Training Requirements for the Specialty of Plastic, Reconstructive, and Aesthetic Surgery

European Standards of Postgraduate Medical Specialist

(former chapter 6)

Preamble

The UEMS is a non-governmental organisation representing national associations of medical specialists at the European Level. With a current membership of 39 national associations and operating through 43 Specialist Sections and European Boards, the UEMS is committed to promote the free movement of medical specialists across Europe while ensuring the highest level of training which will pave the way to the improvement of quality of care for the benefit of all European citizens. The UEMS areas of expertise notably encompass Continuing Medical Education, Post Graduate Training and Quality Assurance.

It is the UEMS' conviction that the quality of medical care and expertise is directly linked to the quality of training provided to the medical professionals. Therefore, the UEMS committed itself to contribute to the improvement of medical training at the European level through the development of European Standards in the different medical disciplines. No matter where doctors are trained, they should have at least the same core competencies.

In 1994, the UEMS adopted its Charter on Post Graduate Training aiming at providing the recommendations at the European level for good medical training. Made up of six chapters, this Charter set the basis for the European approach in the field of Post Graduate Training. With five chapters being common to all specialties, this Charter provided a sixth chapter, known as “Chapter 6”, that each Specialist Section was to complete according to the specific needs of their discipline.

After the introduction of this Charter, the UEMS Specialist Sections and European Boards have continued working on developing these European Standards in Medical training that reflects modern medical practice and current scientific findings. In doing so, the UEMS Specialist Sections and European Boards did not aim to supersede the National Authorities' competence in defining the content of postgraduate training in their own State but rather to complement these and ensure that high quality training is provided across Europe.

At the European level, the legal mechanism ensuring the free movement of doctors through the recognition of their qualifications was established back in the 1970s by the European Union. Sectoral Directives were adopted, and one Directive addressed specifically the issue of medical Training at the European level. However, in 2005, the European Commission proposed to the European Parliament and Council to have a unique legal framework for the recognition of the Professional Qualifications to facilitate and improve the mobility of all workers throughout Europe. This Directive 2005/36/EC established the mechanism of automatic mutual recognition of qualifications for medical doctors according to training requirements within all Member States; this is based on the length of training in the Specialty and the title of qualification.

Given the long-standing experience of UEMS Specialist Sections and European Boards on the one hand and the European legal framework enabling Medical Specialists and Trainees to move from one country to another on the other hand, the UEMS is uniquely in position to provide specialty-based recommendations. The UEMS values professional competence as “the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served.” While professional activity is regulated by national law in EU Member States, it is the UEMS understanding that it has to comply with international treaties and UN declarations on Human Rights as well as the WMA International Code of Medical Ethics.

This document derives from the previous Chapter 6 of the Training Charter and the previous PRAS Section ETR and provides definitions of specialist competencies and procedures as well as how to document and assess them. For the sake of transparency and coherence, it has been renamed as “Training Requirements for the Specialty of Plastic, Reconstructive and Aesthetic Surgery.” All such UEMS documents aim to provide the basic Training Requirements for each specialty and should be regularly updated by UEMS Specialist Sections and European Boards to reflect scientific and medical progress. The three-part structure of this document reflects the UEMS approach to have a coherent and pragmatic document, not only for medical specialists, but also for decision-makers at the National and European level interested in knowing more about medical specialist training.

Introduction to the Specialty of Plastic, Reconstructive and Aesthetic Surgery (PRAS)

The discipline of Plastic, Reconstructive and Aesthetic Surgery (PRAS) is concerned with the whole management of acute and non-acute conditions which may be congenital or acquired as a result of trauma, disease, degeneration or ageing in patients of all ages. Its aim is the restoration or improvement of form and function, together with the normalisation of appearance and well-being.

The spectrum of conditions managed within the specialty is defined more by the techniques harnessed by this branch of surgery rather than being anatomically site-specific. As such, the demands of anatomical and physiological knowledge, as well as grasp of relevant pathological and genetic conditions, are extensive and wide-ranging. There is, however, a unifying thread of competence which runs throughout the discipline that emanates from a profound understanding of all forms of tissue, whether ‘normal’ for the patient’s age, or diseased or malformed. This mandates a necessary versatility with tissue handling and manipulation which are the foundational aspects of good plastic surgical practice. There is no region of the body that lies outside the bounds of necessary knowledge that must be fully understood for surgeons practising in this specialty.

Due to the wide variety of conditions which the Plastic, Reconstructive and Aesthetic Surgeon is asked to manage, it is effectively impossible for all competent specialists within the discipline to have encountered each and every possible condition, pathology, and disease course during a rigorous training period. It is important then that the essential competencies of diagnosis, management planning, competent tissue handing, and manipulation required to deliver safe and effective outcomes, are structured to prepare practitioners for independent practice with such wide-ranging clinical demands.

Many conditions will, naturally, present in large numbers and with similar presentations, such that standard methods of competent procedures can be taught and assessed. This applies for such conditions as breast hypertrophy for reduction, Dupuytren’s disease for fasciectomy, cleft lip and palate (as a super-specialty requirement), and breast cancer reconstruction (as examples) where competence cannot be achieved without a certain number of cases having been managed and good outcomes been demonstrated during the training period.

The exact content of the specialty may vary by country. However, UEMS strongly supports harmonisation and incorporation of all topics relevant to Plastic, Reconstructive and Aesthetic Surgery outlined within this charter on a European, supra-national level. Thus, the following training requirements for trainees have been outlined.

PRAS frequently involves interaction and collaborative work alongside surgeons and clinicians across numerous other disciplines. It also requires collaborative work with many allied health care professional disciplines and therapists, alongside medical engineers, prosthetists, cosmetic camouflage experts, and so forth. There is therefore a high demand for collaborative team-working within the specialty, as the problem-solving aspect of this discipline is called upon frequently to assist the management of complex and salvage cases, and sometimes when clinical situations are deteriorating.

Skills are required in soft and hard tissue management, as well as finesse with all aspects of tissue handling.

The syllabus for PRAS is therefore necessarily lengthy and will still not encompass every possible clinical scenario which competent surgeons might be called upon to address. It does, however, form the basis for the breadth of the specialty across the UEMS domains, and serve as a focus for the overriding goal of harmonising competence throughout all participating nations.

This revision has included some additional high-level outcomes from training. These are commonly termed Entrustable Professional Activities (EPAs) but are also referred to in some nations as Capabilities in Practice (CiPs). These aim to ensure that the role of an independently practising surgeon is capable of performing all the tasks required of a professional during their working day. That will include having developed generic skills, alongside behaviour that reflects the highest standards and values expected of such practitioners. Some countries use a series of defined capabilities termed ‘Generic Professional Capabilities’ (GPCs) which are aligned to the statutory guidance issued to all doctors. They are used in this ETR as a template for future development of such higher-level competencies throughout the UEMS nations.

I. TRAINING REQUIREMENTS FOR TRAINEES

1. Content of training and learning outcome

a. Competencies required of the trainee

PRAS is a broad and diverse specialty which requires a depth of understanding of basic sciences, underpinning a wide spectrum of clinical conditions including congenital, traumatic, cancer and aesthetic disorders. Given that the range of conditions extends throughout the body and across all ages and groups, the requirements for competent practice are extensive and demanding.

Specialists in independent practice require not only knowledge and skills in diagnosis and techniques of intervention, but highly refined judgement in when not to operate and interaction with expertise in other disciplines.

The training period for a Plastic, Reconstructive and Aesthetic Surgeon cannot be undertaken in less than four years following the acquisition of basic post-graduate medical and surgical competency, and in practice, many European nations expect significantly longer periods of supervision before independent practice is authorised. It is also acknowledged that practice in this specialty inevitably involves further learning and education throughout a career lifetime, and continuing medical education is mandatory for all specialists.

Surgeons in training have differing titles within the nations of UEMS, and commonly take periods of time out of formal training programmes for professional reasons (such as a period of research, military service, or highly specialised training) or personal reasons (such as maternity/paternity leave, or career breaks). Most national schemes take full account of such trajectories in training pathways, and when accompanied by good mentorship and supportive systems, can be enriching for both the individuals, their teams, and patients.

Learning outcomes and competency are descriptions of what a surgeon still under supervision knows, understands and is able to demonstrate to be able to perform - in terms of knowledge, technical skills, values and attitudes.

Entrustable Professional Activities – EPAs (the high-level outcomes of training)

Training is designed to produce a person capable of safely and effectively performing the role of a first day consultant surgeon. The role of a consultant surgeon can be thought of as a sum of all the various tasks which need to be performed through a working week. These tasks are the high-level outcomes of the curriculum and grouping these together describe the role of a consultant surgeon.

To perform a high-level clinical task as a consultant surgeon requires trainees to be able to integrate areas of learning from all parts of the syllabus, including knowledge, attitudes, clinical skills, professional skills and technical skills. In addition, a consultant surgeon will need to have acquired the generic skills, behaviours and values shared by all doctors in order to perform such tasks safely and well. Entrustable Professional Activities are a set of skills that can be developed through training from novice to expert and constitute these high-level clinical outcomes which embody the core values which society expects of clinicians at the highest levels of practice. They are common across all surgical specialties and are delivered within the context of the Generic Professional Capabilities (GPCs - to be defined below) and the specialty syllabus.

The writing process of EPAs is an ongoing process in our member countries and their use as an assessment of training is still variable.

The generic knowledge, skills, behaviours and values shared by all doctors are described in the Generic Professional Capability (GPC) framework developed by the UK General Medical Council (GMC). The GPCs are essential components and have equal weight to the EPAs in the training and assessment of clinical capabilities and responsibilities in the training programme.

The Generic Professional Capability (GPC) framework has nine domains:

Domain 1	Professional values and behaviours
Domain 2	Professional skills
	Practical skills
	Communication and interpersonal skills
	Dealing with complexity and uncertainty
	Clinical skills
Domain 3	Professional knowledge
	Professional requirements
	EU legislative requirements
	The health service and healthcare system in Europe
Domain 4	Capabilities in health promotion and illness prevention
Domain 5	Capabilities in leadership and team working
Domain 6	Capabilities in patient safety and quality improvement
	Patient safety
	Quality improvement
Domain 7	Capabilities in safeguarding vulnerable groups
Domain 8	Capabilities in education and training
Domain 9	Capabilities in research and scholarship

b. Theoretical knowledge

PRAS requires a depth of knowledge across all basic science domains, especially anatomical fluency throughout the whole human frame (at all ages) which exceeds that required of many more site-specific surgical specialties. In order to reconstruct

the abnormal and disordered from the most appropriate elements of tissue (including the use of prosthetics and biomaterials) requires considerable three-dimensional understanding of tissues and their behaviour and biomechanics.

The necessity for a strong underpinning of basic science also mandates understanding of the pathological processes following injury and cancer, as well as tissue healing and its management in diverse pathological situations.

