,
- uncomplicated through knee and transfemoral amputation.

ADVANCED

Should be able to perform

- repair of complex vessel defect,
- continuation to suitable reconstruction of revascularised limb if appropriate,
- modification of skin flaps for amputation due to complex soft tissue injury,
- fillet of foot for amputation where soft tissue is deficient.

Module 5: Complications

Objective: Acquire competence in the diagnosis and management of both bone and soft tissue complications and recognition of the need for multidisciplinary management.

Knowledge

BASIC

Should demonstrate knowledge of

- consequences of infection following trauma and surgery,
- complications of free flap surgery,
- complications following the use of local flaps,
- those complications which require referral to specialist centres.

INTERMEDIATE

Should demonstrate knowledge of the management of all complications following soft tissue reconstruction including recognition of skeletal complications.

ADVANCED

Should demonstrate knowledge of

- basic science and evidence-base underpinning the management of complications,
- orthopaedic principles of managing delayed union and non-union

Clinical Skills

BASIC

Should demonstrate ability to

- undertake clinical assessment of complications and in particular recognise a compromised free or local flap, in conjunction with general patient parameters.
- use relevant adjunctive techniques such as ultrasound.

INTERMEDIATE

Should demonstrate ability to

- clinically assess and plan management algorithms for the conditions covered in this module,
- use a range of free flap monitoring techniques.

ADVANCED

Should demonstrate ability to

- undertake detailed assessment of, and advise on, complex problems including reconstruction/salvage of the limb if primary reconstruction has failed,
- analyse and advise on modifications needed to standard therapy regimens to address specific complications.

Technical Skills and Procedures

BASIC

Should be able to perform

- washout of haematoma/collection.
- application of leeches to flap tip with venous congestion.
- simple debridement of non-viable flap and appropriate application of temporary dressing.

INTERMEDIATE

Should be able to take back free flap to theatre with consultant assistance.

ADVANCED

Should be able to perform

- salvage or amputation of limb following flap failure,
- bone debridement in conjunction with orthopaedic surgeons.
- raising flaps to assist orthopaedic team for skeletal revision surgery including cancellous bone graft

Module 6: Paediatric injuries and outcome measures

Objective: 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.

Knowledge

BASIC

Should demonstrate knowledge of

- principles of management of children's injuries – skeletal and soft tissue – and appreciate differences from adults,
- normal growth and development, in particular the importance of growth plates,
- outcome measures such as Sickness Impact Profile (SIP),

- Short Form-36 (SF36) and Enneking score. Recognition of the need for specialist centres for revision surgery.

INTERMEDIATE

Should demonstrate knowledge of

- management of open lower limb injuries in children.
- how to apply outcome measures to practice and interpret published work, including limitations.

ADVANCED

Should demonstrate knowledge of

- management of paediatric lower limb injuries and the specific bone and soft tissue considerations needed with regard to growth,
- controversies regarding paediatric open lower limb injuries,
- how to plan and undertake an outcome study and audit outcomes for lower limb trauma.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess the injured child,
- communicate and liaise with parents,
- work and communicate within the relevant multidisciplinary team (MDT),
- recognise non-accidental injury.

INTERMEDIATE

Should demonstrate ability to plan management algorithms for the paediatric patient with lower limb injury.

ADVANCED

Should demonstrate ability to

- use skills of analysis and diagnostic synthesis, judgement, and surgical planning,
- in respect of the child, to advise regarding timing of reconstruction and effect of growth on reconstructive surgery previously performed,
- provide detailed advice on the treatment pathway, including interpretation of specialist imaging, within the context of the relevant MDT.

Technical Skills and Procedures

BASIC

Should be able to stabilise the child with lower limb injury for safe transfer to specialist centre.

INTERMEDIATE

Should be able to perform primary debridement and application of temporary wound dressings in theatre.

ADVANCED

Should be able to perform appropriate reconstruction of soft tissue defect including all the techniques available.

ONCOPLASTIC 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

Module 1: Basic Sciences and Breast Assessment

- Basic sciences - embryology, development, anatomy, physiology and genetics, stem cell biology, biology of scarring and wound healing; Management of abnormal scars
- Breast assessment - examination, investigations including imaging and biopsy techniques

Objective: Acquire competence in basic sciences pertinent to the breast and competence in clinical diagnosis and investigation

Knowledge

BASIC

Should demonstrate knowledge of

- topographical and segmental anatomy of the breast, vascular neuronal and lymphatic supply / drainage of breast, anatomy of chest wall, abdomen and axilla,
- lymphatic system physiology,

- embryology of breast,
- endocrine physiology and endocrine effects on the breast at puberty, pregnancy, lactation, menopause and in mastalgia,
- effect of hormonal therapeutics on the breast (OCP, HRT, SERM's & AI's)

INTERMEDIATE

Should demonstrate knowledge of

- developmental abnormalities - accessory nipples, accessory breast tissue
- concept and limitations of triple assessment

ADVANCED

Should demonstrate knowledge of breast aesthetics (including breast measurements), breast asymmetry, breast hyperplasia, hypoplastic breast syndromes including Poland's syndrome, chest wall deformities, associated limb abnormalities

Clinical Skills

BASIC

Should demonstrate ability to

- take a focused breast history related to any breast symptom,
- examine the breast and axilla,
- request component investigations of triple assessment, and ensure that results are discussed at breast MDT
- accurately record diagnostic findings.

INTERMEDIATE

Should demonstrate ability to

- arrange non-standard investigations required to assess breast symptoms following inconclusive initial results,
- interpret mammogram and ultrasound findings,
- interpret significance of cytological and histological biopsy reports,
- plan treatment algorithms for conditions in this module.

ADVANCED

Should demonstrate skills of analysis and diagnostic synthesis, judgement, and surgical planning.

Technical Skills and Procedures

BASIC

Should be able to perform

- free-hand and ultrasound guided lesion FNA
- free-hand core biopsy,
- punch biopsy of skin / nipple.