The main domains which form an essential part of the syllabus are as follows:

Aesthetic Surgery	Aesthetic Surgery of Face, Orbit, Forehead, Scalp, Lips & Neck
	Rhinoplasty and Otoplasty
	Body contouring, liposuction & fat grafting
	Non-Surgical rejuvenation
Breast Surgery	Basic Sciences and Breast assessment
	Breast cancer
	Benign breast conditions
	Surgery of the Breast
	Breast reconstruction – Implant based techniques
	Breast reconstruction – Autologous tissue based techniques
Burns	Burns classification, primary management and transfer
	Burns resuscitation and critical care
	Burns early surgery
	Burns late surgery
	Burn sequelae: Management of Burns infection and other complications
	Paediatric burns
Chest wall	Chest wall reconstruction
Cleft Lip/Palate	Primary management of cleft lip and nose
	Secondary repair of cleft lip and nose
	Primary repair of cleft palate
	Secondary speech surgery
	Dentoalveolar defect including alveolar bone grafting

	Orthognathic surgery / Working with the Cleft MDT
Craniofacial Surgery	Craniofacial General Principles
	Craniosynostosis
	Craniofacial tumours in adults and children
	Craniofacial syndromes of tissue deficiency
	Craniofacial overgrowth syndromes
Craniomaxillofacial and Orthognathic Surgery	Orbital surgery
	Craniomaxillofacial trauma
	Orthognathic surgery of the maxilla and the mandible
Ears	Ear deformities and ear reconstruction
Genitourinary Surgery	Hypospadias and allied conditions
	Epispadias, anomalies of female genitalia, ambiguous genitalia, and acquired perineal defects
	Gender reassignment surgery
Hand Surgery	All aspects of skin and soft tissue disorders / Microsurgery / Dupuytren's Disease
	Fractures and Joint Injuries including Wrist Instability
	Osteoarthritis and inflammatory arthritis
	Tendon and tendon related disorders
	Nerve and nerve related disorders
	Congenital hand, vascular disorders, and tumours
Head and Neck Surgery	Basic Sciences and Head & Neck assessment
	Skin-related neoplasia of the head & neck
	Non-skin-related neoplasia of the head & neck
	Techniques for reconstruction of the head & neck
	Reconstruction of specific head and neck sites
	Facial Reanimation
Lower Limb	Assessment and primary management lower limb injuries
	Debridement, stabilisation and compartment syndrome
	Soft tissue reconstruction
	Vascular injuries and amputation
	Complications
	Paediatric injuries and outcome measures
Lymphatics, and	Lymphatic Surgery

lymphedema	
Microsurgery	Microsurgical repair of the vessels, supramicrosurgery
	Microsurgical repair of the nerves
	Microsurgical repair of the lymphatics, lymphaticovenous / lymphaticolymphatic repairs
Pelvic floor	Pelvic reconstruction
Skin and soft tissue surgery	Basic sciences and skin assessment
	Primary treatment of skin-related neoplasia
	Treatment of recurrent and chronic skin tumours
	Reconstructive techniques for skin and soft tissue
	Scarring, wounds and other surgical conditions of the skin and soft tissue
	Multidisciplinary team workings
	Complex wound
Sarcoma	Sarcoma
Vascular anomalies	Vascular anomalies
Technology	Energy based devices (e.g., Lasers, Radiofrequency (RF), High Intensity Focused Ultrasound (HIFU), Plasma, Monopolar/Bipolar/Multipolar)
	Robotic surgery
Psychological management	Psychological management of deformity and loss of form and function
Medicolegal aspects	Informed consent and Medicolegal responsibilities

The list of domains which form this basis of the European Plastic, Reconstructive and Aesthetic Surgery Curriculum is indicative but not exhaustive. Trainees may well see patients with conditions not listed, which would be reflected in their portfolio of training or equivalent documentation.

These items define the basis of the core curriculum. By the time an individual is appointed as a specialist/consultant, he/she would be expected to have the following attributes:

- Knowledge and understanding of the relevant and topical underpinning medical sciences, population health sciences, pathophysiology and principles of management and care of patients with any of the core clinical conditions.
- The ability to indicate and interpret diagnostic testing: laboratory tests, diagnostic imaging techniques, test performance characteristics.
- An understanding of the modes of action and potential adverse effects of therapies and experience in advising patients about the risks and benefits of such therapies.
- An understanding of the benefits and risks of surgical procedures, their chances of success and failure, their complications and time needed to achieve a stable result.
- The ability to analyse and utilise research findings in PRAS, so that their clinical practice is, as far as possible, based upon evidence.
- The ability to provide evidence that they are maintaining their general medical as well as their plastic surgical knowledge sufficiently to ensure a high standard of clinical practice.
- An understanding of the healthcare system(s) within their country of training.
- Be prepared for their role as future clinical leaders.
- The ability to be an effective member and a leader of a multidisciplinary team.

Simply put, the EPAs and these GPCs (as described) are the constituent parts of the role of a consultant in PRAS. Each part is as important as the next, and doctors are required to be capable in all parts of the role in order to be able to practise independently. In order to complete training and be recommended for Certification and entry onto the Specialist Register, the doctor must demonstrate that they are capable of unsupervised practice in all the EPAs and GPCs. For example, managing the unselected emergency take (EPA2) requires the integration of knowledge, clinical and diagnostic skills and technical skills described in the syllabus as well as communication and interpersonal skills, time management skills and many other generic skills described in the GPCs in order to be delivered safely, professionally and effectively.

Overlap of curriculum with other surgical Specialties

It is entirely appropriate that the spectrum of conditions and operative interventions encompassed by the PRAS discipline should overlap with the subject matter of many

other more site-specific specialties. As outlined in the preamble above, PRAS is not a site specific specialty, and requires competent understanding of a wide spectrum of care and understanding in order to be able to fulfil the demands of seamless integration with other disciplines as part of multi-disciplinary care. Plastic surgery has always been seen as a specialty to which all can turn to assist in problem solving as well as managing a range of conditions primarily due to the specific expertise demanded by certain cases. The most significant overlaps lie with ENT (ORL) surgery, OMFS and Oral surgery, Ophthalmology, Paediatric and Urological surgery. However, interactions with general surgery, cardiothoracic, oncology and radiotherapy, dermatology and rheumatology are also frequent, along with virtually every surgical and medical discipline at some time or other.

2. Organisation of training

a. Schedule of training

The required duration of training remains a matter that rightly is determined by respective national medical specialty Councils or Boards. However, PRAS Section of UEMS mandate that candidates applying for specialty training should have completed two years prior training in the generality of surgery. This should be accompanied by the acquisition of appropriate knowledge, training and experience in the care of general and acute surgical conditions.

Specialty training in PRAS should then be for a minimum of four further years. Further training will usually be undertaken (most commonly in the form of ‘fellowships’ for periods of 6-12 months) to allow the development of sub-specialty techniques and competency. Details of this are not part of the training requirements for core Plastic, Reconstructive and Aesthetic Surgery training.

The training period in PRAS will be in keeping with EU requirements and in any case sufficient to ensure that a trainee has met all the required educational and training needs and has demonstrated the acquisition of all the required educational and training competencies necessary for the awarding of the certificate of specialisation. Specific arrangements for the overall training for any individual trainee will be decided locally and be influenced by relevant national requirements. The list of topics shown above is a guide to the knowledge and skills base required of a specialist/consultant. Clinical experience should encompass all common PRAS conditions.

b. Curriculum of training

Supervision levels: Supervision levels are recommended for the assessment of trainee's ability to manage EPAs.

Level I	Able to observe only
Level II	Able and trusted to act with direct supervision
	a. Supervisor present throughout
	b. Supervisor present for part

Level III	Able and trusted to act with indirect supervision
Level IV	Able and trusted to act at the level expected of a day-one consultant
Level V	Able and trusted to act at a level beyond that expected of a day-one consultant, exhibiting good judgement and reflective practice based on breadth of experience.

PRAS Syllabus

The syllabus adopts a modular structure that encompasses the competency requirements of Knowledge, Attitudes, Clinical and Professional Skills and Technical Skills. The modular format is presented in a hierarchical manner; namely Basic, Intermediate or Advanced levels of complexity. This modular structure has been adopted from proven use in some national training programmes within the UEMS states, with outcomes that are accepted as valid and robust.

Syllabus standards

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 the intermediate training period across all subject areas.

c. Advanced level competency: This third tier of topics includes the most complex topics in each module. Those items that are specified here are for all higher level trainees, entering the final phase of their training programme.

Workplace-based Assessments (WBAs)

Formative WBAs may be used to assess and provide feedback on any areas of clinical activity. However, other than for the critical conditions, defined index procedures, or where a topic has been identified to address a concern raised by trainers, WBAs are optional. Trainees therefore are not mandated to use WBAs to evidence their learning against each syllabus topic.

Aesthetic Surgery
Aesthetic Surgery of Face, Orbit, Forehead, Scalp, Lips & Neck
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 ageing 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 ageing
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 neck-lifting
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 and ATTITUDES
BASIC should be able to 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 ability 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 ability 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 or manage:
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
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 and ATTITUDES
BASIC should be able to 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 ability 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
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ADVANCED should be able to demonstrate ability 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 or manage:
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 or manage a patient with
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
lower lid blepharoplasty
ADVANCED should be able to perform or manage a patient with
lower lid blepharoplasty by external or transconjunctival approaches
deep plane facelift
endoscopic facelift
RHINOPLASTY AND OTOPLASTY
OBJECTIVE
Competence in the diagnosis, planning and management of all aspects of aesthetic nasal and aesthetic ear surgery
KNOWLEDGE
BASIC should be able to 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 be able to 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., Chong-Chet 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 be able to perform or manage:
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, anotia, or microtia
CLINICAL SKILLS and ATTITUDES
BASIC should be able to 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 be able to 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 be able to 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 or manage:
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 be able to perform or manage:
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 or manage:
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
BODY CONTOURING, LIPOSUCTION and FAT GRAFTING
OBJECTIVE
Acquire competence in the assessment, planning correction and management of all aspects of body lifting and contouring
KNOWLEDGE
BASIC should be able to 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 be able to 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 be able to demonstrate knowledge of:
psychological condition of dysmorphophobia
condition of monosymptomatic hypochondriacal psychosis
psychosexual impacts of body image disorder
patterns of acquired skin excess
syndromic abnormalities of skin laxity
forms of lipodystrophy and lipedema 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 and ATTITUDES
BASIC should be able to 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 be able to 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 be able to 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, including lipedema
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 perform or manage:
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 or manage:
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 or manage:
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
NON-SURGICAL REJUVENATION
OBJECTIVE
Acquire competence in the management of the aesthetic patient using non-surgical enhancement techniques

KNOWLEDGE
BASIC should be able to 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 be able to 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 usage
ADVANCED should be able to 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. Know about the regulation of non-surgical rejuvenation including the legislation and safety requirements on the use of lasers.
CLINICAL SKILLS and ATTITUDES
BASIC should be able to 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 be able to 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 be able to 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
Early recognition of dermal filler complications
Acute management of dermal filler complications (Hyaluronidase injection etc.)
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to perform or manage:
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 perform or administer:
botulinum toxin injections to glabella, forehead, periorbital, perioral and cervical areas for targeted muscle paralysis
ADVANCED should be able to perform or manage:
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

Breast Surgery
BASIC SCIENCES AND BREAST ASSESSMENT
OBJECTIVE
Acquire competence in basic sciences pertinent to the breast and competence in clinical diagnosis and investigation
KNOWLEDGE
BASIC should be able to 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 be able to demonstrate knowledge of:
developmental abnormalities - accessory nipples, accessory breast tissue
concept and limitations of triple assessment
ADVANCED should be able to 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 and ATTITUDES
BASIC should be able to 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 be able to 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 be able to demonstrate skills of:
analysis and diagnostic synthesis, judgement, and surgical planning
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to perform or manage:
free-hand and ultrasound guided lesion Fine Needle Aspiration (FNA)

free-hand core biopsy
punch biopsy of skin / nipple
INTERMEDIATE should be able to perform or manage:
surgical excision biopsy
ultrasound guided core biopsy
ADVANCED should be able to perform or manage:
vacuum assisted mammatome biopsy
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 be able to 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,
breast screening delivery, patient flow, quality assurances and criticisms/limitations
principles of screening programmes within a population
INTERMEDIATE should be able to 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, 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
ADVANCED should be able to demonstrate knowledge of:
breast cancer genetics, specifically identified gene abnormalities and conditions associated with breast cancer (e.g., BRCA1- BRCA2, 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
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 and ATTITUDES
BASIC should be able to 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 be able to 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 Breast Care Nurse
ADVANCED should be able to 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 or manage:
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 or manage:
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 or manage:
axillary lymph node dissection for disease recurrence
skin and nipple preserving mastectomy
therapeutic mammoplasty, immediate breast reconstruction procedures appropriate to parent specialty
oncoplastic procedures: volume displacement / volume replacement
BENIGN BREAST CONDITIONS
OBJECTIVE
Acquire competence in the diagnosis and management of benign breast conditions
KNOWLEDGE
BASIC should be able to 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 be able to 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 demonstrate knowledge of:
Should be able to describe association between specific high-risk benign breast conditions with associated increased breast cancer risk
CLINICAL SKILLS and ATTITUDES
BASIC should be able to 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 were indicated
INTERMEDIATE should be able to 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 be able to 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 or manage:
free hand aspiration / surgical drainage of breast abscess
aspiration of cyst
benign lump excision
INTERMEDIATE should be able to perform or manage:
nipple eversion techniques
wire / image guided excision of lesion
ultrasound guided aspiration abscess
microdochectomy
major duct excision
fistula surgery
ADVANCED should be able to perform or manage:
ductoscopy
minimal access surgery
nipple eversion techniques
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, changes related to the age, 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
principles, indications, and complications of fat grafting
presentation, aetiology, management and complications of gynaecomastia
ADVANCED should be able to demonstrate knowledge of:
assessment of envelope, volume and footprint 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 and ATTITUDES
BASIC should be able to 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 should be able to demonstrate ability to:
manage patients with the algorithms for the procedures covered in this section including investigations