INTERMEDIATE

Should be able to perform

- surgical excision biopsy,
- ultrasound guided core biopsy.

ADVANCED

Should be able to perform vacuum assisted mammatome biopsy.

Module 2: Breast cancer

Objective: 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.

Knowledge

BASIC

Should demonstrate knowledge of

- epidemiology, histological classification and sub-types of invasive disease and DCIS,
- staging of breast cancer (UICC – TNM) ,
- prognostic factors (tumour and patient related) and implications for patient treatment recommendations Breast cancer MDT dataset,
- male breast cancer,
- development of the NHSBSP and current structure,
- breast screening delivery, patient flow, quality assurances and criticisms/limitations associated with the NHSBSP,
- principles of screening programmes within a population.

INTERMEDIATE

Should demonstrate knowledge of

- indications for primary medical therapy,
- rationale for neo-adjuvant chemotherapy / endocrine therapy including evidence and

limitations,

- indications and CI's for mastectomy and BCS and appropriate selection of axillary surgery (SLNB vs ALND),
- oncoplastic techniques (therapeutic mammoplasty / IBR/SSM & NSM),
- complications of surgery and their management,
- adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies (NICE clinical guidelines 80 & 81), specifically common regimes, indications, complications and side effects and supporting evidence,
- knowledge of „Adjuvant On-Line“,
- cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis,
- palliative treatment options for breast cancer.

ADVANCED

Should demonstrate knowledge of

- breast cancer genetics, specifically identified gene abnormalities and conditions associated with breast cancer (e.g. BRCA 1&2, TP53, Cowdens syndrome, Bananyan Zonanan Syndrome, CHEK2, HNPCC etc),
- relevance of family history in breast cancer, the role of the family history clinic and specific referral criteria. (NICE clinical guideline 41),
- models for estimating individual risk (Gail model, Bodicea, Klaus, Tyrer-Cuzick),
- non-surgical and surgical risk reduction strategies and supporting evidence,
- management and follow-up of non-malignant high risk breast lesions,
- current and important adjuvant and neo-adjuvant historical trials (clinical/surgical, chemotherapy, radiotherapy and hormonal),
- pregnancy associated breast cancer and its management.

Clinical Skills

BASIC

Should demonstrate ability to

- take a focussed breast history including presenting complaint, family history, elicit risk factors and identify co-morbidities important in treatment planning,
- examine the breast, nodal basins and relevant distant sites where metastasis suspected,
- initiate appropriate initial investigations as part of triple assessment,
- recognise the importance of, and work effectively within, the breast multidisciplinary team.

INTERMEDIATE

Should demonstrate ability to

- interpret mammogram and sonographic findings,
- recognise uncommon presentations of breast cancer (Pagets disease, inflammatory carcinoma),
- assess and manage patients presenting with locally advanced disease,

- recognise where further mammographic views or MRI may be required and request these appropriately,
- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients in conjunction with dedicated BCN.

ADVANCED

Should demonstrate ability to

- interpret MRI findings and use these in treatment planning,
- undertake skilful discussion of cancer diagnosis with patients,
- discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent,

Technical Skills and Procedures

BASIC

Should be able to perform

- appropriate pre-op skin prep and draping and antibiotic prophylaxis,
- palpable excision biopsy, palpable wide local excision,
- sentinel lymph node biopsy, dual modality and blue dye only,
- node sample in centres where SNB not employed,
- simple mastectomy and re-excision to clear margins

INTERMEDIATE

Should be able to perform

- wire / radiologically-localised excision of impalpable lesion,
- skin-sparing mastectomy,
- axillary lymph node dissection (level 3) both primary and delayed.

ADVANCED

Should be able to perform

- axillary lymph node dissection for disease recurrence,
- skin and nipple preserving mastectomy,
- therapeutic mammoplasty, IBR procedures appropriate to parent speciality.

Module 3: Benign breast conditions

Objective: Acquire competence in the diagnosis and management of benign breast conditions.

Knowledge

BASIC

Should demonstrate knowledge of

- pathophysiology and presentation of mastalgia, fibroadenoma, breast cysts, papilloma, benign nipple discharge, duct ectasia, periductal mastitis, mammary duct fistula and breast sepsis (lactational and non-lactational) including microbiology
- Phylloides tumour,
- gynaecomastia,
- involutional change of the breast.

INTERMEDIATE

Should demonstrate knowledge of

- relationship between systemic disorders, medication and lifestyle factors with breast symptoms (hyper-prolactinaemia, gynaecomastia, OCP, smoking),
- benign pregnancy and lactational lesions of the breast (lactational adenoma, galactocoele).

ADVANCED

Should be able to describe association between specific high-risk benign breast conditions with associated increased breast cancer risk.

Clinical Skills

BASIC

Should demonstrate ability to

- take focussed breast history, eliciting factors associated with benign breast disease,
- examine breast and axillary
- examine systems associated with benign breast disease (endocrine, abdominal),
- initiate appropriate investigations / triple assessment where indicated

INTERMEDIATE

Should demonstrate ability to

- formulate management plan of benign breast pathology included in this module,
- interpret investigation findings and understand how they differ from findings in malignant disease.

ADVANCED

Should demonstrate skills of analysis and diagnostic synthesis, judgement and surgical planning for the conditions specified in this module.

Technical Skills and Procedures

BASIC

Should be able to perform

- free hand aspiration / surgical drainage of breast abscess,
- aspiration of cyst,
- benign lump excision.

INTERMEDIATE

Should be able to perform

- wire / image guided excision of lesion,
- ultrasound guided aspiration abscess,
- microdochectomy,
- major duct excision,
- fistula surgery.

ADVANCED

Should be able to perform

- ductoscopy,
- minimal access surgery,
- nipple eversion techniques.

Module 4: Reconstruction implant-based techniques

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

Knowledge

BASIC

Should demonstrate knowledge of

- indications and CI's to implant based reconstruction,
- surgical anatomy of implant / expander based reconstructive procedures,
- alloplastic materials and tissue interface,
- dermal xenografts.

INTERMEDIATE

Should demonstrate knowledge of

- advantages and disadvantages in comparison to autologous based reconstruction,

- range of devices available,
- implant infection and management,
- implant extrusion,
- capsular contracture,
- aetiology, classification, role of DXT and management, - historical development and controversies.

ADVANCED

Should demonstrate knowledge of

- staged procedures – single and two stage: advantages and disadvantages,
- adjunctive biological technologies,
- outcome of implant based reconstruction,
- relevant literature

Clinical Skills

BASIC

Should demonstrate ability to

- assess suitability for implant based reconstruction and alternatives,
- identify pre-operative factors which can be optimized prior to surgery (smoking, systemic disease).

INTERMEDIATE

Should demonstrate ability to consent patients describing full range of potential complications, and set realistic expectations.

ADVANCED

Should demonstrate ability to select appropriate implants / expanders for patients, recognise post-operative complications and formulate associated management plans.

Technical Skills and Procedures

BASIC

Should be able to

- orient devices and prepare appropriately,
- explain issues regarding antibiotics, drains, changing gloves,
- use electric operating tables,
- protect pressure areas,
- prevent nerve injuries / neurapraxia.

INTERMEDIATE

Should be able to perform

- creation and closure of sub-pectoral pocket,
- subpectoral pocket including total sub-muscular cover,
- two stage reconstruction using TEX and subsequent exchange for FVI.

ADVANCED

Should be able to perform

- preoperative marking of patient,
- single staged reconstruction using FVI and dermal xenograft sling,
- inferior dermal sling to achieve implant cover.
- identification and correction of aesthetic deficiencies as secondary procedures,
- nipple reconstruction techniques (see under Module 5).

Module 5: Reconstruction with autologous tissue-based techniques

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

Knowledge

BASIC

Should demonstrate knowledge of

- classification of flaps (random versus axial / muscle flap - Mathes and Nahai / type of tissue being transferred)
- factors affecting outcome in flap surgery (patient related, operative, adjuvant therapy related),
- principles of flap surgery (replace “like with like”, reconstructive units, back-up plan and “life boat”, donor site considerations),
- principles of microsurgery.

INTERMEDIATE

Should demonstrate knowledge of

- relevant surgical anatomy and neurovascular supply of flaps used in breast reconstruction (LD, Abdominal wall, I/S GAP, TUG, TDAP),
- concept of angiosomes, specifically in reconstructions using abdominal free flaps,
- indications and CI's for IBR and DBR – pre-operative factors to be considered in decision making,
- tissue effects of DXT. Psychological impact of IBR and DBR,
- advantages and disadvantages in comparison with implant based reconstruction,
- pre-operative investigations for specific flaps,

- complications of autologous tissue reconstruction including donor site morbidity.

ADVANCED

Should demonstrate knowledge of

- long term outcomes of breast reconstruction
- assessment of outcome (clinical / PROMs),
- reconstruction in prophylactic surgery,
- partial breast reconstruction,
- nipple reconstruction techniques,
- flap salvage and options following failure,
- lipomodelling in reconstruction (indications, complications and controversies – stem cells, mammographic follow-up).
- relevant literature.

Clinical Skills

BASIC

Should demonstrate ability to

- take history eliciting factors important for decisions regarding suitability / type of autologous reconstruction,
- maintain clear documentation in the notes in the post-operative period.

INTERMEDIATE

Should demonstrate ability to

- assess suitability for IBR vs DBR,
- discuss advantages and disadvantages of reconstruction - specifically setting of realistic expectation, reconstruction as a process, template in-patient stay and complications,
- describe importance of informed consent and joint decision making,
- manage complications of surgery in clinic (wound, seroma),
- manage patients appropriately in post-operative period.

ADVANCED

Should demonstrate ability to

- identify patients not suitable for autologous reconstruction (physical and psychological contraindications),
- undertake appropriate post-operative assessment of (free) flaps,
- plan algorithms for managing complications.

Technical Skills and Procedures

BASIC

Should be able to perform

- positioning of patient on operating table,
- protection of pressure areas,
- prevention of nerve injuries / neurapraxia,
- skin preparation, draping and antibiotic prophylaxis,
- selection / arrangement of appropriate level of post-operative care,
- use of electric operating tables.

INTERMEDIATE

Should be able to perform

- pre-operative marking of patient ,
- raising pedicled autologous flaps including latissimus dorsi.
- in-setting of flap.

ADVANCED

Should be able to perform

- preoperative marking up of patient,
- nipple reconstruction techniques (Nipple sharing procedures, local flaps, tattooing),
- raising pedicled autologous TRAM flap,
- free-flap techniques,
- microvascular anastomoses ,
- flap salvage for failing flaps,
- flap shaping techniques,
- flap revision techniques,
- lipomodelling for correction of resectional defects,
- lipomodelling in breast reconstruction.

Module 6: Aesthetic Surgery of the Breast

Objective: Acquire competence in the diagnosis, aesthetic assessment and safe management of all deformities and conformations of the breast, developmental and acquired, pathological and physiological. Acquire proficiency in all aspects of breast reconstruction and subsequent revisional procedures. Acquire facility in the psychological assessment of patients presenting for breast surgery.

Knowledge

BASIC

Should be able to demonstrate knowledge of

- applied and surgical anatomy of the breast, its blood, nerve supply and function,
- development of the breast and congenital deformity and variations of breast form and associated structures,
- hormonal control of the breast and its pathology, when deranged,
- breast physiology in pregnancy and lactation,
- benign pathologies of the breast,
- presentation, clinical features of breast cancer, its staging, prognosis and management pathways,
- effect of ionizing radiation on the breast and implants,
- planning incisions on the breast.
- closure and management of breast wounds.
- self-perception and self-consciousness in relation to breast conformation and proportion including the social and sexual dimensions,
- pathology of deranged self-image.