ADVANCED should be able to demonstrate ability to:
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 or manage:
planning, execution and closing incisions on the breast with reference to aesthetic principles and subunits
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 or manage:
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 or manage:
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 the deformities of the breast

BREAST RECONSTRUCTION IMPLANT BASED TECHNIQUES
OBJECTIVE
Acquire competence in implant-based reconstruction including indications, technique and management of complications
KNOWLEDGE
BASIC should be able to 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 be able to 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
Breast Implant-Associated Anaplastic Large Cell Lymphoma (BIA-ALCL)
Breast implant-Associated Squamous Cell Carcinoma (BIA-SCC)
ADVANCED should be able to demonstrate knowledge of:
staged procedures – single and two stage: advantages and disadvantages
adjunctive biological technologies
outcome of implant-based reconstruction
relevant literature
CLINICAL SKILLS and ATTITUDES
BASIC should be able to 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 be able to demonstrate ability to:
consent patients describing full range of potential complications and set realistic expectations.
ADVANCED should be able to 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 perform or manage:
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 or manage:
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 or manage:
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)
single staged prepectoral breast reconstruction with FVI
BREAST RECONSTRUCTION AUTOLOGOUS TISSUE BASED TECHNIQUES
OBJECTIVE
Acquire competence in autologous tissue-based breast reconstruction including indications, technique and management of complications.
KNOWLEDGE
BASIC should be able to 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 “lifeboat,” donor site considerations)
principles of microsurgery
INTERMEDIATE should be able to 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 Immediate Breast Reconstruction (IBR) and Delayed Breast Reconstruction (DBR) – preoperative 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 be able to 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 and ATTITUDES
BASIC should be able to 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 be able to 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 stays 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 be able to 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 or manage:
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 or manage:
pre-operative marking of patient
raising pedicled autologous flaps including latissimus dorsi
in-setting of flap
ADVANCED should be able to perform or manage:
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
flap salvage for failing flaps
flap shaping techniques
flap revision techniques
lipomodelling for correction of resectional defects
lipomodelling in breast reconstruction

Burns

BURNS 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 burn facility/unit/centre.
KNOWLEDGE
BASIC should be able to:
describe in detail the knowledge required to manage the acutely unwell adult and child, and the emergency management of acute burns:
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 be able to 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 be able to 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 and ATTITUDES
BASIC should be able to 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 be able to 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 be able to demonstrate ability to:
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 or manage:
assessment of burn area and depth
adjunctive techniques for depth assessment
escharotomy and fasciotomy
application and change of burn dressings
INTERMEDIATE should be able to perform or manage:
ability to use epidermal substitutes
ADVANCED should be able to perform or manage:
airway management including performing tracheostomy
stabilising associated injuries and bleeding

BURNS RESUSCITATION and CRITICAL CARE
OBJECTIVE
Acquire competence in the initial resuscitation of a burn patient and ongoing critical care.
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
options for airway management
pathophysiology of burn shock
resuscitation regimes
wound dressings
pathophysiology of inhalation injury
INTERMEDIATE should be able to 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 be able to demonstrate knowledge of:
microbiology of burns
principles of ventilation
nutritional support
PICU practices
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
assess burn injury
manage large burn wounds
apply temporary dressings e.g., negative pressure
INTERMEDIATE should be able to 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 be able to 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 or manage:
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 or manage:
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 or manage:
endotracheal intubation
bronchoscopy
basic ventilator management,
amputation of non-salvageable limbs
BURNS EARLY SURGERY
OBJECTIVE
Acquires competence in the planning and execution of appropriate early surgery in burns
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
anatomy of skin
classification of burn injury by zones
benefits and disadvantages of both early excision and conservative management
INTERMEDIATE should be able to 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 be able to 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 and ATTITUDES
BASIC should be able to demonstrate ability to:
clinically assess 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 be able to 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 be able to 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 or manage:
dressings care
skin grafts of small to moderate areas
INTERMEDIATE should be able to perform or manage:
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 or manage:

resurfacing procedures using temporary skin cover
resurfacing using skin substitutes
limb amputations
BURNS LATE SURGERY
OBJECTIVE
Acquire competence in later burn management including the planning and execution of reconstructive surgery
KNOWLEDGE
BASIC should be able to perform or manage:
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 be able to perform or manage:
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 be able to perform or manage:
principles of management of more complex injuries
surgical options for late reconstruction
novel therapies.
CLINICAL SKILLS and ATTITUDES
BASIC should be able to 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 be able to 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 be able to 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 or manage:

burn scar grafting and local flaps including the Z-plasty and its variations
INTERMEDIATE should be able to perform or manage:
using skin substitutes and distant flaps of small and medium areas
ADVANCED should be able to perform or manage:
resurfacing with skin substitutes, distant flaps and free flaps of medium and large areas
late major amputations
BURN SEQUELAE: MANAGEMENT of BURNS INFECTION and other COMPLICATIONS
OBJECTIVE
Acquire competence in the diagnosis and management of burn infections and other complications
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
the microbiology of burns
INTERMEDIATE should be able to demonstrate knowledge of:
metabolic derangement occurring in the burn patient
concept and practice of antibiotic stewardship
ADVANCED should be able to 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 and ATTITUDES
BASIC should be able to demonstrate ability to:
undertake wound assessment
INTERMEDIATE should be able to demonstrate ability for:
the clinical assessment and management algorithms for the infections and other burn complications
ADVANCED should be able to 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 or manage:
radical excision of burn wound for infection.

ADVANCED should be able to perform or manage:
amputation and other life-saving surgery in the case of infection and other complications
PAEDIATRIC BURNS
OBJECTIVE
Acquire competence in the diagnosis and management of paediatric burns and the recognition of the need for multidisciplinary management
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
requirements are as per modules 1-5, in the context of the paediatric patient
as defined by PALS/APLS
paediatric fluid regimens
toxic shock syndrome
non-accidental injury
INTERMEDIATE. **should be able to demonstrate knowledge of:**
As per modules 1-5, in the context of the paediatric patient
PHDU practices
ADVANCED
As per modules 1-5, in the context of the paediatric patient.
other child protection issues
PICU practices
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
As per modules 1-5, in the context of the paediatric patient
Works with other agencies in the event of non-accidental injury
INTERMEDIATE should be able to demonstrate ability to:
As per modules 1-5, in the context of the paediatric patient
work with the paediatric elements of the MDT
Apply the law in respect of non-accidental injury and communicates with appropriate parties
ADVANCED should be able to demonstrate ability to:
As per modules 1-5, in the context of the paediatric patient
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to:
As per modules 1-5, in the context of the paediatric patient
apply Biobrane™ and similar dressings
INTERMEDIATE should be able to:
As per modules 1-5, in the context of the paediatric patient

perform early excision of burns to prevent systemic upset
ADVANCED should be able:
As per modules 1-5, in the context of the paediatric patient

Chest wall
CHEST WALL RECONSTRUCTION
OBJECTIVE
Acquire competence in the diagnosis and management of congenital and acquired defects of the chest wall.
KNOWLEDGE
BASIC should be able to 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 be able to 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 be able to demonstrate knowledge of:
potential impact of chest wall defects on respiratory physiology
strategies for management of non-collapsible 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 transfers in chest wall reconstruction
techniques for repair of congenital pectus deformities
techniques for salvage of failed chest reconstruction
CLINICAL SKILLS and ATTITUDES
BASIC should be able to 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 demonstrate ability 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 demonstrate ability 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 perform or manage 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 or manage:
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 or manage:
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 Lip / Palate
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 EPILS (European Paediatric Immediate Life Support) Course, 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 be able to demonstrate knowledge of:
the different techniques for cleft lip and nose repair
timelines and sequence of operative procedures
ADVANCED should be able to 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 and ATTITUDES
BASIC should be able to 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 nasopharyngeal 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 be able to 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 be able to 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 Advanced Paediatric Life Support /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 or manage:
mark a cleft lip and nose repair. Should be able to perform some of the muscle dissection and elevation of a vomerine flap
ADVANCED should be able to perform or manage:
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.

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 be able to demonstrate knowledge of:
facial morphology and aesthetics
basic cephalometric planning techniques
surgical approaches to the nose
rhinoplasty techniques relevant to cleft nose deformity
ADVANCED should be able to demonstrate knowledge of:
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 and ATTITUDES
BASIC should be able to demonstrate ability to:
correctly elicit patients' concerns and their perceptions of the conditions.
INTERMEDIATE should be able to demonstrate ability to:
Assess lip and nose deformity, including conditions around alveolar fistulae.
determine the optimum timing of surgery and decide on priorities for treatment
communicate with the MDT,
Know when to recruit the help of a clinical psychologist.
ADVANCED should be able to demonstrate ability to:
skill in formulating a 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 to perform or manage:
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 or manage:
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 or manage:
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, in-fracture, application of splint
full cleft rhinoplasty

PRIMARY REPAIR OF CLEFT PALATE
OBJECTIVE
Competence in the assessment, surgical management and aftercare of primary cleft palate.
KNOWLEDGE
BASIC should be able to 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 be able to demonstrate knowledge of:
anatomical basis for surgical correction of palatal abnormalities
ADVANCED should be able to:
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 and ATTITUDES
BASIC should be able to 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 nasopharyngeal 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 or manage:
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 or manage:
(in order) elevation of the oral layer in patients with unilateral and bilateral cleft lip and palate, closure of the nasal layer
suturing of the oral layer in patients with cleft lip and palate.
ADVANCED should be able to perform or manage:
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
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
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
adult communication problems related to previous cleft palate repair and previous surgery for VPI
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
elicit speech disorders
consult with speech therapists
INTERMEDIATE should be able to demonstrate 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 be able to demonstrate ability to:
interpret an audiogram and tympanometry study
describe the principles of brain stem evoked response audiometry
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 or manage:
skilful dissection of a previously repaired cleft palate as part of a correction for speech disorder
pharyngoplasty (various techniques)

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 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 dentoalveolar surgical practice
the methods of assessment of success of bone grafting
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 and ATTITUDES
BASIC should be able to demonstrate ability to:
make clinical assessment of the secondary dentition
function and communicate within the framework of the Cleft MDT
INTERMEDIATE should be able to demonstrate ability to:
consult appropriately with Orthodontic colleagues
consult with and refer to Paediatric and Restorative Dental colleagues
ADVANCED should be able to demonstrate ability 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 or manage:
harvesting of iliac bone graft.
INTERMEDIATE should be able to perform or manage:
low scar access when harvesting iliac bone graft
ADVANCED should be able to perform or manage:
closure of an alveolar fistula with appropriate technique.