INTERMEDIATE

Should be able to demonstrate knowledge of

- content, structure, physical and biological properties of breast implants,
- spectrum of implants available and their applications,
- design, principles and applications of tissue expanders,
- nature, physiology and behaviour of implant capsules,
- management of capsular contractures.
- biology, implications, avoidance of and management of implant infection,
- various designs and approaches to breast augmentation and their applications.
- the issues surrounding breast size and its assessment.
- complications of breast augmentation and their management.
- various designs and patterns of breast reduction and mastopexy,
- complications and management of breast reduction/remodelling.
- presentation, management and complications of gynaecomastia.

ADVANCED

Should be able to demonstrate knowledge of

- assessment of envelope and volume in relation to breast asymmetry, both developmental and acquired,
- classification and management pathways of the tuberous breast,
- management pathways and choices in breast asymmetry,
- impact of breast reconstruction choices on symmetry,
- effect of time, ageing and pregnancy on breast asymmetry correction,
- various techniques of breast reconstruction, their applications, design and planning,
- complications of breast reconstruction,
- techniques for salvage of failed breast surgery,
- techniques for nipple reconstruction, including considerations of sequence and timing,
- features of dysmorphophobia,
- psychosexual dimension in aesthetic breast surgery.

Clinical Skills

BASIC

Should demonstrate ability to

- assess and undertake non-operative of the management of the acute surgical patient,
- take a targeted breast history,
- perform patient examination including breast examination with reference to aesthetic considerations.

INTERMEDIATE

Demonstrate knowledge of the management algorithms for the procedures covered in this section including investigations.

ADVANCED

Should be able to

- demonstrate skills of analysis and diagnostic synthesis, judgement, surgical planning,
- assess and accurately record aesthetic concerns about the breast,
- formulate management plans in relation to aesthetic interventions,
- clearly explain, consent and counsel potential patients for aesthetic breast surgery,
- assess the psychological suitability for aesthetic breast surgery and appropriately refer for expert psychological advice as necessary,
- undertake risk benefit analysis of non-pathological based surgery,
- deal with disappointment and postoperative dissatisfaction

Technical Skills and Procedures

BASIC

Should be able to perform

- planning, execution and closing incisions on the breast with reference to aesthetic principles and sub units.
- designing and conduction of excision of skin lesions of the breast,
- undertaking an aesthetic approach to removal of benign lesions of the breast,
- scar revision in aesthetic breast surgery

INTERMEDIATE

Should be able to perform

- correction of the inverted nipple (various techniques),
- bilateral breast augmentation by various routes, in various planes,
- Wise pattern bilateral breast reduction,
- vertical pattern bilateral breast reduction,
- bilateral mastopexy of periareolar, vertical and Wise patterns,

- excision of gynaecomastia, incorporating various forms of liposuction as appropriate.

ADVANCED

Should be able to perform

- correction of the spectrum of nipple deformities,
- unilateral or differential breast augmentation to attain symmetry,
- unilateral or asymmetric breast reduction in pattern or volume to attain symmetry,
- synchronous mastopexy and breast augmentation in several patterns,
- correction of tuberous breast by combinations of mastopexy, augmentation or tissue expansion,
- unilateral or differential mastopexy in pattern or extent to attain symmetry.
- revision procedures following previous aesthetic surgery of the breast.
- aesthetic surgery of the breast as above in patients with previous breast cancer or irradiation.
- fat grafting for minor deformities of the breast.

SARCOMA

Module:

Sarcoma

Objective: 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.

All plastic surgery trainees are expected to have knowledge and exposure to soft tissue sarcoma diagnosis and management.

Knowledge

BASIC

Should demonstrate knowledge of:

- anatomy of the trunk, pelvis, axilla, and limbs.
- osseous, muscular and neurovascular anatomy of the trunk and limbs
- vascular, neuronal and lymphatic supply / drainage of the head & neck, trunk and limbs, blood supply of the skin
- anatomy of perforators and angiosomes- relevant to planning of local flaps
- anatomy of free-flaps relevant to reconstruction of extremity and truncal defect following excisional sarcoma surgery

INTERMEDIATE

Should demonstrate knowledge of:

- aetiology, incidence and relative anatomical distribution
- pathology of primary soft tissue tumours and primary bone tumours
- common benign sarcoma like disorders- lipomas, vascular and congenital malformations, fibromatosis including desmoids
- specific history and diagnostic features (clinical and non-clinical) of bone and soft tissue sarcomas and their differential diagnoses
- patterns of spread of sarcomas
- classification of sarcoma
- grading and staging systems in current use
- relevant imaging modalities for different sarcoma
- methods for obtaining histological diagnosis
- guidelines for referral based on clinical suspicion (size symptoms etc.)
- diagnostic imaging of sarcoma including X-rays, CT, MRI, USS, PET- CT, and imaging-assisted diagnostic biopsy
- importance of correctly positioning biopsy access
- histology of the common sarcomas
- role of frozen section specimens
- immunocytochemistry and cytogenetic techniques

ADVANCED

Should demonstrate knowledge of :

- indications for different resection modalities in the management of sarcomas, e.g. marginal, wide, compartmentectomy etc
- current concept of extremity preserving surgery with adjuvant radiotherapy compared with past concepts of compartmentectomy and amputation to achieve acceptable local recurrence rates
- options for soft tissue reconstruction dependent of location and analysis of defect
- reconstructive options for chest wall defects involving multiple rib resection
- reconstructive options for abdominal wall defects
- role of radiotherapy in the management of sarcoma and therefore advantages and disadvantages of different reconstructive options
- role of chemotherapy in the management of soft tissue sarcomas
- neo-adjuvant versus adjuvant therapy
- follow-up schedule and appropriate imaging

Clinical Skills

BASIC

Should demonstrate ability to:

- elicit a focused history from patients presenting with soft tissue lump, musculoskeletal pain or imaging suspicious for sarcoma
- examine patient, assessing site, size, consistency and fixity of lumps and associated

- involvement of key anatomical structures
- examine extremity neurovascular status
- clinically assess soft tissue defects in order to guide reconstructive options

INTERMEDIATE

Should demonstrate ability to:

- interpret imaging as part of planning reconstructive options
- assess potential donor sites for reconstructive option
- plan both local and free flap reconstructions appropriate to defect
- formulate logical procedural plan for complex reconstructive surgery

ADVANCED

Should demonstrate ability to:

- work as a member of the multidisciplinary team and make appropriate referrals to related professionals.
- apply NICE guidelines, improving outcomes guidance and support peer review. support research and audit in local, national and international settings

Technical Skills and Procedures

BASIC

Should be able to perform:

- direct closure of wound
- harvesting and inseting of skin grafts
- raising of local fasciocutaneous flaps

INTERMEDIATE

Should be able to perform:

- raising gastrocnemius flap for coverage of proximal third tibial defects
- direct nerve and vessel repair
- harvesting of nerve and vein grafts
- arterial and venous anastomosis
- four compartment fasciotomy for complications of extremity surgery

ADVANCED

Should be able to perform:

- marginal excision of soft tissue sarcoma
- marginal excision of sarcoma from vital adjacent structures
- wide excision of soft tissue sarcoma

- skin excision in continuity with soft tissue tumour or elevation of viable skin flaps
- access incisions which preserve maximum vascularity to surrounding soft tissues
- compartmentectomy
- amputation at various levels of extremities involving sarcoma
- most steps in the raising and anastomosis of free flaps

SKIN ONCOLOGY

Modules:

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

Module 1: Basic Sciences

- Embryology, development, anatomy and physiology
- Skin assessment – examination, investigations including imaging and biopsy techniques

Objective: Acquire competence in the development, anatomy and physiology of the skin in relation to its surgery.

Acquire competence in the diagnosis, use of imaging and management of suspicious skin lesions

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of the skin-epidermal and dermal layers and appendigeal structures,
- embryology of the skin,
- histopathological appearance of skin,
- anatomy of the body surface, in particular the head and neck, hands, nails and feet,
- vascular, neuronal and lymphatic supply / drainage of the head & neck, trunk and limbs, blood supply of the skin,
- diagnostic imaging of skin neoplasia X-rays, CT, MRI, USS, PET-CT, and imaging assisted diagnostic biopsy,
- histology of the skin standard stains,
- immunocytochemistry and cytogenetic techniques ,
- common benign skin disorders-hidradenitis suppurativa, epidermal cysts, lipomas,

- vascular and congenital malformations,
- melanocytic naevi including giant, actinic lesions and epidermal/dermal lesions etc., risks of malignant transformation in chronic lesions, giant melanocytic naevi and Marjolin's ulcers,
- specific history and diagnostic features (clinical and non-clinical) of benign skin lesions (pigmented and non-pigmented), dysplastic naevi, lentigo maligna, melanoma and non-melanoma skin cancers (basal cell carcinoma and squamous cell carcinoma), dermatofibroma, keratoacanthoma, pilomatrixomata, actinic keratoses, Bowen's disease,
- clinical features of dermatitis artefacta, folliculitis, pyogenic granuloma, inflammatory skin conditions (hidradenitis and acne vulgaris), fungal skin lesions, lentiginos, angiomas,
- difference between telangiectasia and spider naevi,
- chronic wounds and pressure sores.

INTERMEDIATE

Should demonstrate knowledge of

- anatomy of special sites, the pelvis, epitrochlear and popliteal fossa, the triangular space of the back, the axilla, head and neck lymph node basins,
- anatomy and access for diagnostic biopsies when required,
- concepts and limitations of diagnostic techniques, dermoscopy, mapping biopsies, frozen sections,
- range, indications and principles of surgical options for surgical ablation of tumours of the skin,
- Mohs micrographic surgery,
- sentinel node biopsy,
- the role of the skin multidisciplinary team,
- diagnosis of lesions at difficult sites, subungual, large facial lesions, mucosal lesions, metastatic lesions,
- the range of dressings for open skin lesions/wounds.

ADVANCED

Should demonstrate knowledge of

- anatomy in particular for block dissections of the axilla, inguinal, iliac and ilioinguinal regions,
- functional and surgical anatomy of the face, head and neck,
- the surgical options for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips), the trunk, the upper lower and lower limb,
- the range of dressings available for complex wounds/ulcers.

Clinical Skills

BASIC

Should demonstrate ability to

- take focused skin history related to any skin lesion and skin symptoms,

- use the magnifying glass, lighting, dermoscopy using polarised and non-polarised light,
- plan non-operative management of small open wounds,
- use non-operative methods of hemostasis in the acutely bleeding wound/ulcer,
- recognise life threatening injuries both airway and vascular,
- undertake resuscitation skills as laid out in ATLS,
- examine of the head & neck, upper limb, lower limb, abdomen and pelvis,
- assess lesions on the face, head and neck, hand, arm, trunk and lower limb,
- examine regional lymph nodes,
- organise discussion of cases at clinical meetings,
- accurately record diagnostic findings,
- use the current minimum dataset for skin cancers,
- use current databases and audit and peer review tools according to published requirements and guidelines.

INTERMEDIATE

Should demonstrate ability to

- assess the chronic ulcer/wounds,
- recommend additional investigations to assess symptoms following inconclusive initial results,
- interpret, CT and MRI scans,
- interpret and discuss cytological and histological biopsy reports.

ADVANCED

Should demonstrate ability to

- interpret any scans performed in particular PET, PET-CT and lymphoscintigraphy,
- assess and formulate management plan for the large complex wound,
- formulate appropriate and timely management, investigations, treatment and follow up plan for a patient all types of benign and malignant skin lesions

Technical Skills and Procedures

BASIC

Should be able to perform

- airway management using the techniques specified by ATLS,
- provide circulatory support using the techniques specified by ATLS,
- free-hand and ultrasound guided lesion biopsy
- FNA of suspected lesions, punch biopsy,
- harvesting of cells for cytological examination for fungus or malignancy,
- aspiration of seromas or cystic skin lesions,
- excision biopsy of undiagnosed skin lesions smaller than 1cm in size including those suspicious for malignancy and direct closure techniques,
- application of the appropriate dressings in open wounds,
- application of the appropriate dressings in infected skin wounds

INTERMEDIATE

Should be able to perform

- surgical incision / excision biopsy of lesions at difficult sites (any size if periorbital, nasal, sole of the foot or hands and larger lesions on the pretibial region),
- biopsy of subungual lesions,
- use of Mohs micrographic surgery,
- application of a negative pressure dressing.