ORTHOGNATHIC SURGERY / WORKING with the CLEFT MDT
OBJECTIVE
To acquire knowledge of the management of residual cleft deformity in adults including principles of orthognathic surgery 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 be able to 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
National guidelines for the diagnosis, treatment and follow up of cleft patients
INTERMEDIATE should be able to demonstrate knowledge of:
principles of orthognathic surgery including distraction osteogenesis
the role of the orthodontist in cleft care
the surgical principles of orthognathic appliances and their use in practice
improving outcomes, guidance, and peer review
ADVANCED should be able to 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 individuals' body image on their life and that of their family,
the processes by which an individual can successfully adjust to disfigurement and explain how the multidisciplinary team can assist with that process.
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
assemble appropriate professionals to solve adults, concerns
communicate and refer within the specialist MDT
INTERMEDIATE should be able to demonstrate ability to:
undertake orthodontic measurement of midfacial growth
develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues
analyse and develop diagnostic and surgical planning within the context of an MDT
lead clinical discussion of cleft-related disorders for neonate, infant, pre-school, and later ages following consultations
ADVANCED should be able to 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
to lead whole clinic process for an entire MDT session
TECHNICAL SKILLS AND PROCEDURES
BASIC
Not applicable
INTERMEDIATE
Not applicable
ADVANCED
Not applicable

Craniofacial Surgery
CRANIOFACIAL 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 be able to 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 EPILS (European Paediatric Immediate Life Support) Course, 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, and the referral pathways for protection of the 'at-risk' child
emergency diagnosis of elevated intracranial pressure (ICP) and/or intracranial haemorrhage
Should be able to describe the management of extravasation injuries
INTERMEDIATE should be able to demonstrate knowledge of:

technique of intermaxillary fixation
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 and ATTITUDES
BASIC should be able to 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 perioperative environment, and post-operatively.
take informed consent for the procedures covered in this module,
present cases within the Craniofacial MDT
INTERMEDIATE should be able to 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 be able to 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 psychosocial 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
recognise signs of non-accidental injury, risk factors, family pathology
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to:
Trauma:
perform tracheostomy (emergency and percutaneous) and nasal packing for epistaxis
INTERMEDIATE should be able to perform or manage:
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 or manage:
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 alloplastic material for inlays and onlays. Osseointegrated implant choice, sites and design in conjunction with maxillofacial prosthetist.

Surgical approaches to the craniofacial skeleton: McCord lid swing, transconjunctival, transblepharoplasty, transcaruncular, Weber-Ferguson and open rhinoplasty, transbuccal. Levels of Craniofacial access.
Craniofacial aesthetic surgery.
Endoscopic techniques, subperiosteal surgery, genioplasty, advanced rhinoplasty.
CRANIOSYNOSTOSIS
OBJECTIVE
Management of single suture and syndromic craniosynostosis
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
surgical anatomy, pathological anatomy and pathophysiology of craniosynostosis
common phenotypes and head shapes
positional vs synosteotic plagiocephaly: torticollis
INTERMEDIATE should be able to demonstrate knowledge of:
basic clinical genetics of craniosynostosis syndromes
recognition of different syndromic craniosynostoses (Apert, Crouzon)
strategies for the management of intracranial hypertension and its multifactorial influences
ADVANCED should be able to demonstrate 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 Fronto orbital refashioning (FOR),/Le Fort III, Monobloc and bipartition osteotomies, distraction vs bone graft techniques
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability 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 be able to demonstrate 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 be able to 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 or manage:
harvesting techniques for autologous grafts including iliac crest bone, rib, costochondral and cranial bone.
canthopexy, canthoplasty and eyelid balance, and
coronal flaps
ADVANCED should be able to perform or manage:
major segmental osteotomies and advancements of the craniofacial complex
distraction osteogenesis
cranioplasties
frontoorbital surgery
frontofacial surgery
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
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 e.g., BCC, SCC, melanoma, and their pathology, natural history and treatment protocols

INTERMEDIATE should be able to demonstrate knowledge of:
other adult tumours – e.g., neurofibromatosis, neuroblastoma with their pathology, natural history and treatment protocols,
common paediatric tumours e.g., neurofibromatosis, fibrous dysplasia, teratomas and their pathology, natural history and treatment protocols,
differences in clinical behaviours between adult and paediatric tumours
adjunctive techniques e.g., interventional radiology and IMRT and chemo-irradiation,
complex craniofacial vascular anomalies and malformations
role of the surgeon in the MDT
role of palliation in adults and children
management of end of life
ADVANCED should be able to 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 and ATTITUDES
BASIC should be able to demonstrate ability to:
present cases to the MDT
INTERMEDIATE should be able to demonstrate ability to:
diagnose, investigate the conditions covered in this module
counsel patients and deliver bad news concerning adult and paediatric patients
ADVANCED should be able to 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 or manage:
reconstructive techniques including grafts and local flaps
INTERMEDIATE should be able to perform or manage:
elevation ‘workhorse’ free flaps including latissimus dorsi and radial forearm flap (includes these exercises performed as surgical simulation)
manage Le Fort I down-fracture for skull base access
ADVANCED should be able to perform or manage:
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

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 be able to 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
classification of encephalocoeles
INTERMEDIATE should be able to 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 be able to demonstrate knowledge of:
other tissue deficiency syndromes e.g., Craniofacial clefts & encephalocoeles
Binder's syndrome
holoprosencephaly
arrhinia
CLINICAL SKILLS and ATTITUDES
BASIC
Not applicable
INTERMEDIATE should be able to demonstrate ability to:
manage the compromised airway
undertake 'defensive' surgical treatment planning (allowing for effect of growth on surgical results in children)
ADVANCED should be able to demonstrate 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 or manage:

excision of accessory auricles
INTERMEDIATE should be able to perform or manage:
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 or manage:
eyelid rebalancing and reconstruction,
mandibular distraction and reconstruction
ear reconstruction – autologous and osseointegrated implant
nasal reconstruction and rhinoplasty
orbital translocation
soft tissue free flaps e.g., dipotassium flaps
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 be able to demonstrate knowledge of:
hamartomas, teratomas, and dysplasias
INTERMEDIATE should be able to demonstrate knowledge of:
planes of facial resuspension
differential diagnosis of overgrowth asymmetries
radiological diagnosis
ADVANCED should be able to demonstrate knowledge of:
techniques for facial nerve preservation
indications for surgery within the MDT setting
Should demonstrate knowledge of the planes of facial resuspension.
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
manage patients with reference to:
maintenance of vital functions including airway, feeding etc
preservation of oral, nasal, palpebral sphincters
INTERMEDIATE should be able to demonstrate ability to:
undertake a clinical assessment of the craniofacial conditions covered in this module.
ADVANCED should be able to 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:
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

Craniomaxillofacial Surgery
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 be able to 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 e.g., hypertelorism, dystopia, telecanthus
differential diagnosis/genetics of hypertelorism syndromes
MDT assessment of hypertelorism syndromes
INTERMEDIATE should be able to 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 be able to demonstrate knowledge of:
orbital osteotomies
microphthalmos – orbital expansion (expanders & ostetomies)

impact on orbital translocation on vision
use of Box, Bipartition and advancement osteotomies of the orbit
CLINICAL SKILLS and ATTITUDES
BASIC
Emergencies – see module 1
INTERMEDIATE should be able to demonstrate ability to:
plan orbital osteotomies
formulate a management plan with respect to both techniques and timing
ADVANCED should be able to 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 or manage:
split calvarial bone graft harvest and fixation of bone graft
ADVANCED should be able to perform or manage:
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)
CRANIOMAXILLOFACIAL 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 be able to 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 be able to 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 be able to 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 and ATTITUDES
BASIC should be able to 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 be able to demonstrate ability to:
assess the nasal bones, cartilages and septum
assess the orbits, 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 be able to 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 or manage:
intra/extra-oral soft tissue handling and suturing techniques
INTERMEDIATE should be able to perform or manage:
surgical repair of nerve injury under magnification
techniques of intermaxillary fixation
techniques for approach to the orbital walls
ADVANCED should be able to perform or manage:
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
ORTHOGNATHIC SURGERY of the MAXILLA and the MANDIBLE
OBJECTIVE
Acquire competence in the assessment of a patient with malocclusion
Acquire competence in the principles of orthognathic surgery
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
embryology of the pharyngeal arch development
descriptive anatomy of head and neck
differences between female and male facial skeleton
airway management and emergency treatment
bone healing
principles of plate osteosynthesis
assessing the deformities of the facial skeleton
selection of imaging methods used in orthognathic surgery
alloplastic materials including bone substitutes
INTERMEDIATE should be able to demonstrate knowledge of:
principles of orthognathic surgery
principles of cephalometric analysis
the role of the orthodontist in MDT
the surgical principles of orthognathic appliances and their use in practice
diagnose the osseous deformities of the facial skeleton in relation with soft tissues
selection of alloplastic materials including bone substitutes
ADVANCED should be able to demonstrate knowledge of:
the surgical anatomy and pathological anatomy of the residual deformities of facial growth
assessment of the facial proportions
principles of distraction osteogenesis using internal or external systems
the processes by which an individual can successfully adjust to disfigurement and explain how the multidisciplinary team can assist with that process
assessment of cephalometric analysis
advantages and disadvantages of the alloplastic materials
the differences between the modifications of sagittal split ramus osteotomies
non-surgical correction of osseous deformities of the face

CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
select imaging methods used in orthognathic surgery
communicate and refer with orthodontist
INTERMEDIATE should be able to demonstrate ability to:
undertake orthodontic measurement of facial growth
develop and record management plan for the patient and discuss rationale for management of common scenarios with patients and colleagues
analyse and develop diagnostic and surgical plan with orthodontist
selection of the appropriate internal or external distraction systems
ADVANCED should be able to demonstrate ability to:
undertake appropriate referral and liaison with orthodontist
plan a program of orthognathic surgery including distraction osteogenesis
discuss complex treatment scenarios with patients including discussion of all options, advantages and disadvantages and take informed consent
lead entire clinical process
selection of appropriate synthetic filler material used in non-surgical correction of osseous deformities of the face
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to perform or manage:
airway and its emergency treatment
the principles of intermaxillary fixation
preoperative preparation of the orthognathic patient
postoperative follow-up of the orthognathic patient
INTERMEDIATE should be able to perform or manage:
intermaxillary fixation with arch bar and/or intermaxillary fixation (IMF) screws
LeFort I maxillary osteotomy and its plate osteosynthesis
chin augmentation with alloplastic materials
mandibular angle augmentation with alloplastic materials
mandibular angle reduction
non-surgical correction of osseous deformities of the facial skeleton
ADVANCED should be able to perform or manage:
vertical shortening of the maxilla
increasing the vertical height of the maxilla
anterior / posterior / clockwise / counterclockwise rotation of the maxilla
sagittal split ramus osteotomies and its plate/screw osteosynthesis
asymmetrical ramus osteotomies and its plate/screw osteosynthesis
sliding genioplasty and its plate/screw osteosynthesis
distraction osteogenesis using internal or external systems
alloplastic materials including bone substitutes used in the face
correction of soft tissue deformities related to the osseous pathology
early and late complications of orthognathic surgery

Ears
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 be able to 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 be able to 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 be able to 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 and ATTITUDES
BASIC should be able to 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 be able to 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
plan and interpret relevant investigations for the ear sinus, congenital ear deformities
ADVANCED should be able to 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 timeline for reconstruction
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to perform or manage:
excision of simple accessory auricles, cysts and small tumours on the ear with direct closure or skin grafting, intralesional steroid injection
repair of split earlobes with local flaps
repair of simple lacerations of the ear with or without cartilage repair
excision of Darwen's tubercle
INTERMEDIATE should be able to perform or manage:
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 or manage:
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 insetting, raising other local flaps for skin cover of framework, conchal cartilage graft harvest, carving and insetting into defect
various operations for ear lobe reconstruction