ADVANCED

Should be able to perform

- sentinel lymph node biopsy to include interpretation of result
- surgical incision / excision biopsy of large suspicious skin lesions (greater than 1cm in size) including large facial lesions,
- surgically debride and dress large complex wounds.

Module 2: Primary treatment of skin-related neoplasia

Objective: Acquire competence in the diagnosis, assessment and management of all types of primary skin-related neoplasia.

Knowledge

BASIC

Should demonstrate knowledge of

- epidemiology ,
- histological classification (basal cell carcinoma / squamous cell carcinoma / Melanoma / Merkel cell/ Porocarcinoma/ Adnexal and pre-cancerous lesions),
- potential differential diagnosis skin lesions,
- staging of skin cancer, (histological classifications, TMN, AJCC and current),
- prognostic factors (tumour and patient related) and implications for patient treatment recommendations
- implications of the occupational, family history, sun exposure history and immunosuppression,
- principles of screening programmes within a population,
- genetic counselling and referral indications,
- margins of excision for different histological types of basal cell carcinomas, Squamous cell carcinomas, Bowen's disease, in-situ disease, dermatofibroma and benign dysplastic skin lesions.
- peer review and NICE guidelines in treatment of melanoma and non-melanoma skin cancers (melanoma, SCC, Sarcoma, Bowen's, AK, Kaposi's sarcoma and BCC's) in particular margin recommendations,
- the role of the MDT,
- peer review and MDM documentation,

INTERMEDIATE

Should demonstrate knowledge of

- margins of excision of different stages of melanoma, porocarcinoma, Merkel Cell carcinoma, Dermatofibroma sarcoma Protuberans, fibrosarcoma and sarcoma,
- indications for non-surgical treatment (Photodynamic therapy-PDT, Cryotherapy, laser and topical therapies)
- indications for sentinel lymph node biopsy and other prognostic investigations,
- adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies particularly for melanoma,
- cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis,
- palliative treatment options for skin cancer.

ADVANCED

Should demonstrate knowledge of

- association between specific high risk benign skin conditions with associated increased skin cancer risk,
- genetic conditions in skin cancer,
- melanoma tumour biology,
- controversies that have existed around sentinel lymph node biopsy, its history, origins and basis of sentinel lymph node biopsy,
- theories of melanoma spread - incubator versus marker theory,
- important adjuvant and neo-adjuvant historical and current national and international trials (clinical/surgical, chemotherapy, radiotherapy, laser, hormonal and biological).

Clinical Skills

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 with skin cancer.

Technical Skills and Procedures

BASIC

Should be able to perform

- excision biopsy of lesion and incision biopsy of skin lesions-when indicated,
- Fine Needle Aspiration-FNA / core sample of lymph nodes,
- wider excision of skin tumours with the advised margins on the trunk, leg and arm,
- local flap reconstruction (rotation / transposition / advancement),
- optimum placement of incisions allowing for possible secondary surgery and future block dissections,
- explain the rationale for use of split and full thickness skin grafts and artificial skin replacements,
- pre-op skin prep and draping and antibiotic and venous thromboembolism prophylaxis,
- node sample in centres where SNB is not employed,

INTERMEDIATE

Should be able to perform

- wider excision of lesions with the advised margin on the skin of the head and neck, face, genitalia and hand,
- head and neck, truncal and limb sentinel lymph node biopsy, - level I, II and III axillary dissections and inguinal block dissection,
- regional flaps - rotational, advancement,.

ADVANCED

Should be able to perform

- pelvic or head and neck block dissection,
- reconstruction with regional and distant flaps,

- free flap surgery,
- reconstruction of aesthetic units (nose / eyelids / ears / lips) and special sites – nose, digits, eyes, genitalia and ears,
- oculoplastic techniques

Module 3: Treatment of recurrent and chronic skin tumours

Objective: Acquire competence in the diagnosis, assessment, investigation and management of all types of recurrent and metastatic skin cancers.

Knowledge

BASIC

Should demonstrate knowledge of

- epidemiology and genetics of skin,
- basic understanding of familial syndromes,
- genes/oncogenes associated with skin cancer,
- margins of excision for metastatic lesions including national guidance,
- types of cancer – recurrences, new primaries, related malignancies,
- immunosuppressed patients,
- syndromic patients, ie, Gorlin's, Cowden's, polyposis coli, melanosis, xeroderma pigmentosum, giant melanocytic naevi, skin conditions in immunocompromised patients,
- TNM Staging of skin cancer,
- prognostic factors (tumour and patient related) and implications for patient treatment recommendations,
- rationale and types of imaging for prognostic and staging information,
- biopsies, FNA, USS, X-Ray, CT, MRI, PET-CT, SPECT-CT and SNB,
- cancer network guidelines in treatment of recurrent skin cancers,
- functioning of the MDT,

INTERMEDIATE

Should demonstrate knowledge of

- indications for non-surgical treatment,
- anatomy and techniques for excision and closure of block dissections,
- adjuvant therapies including chemotherapy, radiotherapy, endocrine therapy and biological therapies,
- Mohs micrographic surgery, isolated limb infusions, ECT, isolated limb perfusion,

- CO2 laser ablation and minimally invasive techniques including laparoscopic and robotic surgery,
- cancer biology – specifically with regards to hormonal and growth factors / receptors and tumour metastasis,
- palliative treatment options for the skin cancer patient,
- management of the complex wound,
- hospice care

ADVANCED

Should demonstrate knowledge of

- appropriate use of and pitfalls of frozen section,
- association between specific high risk benign skin conditions with associated increased skin cancer risk,
- important adjuvant and neo-adjuvant historical and current national and international trials (clinical/surgical, chemotherapy, radiotherapy, hormonal and biological),
- role of Human Papilloma Virus-HPV, in cancer aetiology

Clinical Skills

BASIC

Should demonstrate ability to

- take focused skin related history,
- elicit factors associated with malignant non-skin related neoplasia,
- examine skin of entire body surface for additional primary tumors,
- examine all sites for regional lymphadenopathy,
- initiate appropriate investigations,
- work effectively within the skin cancer multidisciplinary team,
- manage the non-operative aspects of the chronic wound including pressure sores

INTERMEDIATE

Should demonstrate ability to

- interpret CT, MRI & PET scans,
- assess and manage patients presenting with locally advanced disease,
- recognise where further pathology or radiology may be required and request these appropriately,
- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues.