Genitourinary Surgery
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 be able to 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 be able to 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
diagnostics and management of micropenis
ADVANCED should be able to 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
surgical management of micropenis
CLINICAL SKILLS and ATTITUDES
BASIC should be able to 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 be able to 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 anomaly
ADVANCED should be able to 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 a hypospadias salvage/cripple patient with a view to surgical correction and develop a management plan
identify the patient with micropenis who can benefit from penis enlargement procedures
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to perform or manage:
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 or manage:
meatotomy
trimming of skin envelope following hypospadias repair
closure of GAP hypospadias repair
foreskin reconstruction
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
fat grafting to the penis
ADVANCED should be able to perform or manage:
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
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
penile lengthening / enlargement
fat grafting for penis
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 genital and perineal defects.
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
range of normal anatomy of and the variations of external genitalia (labia majora, labia minora, clitoris etc.)
psychological management of genital defects and their relation to sexuality, MDT approach
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, the victims of female genital mutilation (FGM)
INTERMEDIATE should be able to 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 be able to 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 – glansectomy and quilted thick SSG for reforming glans over existing corpora
Scrotum – tissue expansion, SSG, flaps – gracilis, Singapore technique
CLINICAL SKILLS and ATTITUDES
BASIC should be able to 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
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 be able to 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 or manage:
SSG, full thickness graft, jumping man, application of topical negative pressure dressing
INTERMEDIATE should be able to perform or manage:

reconstruction of perineal defects – local flap reconstruction of vagina/labia including lotus and gracilis, resurfacing penile shaft, groin dissection, coverage of exposed testes
simple scar release, labial adhesions release of the victims of FGM
ADVANCED should be able to perform or manage:
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, glansectomy for cancer, free flaps for major perineal defects
reconstruction the genitalia of female genital mutilation victims, e.g. scar release, clitoral lengthening, labia reconstruction, methods of sensory reconstruction
GENDER REASSIGNMENT SURGERY
OBJECTIVE
Acquire competence in the principles of management of gender reassignment
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
definition of gender identity disorders
diagnosis of gender dysphoria
issues incidence of second psychiatric diagnoses, need for psychosocial support pre-and postoperatively.
contraindications for surgery
international and national guidelines and requirements for the surgical management of sexual identity disorders. Multidisciplinary diagnostics of sexual identity disorders and gender dysphoria
the effects of hormonal therapy
the incidence of detransition
INTERMEDIATE should be able to demonstrate knowledge of:
techniques available for chest wall/ breast masculinisation/feminisation:
penile flap – glans reduced as clitoris, penile skin as flap for vagina, scrotum for labia / clitoral hood – usually two stages
modified McIndoe – SSG or FTSG from penis for vagina
others – bowel for vagina
Procedures for the breast and face
ADVANCED should be able to demonstrate knowledge of:
techniques available for female to male and male to female reassignment and gender non-confirming
mastectomy

phallus reconstruction method choice according to the patients' wishes and the realistic possibilities with his/her body. Differences between metoidioplasty and phalloplasty and the long term effects. Specific options for phallus reconstruction
random pattern abdominal tubed flap, pedicled flaps, and free flaps
urethral reconstruction options: tube within a tube, local flaps, SCIP, SSG, mucosal grafts
testicular implants
vaginectomy
facial feminising techniques
breast augmentation
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
work within an MDT and the ability to assess the psychological state of the patient
INTERMEDIATE should be able to demonstrate ability to:
develop the skills to arrange patient-centred 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 should be able to demonstrate 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 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 or manage:
raising local flaps
assessment of size of prosthesis needed
insertion of testicular prosthesis
INTERMEDIATE should be able to perform or manage:
elevation of complex flaps including, groin flap, radial forearm flap, abdominal tubed pedicle, SIEA flap and gracilis flap etc.
ADVANCED should be able to perform or manage:
partial surgical steps for gender reassignment surgery
specific operations for gender reassignment surgery

Hand Surgery
ALL ASPECTS OF SKIN AND SOFT TISSUE DISORDERS / 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 be able to 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
the ability to assess the patients' eligibility for surgery; general and psychosocial health, contraindications
INTERMEDIATE should be able to demonstrate knowledge of:
range, indications and principles of operations to treat conditions listed in this module
postoperative 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 major replantation
sciences of pathogenesis of Dupuytren's disease
ADVANCED should be able to 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 and ATTITUDES
BASIC should be able to demonstrate ability to:
assessment and non-operative management of the acute surgical patient including targeted hand-related history and hand examination

INTERMEDIATE should be able to demonstrate ability to:
devise management algorithms for the conditions covered in this section including investigations
ADVANCED should be able to demonstrate ability to:
analysis and diagnostic synthesis, judgement, surgical planning.
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to perform or manage:
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 or manage:
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 or manage:
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
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 joints 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 and ATTITUDES
BASIC should be able to 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 be able to demonstrate ability to:
manage more complex fractures of the hand and wrist,
manage distal radius and scaphoid fractures by standard techniques.
ADVANCED should be able to 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 or manage:

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 or manage:
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 or manage:
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
ligament stabilisation procedures for chronic problems of the, scapholunate, lunotriquetral CMC joints and midcarpal instability
bone transport
Should be able to use bone substitutes
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 arthritis 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 and ATTITUDES
BASIC should be able to 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 be able to 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 be able to demonstrate ability to:
detailed management algorithms for the conditions covered in this module including complex conditions.
TECHNICAL SKILLS AND PROCEDURES

BASIC should be able to perform or manage:
harvesting of iliac bone graft / radius bone graft,
simulation-based exercises of wrist arthroscopy
INTERMEDIATE should be able to perform or manage:
arthrodesis of DIPJ / PIPJ/ MCPJ,
trapeziectomy plus/minus soft tissue ligamentous reconstruction,
total wrist arthrodesis
Darrach's procedure
Sauvé-Kapandji procedure
diagnostic wrist arthroscopy
ADVANCED should be able to perform or manage:
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
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 and ATTITUDES

BASIC should be able to demonstrate ability to:
clinically assess the injured tendon and other tendon disorders
select use of relevant specialist imaging techniques such as ultrasound
INTERMEDIATE should be able to 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 be able to 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 or manage:
extensor tendon repair
flexor tendon repair (Zones III-V)
tendon graft harvest
extensor / flexor synovectomy
trigger digit release
Includes simulation-based exercises related to tendon surgery
INTERMEDIATE should be able to perform or manage:
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 or manage:
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
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 be able to 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 be able to 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 be able to 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
principles of migraine surgery
pharmacological and non-pharmacological methods for the relief of nerve-related pain problems
CLINICAL SKILLS and ATTITUDES
BASIC should be able to 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 be able to demonstrate ability to:
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 be able to 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 or manage:
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 or manage:
nerve decompression: cubital tunnel release (transposition / medial epicondylectomy), revision carpal tunnel release
nerve grafting for segmental nerve defect
ADVANCED should be able to perform or manage:
nerve decompression
ulna nerve in Guyon's canal
submuscular transposition of ulna nerve (cubital tunnel)
radial nerve in radial tunnel
median nerve in pronator tunnel
transposition of neuroma
wrist denervation
brachial plexus exploration (including OBP)
nerve grafting
neurotisation
intercostal nerve grafting
muscle transfer for reanimation
CONGENITAL 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 be able to 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 be able to 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 be able to 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 and ATTITUDES
BASIC should be able to 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 be able to demonstrate ability to:
to apply a working knowledge of the management algorithms to the conditions covered in this module
ADVANCED should be able to 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 or manage:
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 or manage:
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 or manage:
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 and Neck Surgery

BASIC SCIENCES and HEAD & NECK ASSESSMENT

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 be able to 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
anatomy of the skin-epidermal and dermal layers and appendageal 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, malignant 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, lentigines, angiomata
difference between telangiectasia and spider naevi
chronic wounds and pressure sores
INTERMEDIATE should be able to 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
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 be able to 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
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 and ATTITUDES
BASIC should be able to 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.
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 be able to 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
assess the chronic ulcer/wounds
recommend additional investigations to assess symptoms following inconclusive initial results
interpret and discuss cytological and histological biopsy reports
ADVANCED should be able to demonstrate:
skills of analysis and diagnostic synthesis, judgement and surgical planning pertaining to the topics covered in this module
interpret of any scans performed in particular PET, PET-CT and lymphoscintigraphy,
assess and formulate management plan for the large complex wound
formulate appropriate and timely management, investigations, treatment and follow up plan for a patient all types of benign and malignant skin lesions

TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to perform or manage:
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
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 or manage:
surgical incision / excision biopsy of intra-oral lesions
direct and indirect pharyngolaryngoscopy
examination of head & neck under anaesthesia
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 or manage:
sentinel lymph node biopsy
surgical incision / excision biopsy of intra-oral / laryngeal / pharyngeal lesions
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
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 be able to 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.
guidelines in treatment of non-melanoma skin cancers
understanding the MDT
knowledge of reconstructive options
INTERMEDIATE should be able to 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 be able to 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 and ATTITUDES
BASIC should be able to 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 be able to 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 be able to 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 or manage:
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 or manage:
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 or manage:
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
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 be able to 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 be able to 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 be able to 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 and ATTITUDES
BASIC should be able to demonstrate ability 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 be able to 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 be able to demonstrate ability to:
discuss a cancer diagnosis with patients
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 or manage:
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 or manage:
selective / modified radical neck dissection
regional flaps
ADVANCED should be able to perform or manage:
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
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 be able to 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 “lifeboat,” 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 be able to 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 be able to 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 and ATTITUDES
BASIC should be able to 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 be able to demonstrate ability to:
counsel patient regarding advantages and disadvantages of reconstruction - specifically setting realistic expectations, reconstruction as a process, template in-patient stays 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 be able to demonstrate ability to:
clinically assess complex reconstructive requirements and make decisions on appropriate management
interpret investigations and formulate management plans
undertake 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 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 or manage:
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 or manage:
pre-operative marking of patient
raising range of pedicled autologous flaps
in-setting of flap
harvesting vein graft
ADVANCED should be able to perform or manage:
microvascular anastomoses
flap salvage for failing flaps
flap shaping techniques
flap revision techniques
RECONSTRUCTION of SPECIFIC HEAD & 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 be able to 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 be able to 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 be able to 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 and ATTITUDES
BASIC should be able to 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 be able to demonstrate ability to:
discuss advantages and disadvantages of reconstruction - specifically setting of realistic expectation, reconstruction as a process, template in-patient stays and complications
understand importance of informed consent and joint decision making
take informed consent and joint decision making
manage complications of surgery in pre, peri and post-operative phases
ADVANCED should be able to 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 or manage:
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 or manage:
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 or manage:
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
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 be able to 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 be able to demonstrate knowledge of:
non-surgical treatments (neurotoxins, 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 be able to 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 and ATTITUDES
BASIC should be able to 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 be able to 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 be able to 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 or manage:
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 or manage:
cross facial nerve grafting
insertion of static slings
dynamic slings (Temporalis, masseter)
ADVANCED should be able to perform or manage:
free muscle tissue transfers 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 and lower blepharoplasties)

Lower Limb

ASSESSMENT and PRIMARY MANAGEMENT of 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 be able to 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 be able to 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 be able to 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 and ATTITUDES
BASIC should be able to 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 be able to 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 or manage:
application of appropriate dressings in emergency room
reduction of fracture in emergency department
application of a plaster cast
INTERMEDIATE should be able to perform or manage:
measure compartment pressures and interpret results
ADVANCED should be able to perform or manage:
stabilise associated injuries and bleeding
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 be able to 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 be able to 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 be able to 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 and ATTITUDES
BASIC should be able to 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 be able to demonstrate ability to:
manage more complex fractures
formulate treatment plan for degloving injuries, especially multiplanar degloving
ADVANCED should be able to demonstrate ability to:
recognise those injuries that would benefit from primary amputation
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to perform or manage:
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 or manage:
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 or manage:
perform amputation of non-salvageable limbs
SOFT TISSUE RECONSTRUCTION
OBJECTIVE
Acquire competence in the planning and execution of appropriate soft tissue cover of open tibial fractures
KNOWLEDGE
BASIC should be able to 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 be able to demonstrate knowledge of:

options available for fracture fixation and tailoring soft tissue management accordingly
planning and prioritising treatment within an MDT setting.
ADVANCED should be able to 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 and ATTITUDES
BASIC should be able to 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 demonstrate ability 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 be able to 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 or manage:
direct closure
skin graft
temporary dressings – negative pressure and antibiotic bead pouch
exposure of recipient vessels in leg
INTERMEDIATE should be able to perform or manage:
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 or manage:
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
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 be able to 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 be able to 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 be able to 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 and ATTITUDES
BASIC should be able to demonstrate ability to:
control bleeding

interpret angiograms
INTERMEDIATE should be able to demonstrate ability to:
clinically assess and prepare management algorithms for the conditions covered in this module
counsel a patient for limb amputation
ADVANCED should be able to 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 or manage:
exposure of vessels
insertion of shunts
harvesting vein graft
application of skin graft to amputation stump if required
INTERMEDIATE should be able to perform or manage:
vein graft for vascular injury
uncomplicated transtibial amputation
-uncomplicated through knee and transfemoral amputation.
ADVANCED should be able to perform or manage:
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
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 be able to 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 be able to demonstrate knowledge of:
the management of all complications following soft tissue reconstruction including recognition of skeletal complications.
ADVANCED should be able to demonstrate knowledge of:

basic science and evidence-base underpinning the management of complications
orthopaedic principles of managing delayed union and non-union
CLINICAL SKILLS and ATTITUDES
BASIC should be able to 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 be able to 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 be able to 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 or manage:
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 perform or manage:
take back free flap to theatre with consultant assistance.
ADVANCED should be able to perform or manage:
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
PAEDIATRIC INJURIES and OUTCOME MEASURES
OBJECTIVE
Acquire competence in the diagnosis and management of children with lower limb injuries
KNOWLEDGE
BASIC should be able to 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 be able to 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 be able to demonstrate knowledge of:
management of paediatric lower limb injuries and the specific bone and soft tissue considerations needed regarding 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 and ATTITUDES
BASIC should be able to 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 be able to demonstrate ability to:
plan management algorithms for the paediatric patient with lower limb injury.
ADVANCED should be able to 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 perform or manage:
stabilise the child with lower limb injury for safe transfer to specialist centre
INTERMEDIATE should be able to perform or manage:
primary debridement and application of temporary wound dressings in theatre
ADVANCED should be able to perform or manage:
appropriate reconstruction of soft tissue defect including all the techniques available