ADVANCED

Should demonstrate ability to

- formulate management plan using skills of analysis and diagnostic synthesis, judgement in particular for the patient with multiple co-morbidities,
- discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent,

- discuss a skin cancer diagnosis and prognosis with patients,
- communicate skilfully with patients and with other members of the clinical team,

Technical Skills and Procedures

BASIC

Should be able to perform

- incision biopsy of lesions,
- excision biopsy of lesions,
- FNA / core sample of lymph nodes,
- undertaking local flap reconstruction (rotation / transposition / advancement).

INTERMEDIATE

Should be able to perform

- cervical sentinel lymph node biopsy
- regional lymph node dissections of the axilla and groin,
- hernia repair
- regional flaps, pedicled reconstructions
- use of dermal substitutes for wound resurfacing

ADVANCED

Should be able to perform

- pelvic and head and neck dissections,
- free flap surgery,
- reconstruction of aesthetic units (nose / eyelids / ears / lips), isolated limb infusion,
- isolated limb perfusion,
- mapping biopsy techniques such as Mohs micrographic surgery.

Module 4: Reconstructive techniques for skin surgery

Objective: Acquire competence in the planning, execution and management of appropriate soft tissue reconstruction of skin defects.

Knowledge

BASIC

Should demonstrate knowledge of

- anatomy of perforators and angiosomes – relevant to planning of local, regional and distal flaps,
- anatomy of local, regional and free flaps suitable for head & neck reconstruction,
- classification of flaps (random v axial / muscle flap - Mathes and Nahai / type of tissue

- being transferred),
- advantages and disadvantages of local, regional and free flaps in the patient post skin tumour excision,
- use of local, regional and free flaps in the head & neck/upper limb/leg/chest and trunk,
- factors affecting outcome in flap surgery (patient related, operative, adjuvant therapy related),
- principles of flap surgery (replace “like with like”, reconstructive units, back-up plan and “life boat”, donor site considerations),
- principles of microsurgery

INTERMEDIATE

Should demonstrate knowledge of

- planning and prioritising treatment within the head & neck MDT setting,
- interpreting angiographic abnormalities when planning reconstruction, surgical anatomy and neurovascular supply of flaps used in head & neck reconstruction,
- indications for preoperative investigations for specific flaps,
- airway management according to techniques specified in ATLS
- post-operative flap monitoring techniques,
- complications of autologous tissue reconstruction including donor site morbidity,

ADVANCED

Should demonstrate knowledge of

- factors determining decision making in choice of flaps and tissue for soft tissue defect reconstruction,
- factors determining decision making in choice of flaps and tissue for reconstruction of particular units of the head & neck (nose / eyelids / ears / lips), factors determining appropriate surgical ablation techniques,
- range, indications and principles of surgical options and non-operative techniques,
- long term outcomes of different types of reconstructions,
- assessment of outcome,
- flap salvage and options following failure.

Clinical Skills

BASIC

Should demonstrate ability to

- clinically assess the soft tissue defect,
- take history, eliciting factors important for decisions regarding suitability / type of reconstruction,
- perform contemporaneous and appropriate record keeping.
- manage uncomplicated wounds using a range of dressings,
- plan both local and free flaps resurfacing of soft tissue defects,
- co-ordinate soft tissue reconstruction in conjunction with ablative team,
- manage the post Moh’s patient,

INTERMEDIATE

Should demonstrate ability to

- discuss advantages and disadvantages of reconstructive options with patients specifically setting realistic expectations, advising on reconstruction as a process, and detailing possible complications,
- take informed consent from patients and participate in joint decision making,
- arrange appropriate level of post-operative care.
- manage complications of surgery appropriately in post-operative period and in the clinic.

ADVANCED

Should demonstrate ability to

- clinically assess complex reconstructive requirements and formulate appropriate management plan,
- interpret investigations as part of formulating management plan.

Technical Skills and Procedures

BASIC

Should be able to perform

- positioning of patient on operating table.,
- protection of pressure areas,
- prevention of nerve injuries / neurapraxia,
- pre-operative marking of patient, skin preparation, draping, antibiotic prophylaxis and thromboprophylaxis,
- split skin grafting, full thickness skin grafting
- range of local flaps

INTERMEDIATE

Should be able to perform

- reconstruction of the scalp and management of chronic scalp wounds and the unstable scalp,
- raising pedicled autologous flaps,
- in-setting of flap,
- harvesting chondrocutaneous, cartilage, composite grafts and vein grafts.

ADVANCED

Should be able to perform

- 3D reconstruction of specialised structures,
- reconstruction of the periorbital structures/ear and nose,

- microvascular anastomoses,
- flap salvage for failing flaps,
- flap shaping techniques,
- flap revision techniques

Module 5: Scarring, wounds and other surgical conditions of the skin

Objective: 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

Knowledge

BASIC

Should demonstrate knowledge of

- skin anatomy,
- aetiology and related benign conditions,
- hypertrophic scars, keloids, dermatofibroma, epidermal cysts, lentigines, actinic keratoses, xanthelasmata, lipomas,
- history and examination of the skin.