Lymphatics and lymphedema
LYMPHATIC SURGERY
OBJECTIVE
Acquire competence in the diagnostics and management of lymphatic disorders, lymphedema and lipedema
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
normal anatomy and physiology of the lymphatic system
differential diagnostics of secondary lymphedema due to cancer, surgery, trauma or infection
differential diagnostics of lipedema
conservative treatment of lymphedema, e.g. weight loss, exercises, bandaging, manual lymphatic drainage, compression garments
national and international guidelines in the treatment of lipedema and lymphedema
INTERMEDIATE should be able to demonstrate knowledge of:
the different imaging techniques available for evaluating the lymphatic system, for example ICG fluorography, lymphoscintigraphy, lymphoMRI
the different techniques for assessing tissue fat and fluid content
personalized planning of the conservative treatment of lymphedema
ADVANCED should be able to demonstrate knowledge of:
differential diagnostics of primary lymphedema, associated genetic syndromes
surgical options available
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
perform a clinical examination of a lymphedema or lipedema patient
differentiate lipedema from lymphedema
inform the patients of the pros and cons of reductive surgery, liposuction and excisions
prescribe first line conservative treatment, compression and advice on the benefits of weight loss and exercises
INTERMEDIATE should be able to demonstrate ability to:
perform an ICG fluorography examination and interpret the result
draw conclusions from a lymphoscintigraphy or lymphoMRI images
discuss and explain the diagnosis and findings to the patient and consult an MDT if necessary
prescribe individualized permanent conservative treatment of lymphedema,
ADVANCED should be able to demonstrate ability to:
diagnose rare lymphatic disorders and consult an international MDT if necessary
discuss and explain the available surgical options to a primary lymphedema patient according to the diagnosis and findings
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to perform or manage:
prescribe individualized first line conservative treatment of lymphedema

perform liposuction for lipedema and lymphedema
ICG fluorography, injection of dye and interpretation of findings
INTERMEDIATE should be able to perform or manage:
vascularised lymph node transfer (VLNT) from inguinal nodes
Charles, Homans, Thompson, Sistrunk procedures
ADVANCED should be able to perform or manage:
lymphaticovenous anastomosis
lympholymphous or lymphatic to node anastomosis
microvascular breast reconstruction combined with VLNT
VLNT from other donor sites, for example thoracodorsal, submental, supraclavicular, omental nodal basins

Microsurgery
MICROSURGICAL REPAIR of the VESSELS SUPRAMICROSURGERY
OBJECTIVE
Acquire competence in the microsurgical repair of traumatically injured vessels as well as anastomosis of the vessels in free tissue transfers
precise competence in the microsurgical repair of vessels having inner diameter less than 1 mm
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
anatomy, embryology, physiology of skin
blood circulation types of the skin, soft tissues, and bones
physiology of the microcirculation
pathophysiology of coagulation
microsurgical suture materials
using magnification systems
transfer of the amputated part
INTERMEDIATE should be able to demonstrate knowledge of:
principles of microvascular surgery
selection of microsurgical suture materials
room setup for microvascular surgery
operation principles and optics of the operation microscope and loupes
physiology of ischemia and reperfusion injury
thrombosis and thrombolytic pharmacological agents
amputation types
principles of replantation
replantation of a clean-cut single digit
techniques to raise free single tissue transfers
ADVANCED should be able to demonstrate knowledge of:
all aspects of ischemia and reperfusion injury
management of no-reflow phenomenon
management of complicated replantations
techniques to raise all types of free tissue transfers
persistent thrombosis
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
hand-related history taking and hand examination
prepare free tissue transfer patient
INTERMEDIATE should be able to demonstrate ability to:
manage minor amputations
management of thrombosis
using thrombolytic agents
ADVANCED should be able to demonstrate ability to:
design and use management algorithms, judgement, and surgical planning
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to perform or manage:
fingertip reconstruction
arterial and venous repair of the small and medium vessels

INTERMEDIATE should be able to perform or manage:
whole process of the replantation of a clean-cut single digit
techniques to raise free single tissue transfers (e.g. radial forearm flap)
ADVANCED should be able to perform or manage:
complicated replantations
raising all types of free tissue transfers including composite tissues
microsurgical repair of vessels having inner diameter less than 1 mm
MICROSURGICAL REPAIR of the NERVES
OBJECTIVE
Acquires competence in the diagnosis and management of all aspects of nerve related disorders including nerve compression, nerve palsy and traumatic nerve injuries
Acquire competence in the microsurgical repair of traumatically injured nerves as well as coaptation of the nerves in free tissue transfers
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
topographic anatomy, embryology, physiology of peripheral nerves
blood circulation of the nerves
physiology of the nerve regeneration
pathophysiology of nerve compressive disorders
micro suture materials
using magnification systems
transfer of the amputated part
INTERMEDIATE should be able to demonstrate knowledge of:
principles of microvascular surgery
selection of micro suture materials
operation principles and optics of the operation microscope and loupes
physiology of the ischemia and reperfusion injury
problems in nerve regeneration
mechanisms of brachial plexus injury
pathophysiology and classification of Complex regional pain syndrome (CRPS) and neuropathic pain problems
ADVANCED should be able to 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
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
assessment of the peripheral nerves
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 be able to demonstrate ability to:
assessment of nerve function using specific equipment used in rehabilitation and assessment (such as Semmes Weinstein filaments)
assessment of the cranial nerves
ADVANCED should be able to 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 or manage:
peripheral nerve repair including digital nerves
nerve graft harvest
simple decompression of nerve entrapment syndromes (e.g. carpal tunnel release)
INTERMEDIATE should be able to perform or manage:
nerve repair in neurocutaneous free tissue transfers
complicated decompression of nerve entrapment syndromes
nerve grafting for segmental nerve defect
ADVANCED should be able to perform or manage:
brachial plexus exploration
nerve grafting
neuroma
neurotization techniques
vascularised nerve transfers
free muscle transfer for facial reanimation
MICROSURGICAL REPAIR of the LYMPHATICS LYMPHATICOVENOUS / LYMPHATICOLYMPHATIC REPAIRS
OBJECTIVE
Acquires competence in the diagnosis and management of all aspects of lymphatic disorders including congenital and iatrogenic forms
Acquire competence in the microsurgical repair of lymphatics, lymphaticovenous, and/or lymphaticolymphatic repairs
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
normal anatomy and physiology of the lymphatic system
differential diagnostics of primary or secondary lymphedema
micro suture materials
using magnification systems
INTERMEDIATE should be able to demonstrate knowledge of:
the different imaging techniques available for evaluating the lymphatic system, for example ICG fluorography, lymphoscintigraphy, lymphoMRI, etc.
ADVANCED should be able to demonstrate knowledge of:
differential diagnostics of primary lymphedema and associated genetic syndromes
surgical treatment alternatives
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
perform a clinical examination of a lymphedema patient
inform patients about pros and cons of microsurgical repair of lymphatics
inform patients about the first line conservative treatment
INTERMEDIATE should be able to demonstrate ability to:
perform an ICG fluorography examination and interpret the result
Draw conclusions from a lymphoscintigraphy or lymphoMRI images
analyses imaging techniques available for evaluating the lymphatic system and

discuss and explain the diagnosis and findings to the patient
inform patients about the alternative treatments
ADVANCED should be able to demonstrate ability to:
discuss and explain the available surgical options to the lymphedema patient according to the diagnosis and findings
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to perform or manage:
ICG fluorography, injection of dye and interpretation of findings
mounting and dismantling the parts of the robotic system
INTERMEDIATE should be able to perform or manage:
vascularised lymph node transfer (VLNT)
experimental use of robotic systems
ADVANCED should be able to perform or manage:
lymphaticovenous anastomosis
lympholymphous or lymphatic to node anastomosis
microvascular breast reconstruction combined with vlnt
VLNT from specific donor sites, for example thoracodorsal, submental, supraclavicular, omental nodal basins
flap harvesting using robotic systems
microsurgical vessel and nerve repair using robotic systems

Pelvic floor
PELVIC RECONSTRUCTION
OBJECTIVE
Acquire competence in the principles of management including reconstruction of the pelvic defect.
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
types and basic management of various types of pelvic / genitourethral 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 be able to 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 flaps.
pros and cons of various flaps for various defects
ADVANCED should be able to 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 Fournier disease
urethral reconstruction options following malignancy
trauma, including flap, FTSG, transplantation of urethra, tubed bladder wall
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
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 should be able to demonstrate ability to:
the skills to arrange patient-centred 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 should be able 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 or manage:
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 or manage:
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 or manage:
specific operations for perineal reconstruction such as:
penile amputation for carcinoma
urethral reconstruction for stricture or trauma
vaginal reconstruction following malignancy

Skin and Soft Tissue Surgery
BASIC SCIENCES and SKIN ASSESSMENT
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 be able to demonstrate knowledge of:
anatomy of the skin-epidermal and dermal layers and appendageal structures
embryology of the skin
histopathological appearance of skin
anatomy of the body surface, in particular the head and neck, hands, nails and feet
vascular, neuronal and lymphatic supply / drainage of the head & neck, trunk and limbs, blood supply of the skin
diagnostic imaging of skin neoplasia X-rays, CT, MRI, US, PET-CT, and imaging assisted diagnostic biopsy
standard skin stains used for histology
origin of stains used and for what purpose
immunocytochemistry and cytogenetic techniques
common benign skin disorders-hidradenitis suppurativa, epidermal cysts, lipomas, vascular and congenital malformations
melanocytic naevi including giant, actinic lesions and epidermal/dermal lesions etc., risks of malignant transformation in chronic lesions, giant melanocytic naevi and Marjolin's ulcers
specific history and diagnostic features (clinical and non-clinical) of benign skin lesions (pigmented and non-pigmented), dysplastic naevi, lentigo maligna, melanoma and non- melanoma skin cancers (basal cell carcinoma and squamous cell carcinoma), dermatofibroma, keratoacanthoma, pilomatrixoma, actinic keratoses, Bowen's disease
clinical features of dermatitis artefacta, folliculitis, pyogenic granuloma, inflammatory skin conditions (hidradenitis and acne vulgaris), fungal skin lesions, lentigines, angiomata,
difference between telangiectasia and spider naevi,
chronic wounds and pressure sores.
INTERMEDIATE should be able to 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 be able to 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 and ATTITUDES
BASIC should be able to 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
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 be able to 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 be able to 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 or manage:
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 or manage:
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 or manage:
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
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 be able to 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
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 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 be able to 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 be able to 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 and ATTITUDES
BASIC should be able to 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 e.g., 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, (e.g., head and neck MDM)
INTERMEDIATE should be able to 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 be able to demonstrate ability to:
interpret FNA/USS and distinguish a primary pigmented lesion from a primary melanoma or a metastatic melanoma
formulate management plan using skills of analysis, diagnostic synthesis and judgement
discuss complex treatment scenarios with patients including discussion of all options
take informed consent detailing advantages and disadvantages of proposed treatment
discuss a cancer diagnosis with patients
advanced communication skills, breaking bad news, giving prognostic information to the patient
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to perform or manage:
excision biopsy of lesion and incision biopsy of skin lesions-when indicated
Fine Needle Aspiration / 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 or manage:
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 dissections
regional flaps – various including rotational, advancement, axial pattern
ADVANCED should be able to perform or manage:
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

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 be able to 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, i.e., 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 be able to 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, CO_2 laser ablation and minimally invasive techniques including laparoscopic and robotic surgery
Staged Histological Clearance (SHC), isolated limb infusions, ECT, isolated limb perfusion, CO_2 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 be able to 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 and ATTITUDES
BASIC should be able to 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 tumours
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 be able to 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 be able to 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 or manage:
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 or manage:
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 or manage:
pelvic and head and neck dissections

free flap surgery
reconstruction of aesthetic units (nose / eyelids / ears / lips)
isolated limb perfusion
mapping biopsy techniques Staged Histological Clearance (SHC)
RECONSTRUCTIVE TECHNIQUES for SKIN and SOFT TISSUE SURGERY
OBJECTIVE
Acquire competence in the planning, execution and management of appropriate soft tissue reconstruction of skin and soft tissue defects
KNOWLEDGE
BASIC should be able to 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 “lifeboat,” donor site considerations)
principles of microsurgery
INTERMEDIATE should be able to 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
use of common skin substitutes
ADVANCED should be able to 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 and ATTITUDES
BASIC should be able to 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 be able to demonstrate ability to:
discuss advantages and disadvantages of reconstructive options with patients specifically setting realistic expectations, advising on reconstruction as a process 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 postoperative period and in the clinic
use of common skin substitutes
ADVANCED should be able to 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 or manage:
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 or manage:
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 or manage:
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
SCARRING, WOUNDS, and other SURGICAL CONDITIONS of the SKIN and SOFT TISSUE
OBJECTIVE
Acquire competence in the management of the patient with the longer-term outcomes of benign and malignant skin conditions / postsurgical scarring and chronic wounds
KNOWLEDGE
BASIC should be able to 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 be able to demonstrate knowledge of:
dermoscopy and imaging techniques of the skin
Marjolin's ulcer, pilomatrixoma, DFSP, hidradenitis suppurativa, acne scarring, inflammatory skin conditions
ADVANCED should be able to 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 and ATTITUDES
BASIC should be able to demonstrate ability to:
assess the skin using dermoscope
recognise infection, induration, lymphoedema, seroma, post radiotherapy recurrence in complex scars
INTERMEDIATE should be able to 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 be able to 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 or manage:
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 or manage:
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 or manage:
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
MULTIDISCIPLINARY TEAM WORKINGS
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 improving outcomes guidance and peer review. An understanding of research and audit in local, national, and international settings
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
Guidelines 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 be able to 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 be able to 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 and ATTITUDES
BASIC should be able to demonstrate ability to:
use communication and referral pathways to specialist MDM's
INTERMEDIATE should be able to 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 be able to 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-centred 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 or manage:
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 or manage:
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 or manage:
head and neck resections
ILI, ILP, CO_2 laser
minimally invasive surgical methods of isolated metastases
pelvic resections
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 be able to 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 and ATTITUDES
BASIC should be able to 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 demonstrate ability 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 demonstrate ability to:
deploy skills of analysis and diagnostic synthesis, judgement, and surgical planning to the complex wound patient
advice 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-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, 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 or manage:
primary debridement and application of temporary wound dressings in theatre
ADVANCED should be able to perform or manage:
debride complex wound

Sarcoma

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 PRAS trainees are expected to have knowledge and exposure to soft tissue sarcoma diagnosis and management.
KNOWLEDGE
BASIC should be able to 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 be able to 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
Should demonstrate knowledge of:
relevant imaging modalities for different sarcoma
methods for obtaining histological diagnosis
Should demonstrate knowledge of assessment of patients presenting with sarcoma:
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 be able to demonstrate knowledge of:
indications for different resection modalities in the management of sarcomas, e.g., marginal, wide, compartectomy etc

current concept of extremity preserving surgery with adjuvant radiotherapy compared with past concepts of compartectomy and amputation to achieve acceptable local recurrence rates
Should demonstrate knowledge of:
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
Should demonstrate knowledge of:
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 and ATTITUDES
BASIC should be able to 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 be able to demonstrate ability to:
interpret imaging as part of planning reconstructive options
Should demonstrate ability to:
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 be able to demonstrate ability to:
work as a member of the multidisciplinary team and make appropriate referrals to related professionals.
apply 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 or manage:
direct closure of wound
harvesting and insetting of skin grafts
raising of local fasciocutaneous flaps
INTERMEDIATE should be able to perform or manage:
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 fasciotomies for complications of extremity surgery
ADVANCED should be able to perform or manage:
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

Vascular anomalies

VASCULAR ANOMALIES
OBJECTIVE
Competence in the assessment, surgical management and aftercare of vascular anomalies
KNOWLEDGE
BASIC should be able to 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 be able to demonstrate knowledge of:
abnormalities and syndromes associated with haemangiomas (e.g., PHACE syndrome, Kasabach- Merritt syndrome, Maffucci's syndrome) and vascular malformations (e.g., 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 e.g., corticosteroids (systemic and intralesional), propranolol and possible side effects
principles of management of vascular tumours and malformations
problems related to multiple lesions e.g., haemangiomas including visceral or venous malformations
different types of laser treatment for vascular malformations e.g., 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 be able to demonstrate knowledge of:
difficult to classify lesions e.g., 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, e.g., 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 e.g., Klippel-Trenaunay syndrome and the importance of preserving venous drainage
CLINICAL SKILLS and ATTITUDES
BASIC should be able to 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 be able to 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 e.g., radiology, dermatology, ophthalmology ENT
ADVANCED should be able to 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 perform or manage:
use a handheld Doppler for diagnostic purposes.
INTERMEDIATE should be able to perform or manage:
debulking of infantile haemangioma
excision of small vascular malformation
injection of steroids into infantile haemangioma

Technology
ENERGY-BASED DEVICES
OBJECTIVE
Acquire knowledge in the working principles of the energy-based devices.
Acquire competence in using energy-based devices in terms of their efficacy and avoiding their potential complications.
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
working principles of the energy-based devices
INTERMEDIATE should be able to demonstrate knowledge of:
the differences and acting mechanism of the energy-based devices
ADVANCED should be able to demonstrate knowledge of:
selection of energy-based devices for different indications
Laser physics, different types of Lasers, their mechanism of action and indications
Radiofrequency, High Intensity Focused Ultrasound, plasma, and polarization technologies
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
examination of the patient in terms of skin type, elasticity, subcutaneous fat thickness
INTERMEDIATE should be able to demonstrate ability to:
select the appropriate energy-based devices according to the patient's needs
ADVANCED should be able to demonstrate ability to:
plan appropriate treatments
management of the potential complications related to the energy-based devices
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to perform or manage:
basic devices such as needling
INTERMEDIATE should be able to perform or manage:
Radiofrequency, plasma, and polarization technologies for selected patients
ADVANCED should be able to perform or manage:
Selection of different type of Lasers for anti-ageing, skin resurfacing, benign skin conditions, and laser lipolysis
ROBOTIC SURGERY
OBJECTIVE
acquire knowledge in the working principles of robotic systems, their advantages and disadvantages
acquire knowledge in the parts of robotic systems
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
working principles of robotic systems
indications for robotic systems
INTERMEDIATE should be able to demonstrate knowledge of:

initial setup of a robotic system including operating field
team and room setup for robotic surgery
ADVANCED should be able to demonstrate knowledge of:
using robotic systems for flap harvesting
using robotic systems for microsurgery
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
select patients for robotic surgery
discuss the advantages and disadvantages of the robotic surgery
INTERMEDIATE should be able to demonstrate ability to:
prepare patients for the robotic surgery
ADVANCED should be able to demonstrate ability to:
preoperative and postoperative management of patients
full setup of the robotic system including team management and room and device setup
TECHNICAL SKILLS AND PROCEDURES
BASIC should be able to perform or manage:
mounting and dismantling the parts of the robotic system
INTERMEDIATE should be able to perform or manage:
experimental use of robotic systems
ADVANCED should be able to perform or manage:
flap harvesting using robotic systems
microsurgical vessel and nerve repair using robotic systems

Psychological management

PSYCHOLOGICAL MANAGEMENT OF 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 should be able to demonstrate knowledge of:

the psycho-social issues that may follow from trauma, disease and surgery including social anxiety, depression, bullying, prejudice isolation and exclusion.

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 should be able to demonstrate knowledge of:

the factors that predict patient ability to cope with surgical treatment

defining 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 and ATTITUDES

BASIC should be able to demonstrate ability to:

elicit signs and symptoms of distress and anxiety in patient undergoing PRAS

make an appropriate referral to a clinical psychologist or other supporting member of the multidisciplinary team

INTERMEDIATE should be able to demonstrate ability to:

provide 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

demonstrate confidence to elicit psychological and social needs in a range of settings.

TECHNICAL SKILLS AND PROCEDURES

Not applicable

Medicolegal aspects
INFORMED CONSENT and MEDICOLEGAL RESPONSIBILITIES
OBJECTIVE
To learn how to prepare an individualized informed consent for each surgical intervention and draw the borders of medicolegal responsibilities
KNOWLEDGE
BASIC should be able to demonstrate knowledge of:
what each informed consent should consist of, and professionally based standards of medical care determined by the evidence provided by healthcare experts
INTERMEDIATE should be able to demonstrate knowledge of:
obtaining a detailed informed consents for complicated cases
being aware of medicolegal responsibilities in terms of clinical governance and practical issues
CLINICAL SKILLS and ATTITUDES
BASIC should be able to demonstrate ability to:
prepare a detailed informed consent for standard cases
having a statutory duty placed upon them to maintain and continuously improve clinical standards through clinical governance
INTERMEDIATE should be able to demonstrate ability to:
prepare a detailed informed consent for complicated cases
using evidence-based clinical guidelines in determining the legal standards of healthcare
TECHNICAL SKILLS AND PROCEDURES
Not applicable

Specialty-specific Entrustable Professional Activities

Safely assimilates new technologies and advancing techniques in the field of PRAS into practice.

Description Able to maintain familiarity with advances in techniques, and to assimilate these into practice as appropriate. Critically evaluates new techniques presented to them and disseminates any advances that they have been able to achieve.
Example descriptors: • Critically appraises evidence and published literature. • Demonstrates an open-minded approach to new techniques. • Attends and is interested in conferences and courses. • Demonstrates awareness of the processes surrounding the safe introduction of new technologies or techniques • Demonstrates the ability to appraise the cost-effectiveness of particular techniques

Critical conditions for which correct management is mandatory

As stated in the introduction, PRAS encompasses a large number of individual conditions as described in the syllabus. Assessment of a trainee's ability to manage these is by the supervision level decisions made when assessing the shared and specialty-specific EPAs, and towards the conclusion of training, a standardised examination.

PRAS also has a list of critical conditions which are felt to be of significant importance for patient safety and to demonstrate a safe breadth of practice.
To ensure that trainees have the necessary skills, these critical conditions should be assessed individually by means of some form of practically reviewed management. Various descriptions of such assessments exist, but the terms Case Based Assessment (CBD) and Clinical Evaluation Exercise (CEX) are such versions which are suitable for widespread adoption by assessment authorities.

Critical conditions:

- Burns assessment and emergency management.
- Necrotising fasciitis and other severe soft tissue infections
- Emergency management of complex trauma to the lower limb, including open fractures and major degloving injuries

- Emergency management of complex trauma to the upper limb including replantation and revascularisation
- Compartment syndrome
- Emergency management of post-operative complications including microvascular salvage

Index procedures

The curriculum requires technical skills to be achieved across a wide range of operative procedures as described in the syllabus. Assessment of a trainee's ability to carry out this full range of procedures is covered by the supervision level decisions made when assessing the shared and specialty-specific EPAs. These assess not only the necessary technical skills, but the totality of capabilities required to carry them out.

PRAS also has a list of *index procedures*, which are felt to be of significant importance for patient safety that independent practitioners should be able to demonstrate a safe breadth of practice in an 'on call' rota. Competence within these index procedures should be assessed individually by means of Procedure Based Assessments (PBAs). By the end of advanced training, there should be evidence that an indicative number of *three or more* operations in each procedure group has been assessed and recorded at the level of a day-one consultant (level 4 PBA - see below for definition). The PBA will both provide formative feedback to the trainee and feed into the summative assessment of the Training Programme Director (see definition of a TPD below) and whichever national body is responsible for accrediting training and final competence.