INTERMEDIATE

Should demonstrate knowledge of

- dermoscopy and imaging techniques of the skin,
- Marjolin's ulcer, pilomatrixoma, DFSP, hidradenitis suppurativa, acne scarring, inflammatory skin conditions, adult vascular malformations.

ADVANCED

Should demonstrate knowledge of

- consequences of nerve resection and other functional deficits after resection of tumour,
- lymphoedema,
- complex wounds,
- psychological and social issues that can affect the skin cancer patient,
- reconstructive techniques for pressure sores and large complex wounds.

Clinical Skills

BASIC

Should demonstrate ability to

- assess the skin using dermoscope,

- recognise infection, induration, lymphoedema, seroma, post radiotherapy recurrence in complex scars.

INTERMEDIATE

Should demonstrate ability to

- assess surgical scar and deploy non-operative techniques for scar improvement,
- injection techniques for scar improvement,
- manage functional and psychological effects of post cancer resection surgery,
- participate in multidisciplinary management of patients with large, chronic vascular malformations.

ADVANCED

Should demonstrate ability to

- undertake nerve defect assessments,
- make decisions and analyse the options for aesthetic improvement in the surgically-scarred cancer patient including advance communications skills.

Technical Skills and Procedures

BASIC

Should be able to perform

- debulking of keloids,
- excision of benign lesions,
- shave excisions,
- laser ablation of skin lesions,
- incision and curettage for active hidradenitis suppurativa.

INTERMEDIATE

Should be able to perform

- botulinum toxin and filler injections,
- scar release,
- z-plasty,
- reconstruction post excision of scars,
- surgical options of laser,
- excision or sclerotherapy for vascular malformations,
- fat grafting.

ADVANCED

Should be able to perform

- laser resurfacing,

- rejuvenation of the skin,
- reconstructive techniques for advanced and crippling hidradenitis suppurativa,
- reconstruction techniques for pressure sores and large complex wounds, lymphatic reconstruction/anastomosis,
- surgical excision of lymphoedema.

Module 6: Multidisciplinary team workings, allied professionals, palliative care and follow up regimes, trials, research and national guidelines

Objective: 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

Knowledge

BASIC

Should demonstrate knowledge of

- guidelines for the diagnosis, treatment and follow up of BCC, SCC's, Bowen's, Melanoma, DFSP and Sarcoma,
- surgical and non-surgical options.

INTERMEDIATE

Should demonstrate knowledge of

- management of the patient with recurrent disease (surgical, non-surgical and radiotherapy options),
- stages of bereavement that can be associated with loss of body image and the clinical and psychological supports that can be put in place to assist the patient cope with that loss.

ADVANCED

Should demonstrate knowledge of

- current trials, ethics, research and pathways to develop trials/research within a service,
- impact of disfigurement,
- consequences of an altered appearance, what it involves psychologically and socially, and the impact of an individual's body image on their life and that of their family,
- process by which an individual can successfully adjust to disfigurement and how the multidisciplinary team can assist with that process.

Clinical Skills

BASIC

Should demonstrate ability in using communication and referral pathways to specialist MDM's

INTERMEDIATE

Should demonstrate ability to

- interpret lymphoscintigraphy, CT, MRI, PET, FNA, USS and pathology minimum dataset,
- develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues,
- apply psychological assessment tools for evaluation of psychological needs (patient questionnaires).

ADVANCED

Should demonstrate ability to

- formulate management plan using skills of analysis and diagnostic synthesis, judgement,
- discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and taking informed consent,
- develop the skills to arrange patient-centered care with patient as partner in the process,
- provide realistic information and guiding patient decision-making regarding choices available and timing of those treatments,
- manage and lead the multi-disciplinary teams in respect of provision of psycho- social care,
- arrange the care pathway that supports an individual to successfully adjust to disfigurement through giving the individual and family specific life-skills -these include the patient being provided with information about their condition and its treatment, developing a positive outlook/belief system, learning to cope with their feelings, exchanging experiences with others who've "been there" and social skills training to manage other people's reactions.

Technical Skills and Procedures

BASIC

Should be able to perform

- excision of small skin recurrences / in transit metastases,
- recording surgical procedures,
- handling of surgical specimens,
- orientation and appropriate carriage medium for skin specimens,
- performing FNA.

INTERMEDIATE

Should be able to perform

- treatment of painful metastatic lesions and recurrences by surgical resection/laser resection of metastatic lesions,
- groin and axillary dissections,
- fasciotomy for the leg or the upper limb.

ADVANCED

Should be able to perform

- head and neck resections,
- ILI, ILP, CO2 laser,
- minimally invasive surgical methods of isolated metastases,
- pelvic resections.

ALL TRAINEES IN ALL YEARS

DEALING WITH PATIENTS IMPACTED BY DISFIGUREMENT AND LOSS OF FORM AND FUNCTION

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

Objective: 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

Knowledge

BASIC

- Demonstrates knowledge of the psycho-social issues that may follow from trauma, disease and surgery including social anxiety, depression, bullying, prejudice isolation and exclusion.
- Demonstrates awareness of those parts of the specialty where psychosocial issues can have particular impacts for patients (Burns, Cleft, Craniofacial, Hand, Head & Neck, Genitourinary reconstruction, Oncoplastic Breast, Skin Oncology, Vascular anomalies)

INTERMEDIATE

- Demonstrates knowledge of the factors that predict patient ability to cope with surgical treatment
- Defines the stages of bereavement associated with loss of body image and the clinical and psychological supports that can be put in place to assist the patient cope with that loss

Clinical Skills

BASIC

- Demonstrates ability to elicit signs and symptoms of distress and anxiety in patient undergoing plastic surgery
- Demonstrates ability to make an appropriate referral to a clinical psychologist or other supporting member of the multidisciplinary team

INTERMEDIATE

- Provides realistic information and guides patient decision-making regarding choices available and timing of those treatments. Treats the patient as partner in the decision-making process
- Demonstrates confidence to elicit psychological and social needs in a range of settings.

Technical Skills and Procedures Not applicable