Elective procedures:

a. Dupuytren's contracture surgery*
b. Lymph node basin dissection
c. Cleft surgery
d. Free tissue transfer
e. Aesthetic surgery
f. Breast reconstruction
g. Excision skin lesion and flap/graft reconstruction

Emergency procedures:

a. Zone 1-2 flexor tendon repair*
b. Hand fracture fixation*
c. Nerve repair (except brachial plexus)
d. Burns resuscitation
e. Burns - early excisional or emergency operations (escharotomy etc).
f. Microvascular anastomoses
g. Lower limb trauma procedures

Definition of Procedure Based Assessment (PBA) required for Level 4 competence.

a: Procedure performed fluently without guidance or intervention.
b: As 4a, but also able to anticipate, avoid and/or deal with common problems/complications.

*It is fully understood that some UEMS nations do not include hand and upper limb Surgery as part of the core curriculum for specialist PRAS training. However, the majority of nations do include this area of practice within the expected management of all specialists entering independent practice, and so achievement of competence in these core areas is agreed within the PRAS Section as being a full part of PRAS training.

c. Assessment and evaluation

Definition of assessment, description of formative and summative assessments:
Assessment: Process by which information is obtained relative to some known objective or goal. (a broad term that includes testing)
Evaluation: Inherent in the idea of evaluation is "value." Process designed to provide information that will help us make a judgment about a given situation.

d. Governance

The over-riding Governance of any Training Programme will ultimately fall to the National and Regional authorities responsible for the safe administration of health care for the population as a whole. In practice, most Training Programmes are organised within given institutions under the auspices of Training Committees, subject to the requirements of General Medical Councils and other statutory bodies maintaining patient safety at all times and charged with maintaining and raising standards progressively.

At a Unit level, a Training Programme Director (TPD) is required to take responsibility for Programme organisation, implementation, and Trainee selection and subsequent monitoring and oversight (including responsibility for well-being within the remit of such a programme). Regular meetings between Training Director and Trainee are mandatory to monitor feedback from trainers, the trainee themselves, and to offer guidance and support for development as well as intervention when problems arise.

Documentation of all stages of Training is mandatory, including initial selection criteria and performance, regular records of performance and achievements as well as feedback of adverse outcomes, and all aspects of educational activity that the Trainee has attended and been directed towards.

Trainees are required to maintain a complete and accurate logbook of all clinical and educational activity. This level of documentation has now become a norm within Life-long learning for all professionals with a responsible approach towards self-development, maintenance of standards, and reflective evaluation of outcomes.

II. TRAINING REQUIREMENTS FOR TRAINERS

1. Process for recognition as trainer

a. Requested qualification and experience.

All Trainers at Clinical Supervisor (CS) or TPD level or above must be fully Accredited Specialists in PRAS with at least 5 years independent practice since Specialist registration. They should possess the Higher Surgical qualification appropriate for their home nation (EBOPRAS, FRCS Plast or equivalent) and be of Good Standing without any existing complaint or sanction issued by their national Medical Council.

b. Core competencies for trainers

Special Qualifications of the trainers when required (if not covered by EU Directive on Professional Qualifications)

Training Programme Directors (TPDs)

TPDs are responsible for managing the specialty training programmes, ensuring they deliver the specialty curriculum.

TPDs are responsible for:

- Organising, managing and directing the training programmes, ensuring that the programmes meet curriculum requirements.
- Identifying, appointing and supporting local faculty who may have roles designated such as Assigned Educational Supervisors (AESs) and Clinical Supervisors (CSs). All those engaged within training of juniors should have specific training as necessary, including such generic aspects as training in equality and diversity, and safeguarding, as well as the responsibility for offering feedback to all trainers on the quality of their performance.
- Ensuring a policy for career management and advice covering the needs of trainees in their placements and programmes
- Overseeing progress of individual trainees through the levels of the curriculum, ensuring learning objectives are set, appropriate assessments are being undertaken and that appropriate levels of supervision and support are in place.
- Helping those with ultimate responsibility for training in the management of those trainees who run into difficulty, identifying remedial placements and resources where required.
- Providing induction for trainees entering specialty programmes
- Monitoring the quality of the training programme and producing appropriate quality reports (including the quality of trainer assessments and feedback) for those with ultimate responsibility for training standards nationally.
- Ensuring access to trainee data is kept confidential.

Clinical Supervisor (CS)

CSs are consultant surgeons responsible for delivering teaching and training under the delegated authority of the TPD and/or higher authority for training standards.

CSs are responsible for:

- Ensuring patient safety in relation to trainee performance
- Facilitating and managing regular clinical procedure assessments (such as Workplace Based Assessments, and Clinical examinations) on trainees, and providing verbal and written feedback.
- Consulting closely with other colleagues, (within and beyond the immediate Department of PRAS) with whom the trainee is working, regarding the progress and performance of trainees.
- Keeping the TPD and others involved in the training programme informed of any significant problems that may be developing of affecting one or more trainees.
- Ensuring that access to trainee data is kept confidential.

The role of CS comes under the umbrella of the Professionalised Trainer further described below.

The role of assessors

Assessors carry out a range of work-based assessments and provide verbal and written feedback to trainees. Assessments during training are usually carried out by CSs, who will be responsible for a written report, recommending future supervision level and providing detailed formative feedback to trainees with reference to the EPAs (Entrustable Professional Activities; see below). Other members of the surgical team, including senior trainees, senior nurses, allied disciplines such as specialised therapists, and doctors from other medical disciplines may all assess trainees in areas where they have particular expertise. Those who are not medically qualified may also act as assessors for a trainee's Multi-Source Feedback (MSF).

Assessors are responsible for:

- Carrying out Work Based Assessments (WBAs) according to their area of expertise and training.
- Providing constructive verbal feedback to trainees, including an action plan, immediately after the event
- Ensuring access to trainee data is kept confidential.
- Providing written feedback and/or validating WBAs in a timely manner.

The role of the Trainee

Trainees are the learners who have been selected into a specialty training programme. Some nations will have other surgeons who have registered to use the curriculum and learning portfolio as learners, but not be part of a register national

training programme. They should be expected to have the same responsibilities for maintenance of standards of care, as well as personal development and portfolio collection. All trainees/learners have a responsibility to recognise and work within the limits of their professional competence and to consult with colleagues as appropriate. Throughout the curriculum, great emphasis is laid on the development of good clinical judgement, which includes the ability to know when to seek assistance and advice, and to learn when not to operate as well as seek advice from other disciplines. Trainees/learners must place the well-being and safety of patients above all other considerations. They are required to take responsibility for their own learning and to be proactive in initiating appointments to plan, undertake and receive feedback on learning opportunities.

Trainees/learners are responsible for:

- Engaging with opportunities for learning
- Creating a learning agreement and initiating meetings with their Trainers.
- Raising concerns with their TPD (or confidential Mentor if sensitivities arise with the direct line to TPD), about any problems that might affect training.
- Initiating regular clinical work-based assessments with appropriate assessors.
- Undertaking self and peer assessment
- Undertaking regular reflective practice
- Maintaining an up-to-date learning portfolio
- Working as part of the surgical and wider multi-professional team.

2. Quality management for trainers

Quality Management of the Curriculum

UEMS PRAS Section acts as an advisory body to participatory nations on all matters related to plastic reconstructive and aesthetic surgical training. It has no statutory powers but has representation from all national training states within the EU and affiliates, as well as from all the substantive Specialty Associations and Societies representing the interests of both patient groups as well as practitioners and trainees.

EBOPRAS is the examination authority established under separate legal and financial jurisdiction within Europe and is responsible for the maintenance of the curriculum standards and assessment criteria, as well as the effective and fair running of the examination on a regular basis.

The quality assurance is maintained by:

- regular review of examination standards by the EBOPRAS Board
- close monitoring of pass rates and performance indicators across and within cohorts of trainees from individual nations.
- Monitoring of examiner performance with intra and inter-rater evaluation.

Curriculum development

In a discipline with fast changing techniques and understanding, it is essential that this specialty is agile and adept at incorporating innovations and changed in established management into the curriculum and subsequent assessment of trainees. That responsibility falls to the Board of EBOPRAS, which liaises closely with UEMS (PRAS) Section Executive Committee and General Assembly delegates to ensure that rapid feedback of change is fed into the system.

Equality and diversity implications are considered throughout the development of curricula in association with trainees and trainers through specific development events, which feed into impact assessments, noting any potential adverse effects on learners with protected characteristics. Curricula are also developed through regular meetings with National Medical Councils and other bodies responsible for standard maintenance of standards, helping to refine the curriculum approach and ensuring that the standards for curricula are met and identify future developments.

Trainee perspective

It is mandatory that in contemporary professional training, the views of trainees are sought actively, for reflective consideration by trainers and authorities to ensure fair and reasonable management of any feedback, however constructive or critical it might be.

III. TRAINING REQUIREMENTS FOR TRAINING INSTITUTIONS

(if not covered by EU Directive on Professional Qualifications)

Clinical institutions offering specialty training in plastic surgery should be affiliated as a whole or on a personal basis (trainer) with an internationally recognized medical school (https://imed.faimer.org/) and/or a competent national medical board. Training institutions should have organized teaching programs, instruction in basic sciences, administration and management, and audit meetings.

Process for recognition as training centre

a. Requirement on staff and clinical activities

A 'Training Centre' is where trainees are educated and supported to develop their Plastic Reconstructive and Aesthetic Surgical competencies.

A designated 'Centre' will often include multiple sites, including some which are 'condition-specific', and offer certain defined subject domains which might not be available within the main teaching institution. Plastic Reconstructive and Aesthetic Surgical training may take place in a single institution or in a network of institutions working together to provide training in the full spectrum of clinical conditions and skills detailed in the curriculum.

Academic training is also an essential aspect of good surgical practice, and each Training Centre must be able to deliver exposure to such an approach. Each participating institution in a network should be individually recognised and regularly reviewed as a provider of whichever defined section of the curriculum is concerned.

Training will be led and managed by an accredited specialist/consultant Plastic Reconstructive and Aesthetic Surgeon, as defined in the preceding section(s).

b. Clinical environment required.

A designated Plastic Reconstructive and Aesthetic Surgery Training Centre must have a wide range of clinical services covering the majority of the sub-specialty subjects available. Patient numbers (especially for specialised conditions) should be sufficient to enable trainees to be instructed at all levels required to achieve competence as an independent practitioner.

Specialist staff appointed to a training centre should have completed all training requirements themselves and will also have been trained in teaching and mentoring skills. Specialists without such skills should be mandated to undertake appropriate training. Training and maintenance of skills and knowledge to act as accredited trainers will be incorporated into job-plans and be subject to regular appraisal (see above).

It is essential for trainees to have a number of named trainers with whom they work on a day-to-day basis at different periods during their training. Each trainer may cover different aspects of a trainee's clinical and professional training). In addition to medical staff supporting a trainee's development, it is common for non-medical members of staff to also have defined roles. All specialists in training centres, whether surgeons or allied health professionals, should represent the breadth of Plastic Reconstructive and Aesthetic Surgery expertise. All such individuals will be required to demonstrate that they remain up to date with their clinical practice, knowledge, and educational skills.

The recommended trainee/trainer ratio is 1:1. There should normally be no less than three specialists in a training centre or clinical network. If a trainee moves between a number of centres for their training it is recommended that whenever possible, although their trainers may change, their Programme Director should remain the same. Programme Directors may also be trainers. It is not a mandatory requirement for training centres to be in an academic medical centre, but strong academic links and research orientation are highly desirable. UEMS(PRAS) Section aspires to all training centres in the future being closely linked with an academic centre.

It is expected that designated training centres (as described in this document) will have been appropriately recognised/accredited by the relevant National authority for training specialists/consultants in Plastic Reconstructive and Aesthetic Surgery.

Revalidation of Training Centres at national level should take place at 5 yearly intervals. When a Plastic Reconstructive and Aesthetic Surgery department/centre wishes to be recognised as a training centre by UEMS-PRAS Section, they will submit a report to the Section Board through their National Representative(s). Such application should demonstrate that all necessary educational and training provision is available and sustainable for a five year period. Subsequently, (every five years) an accredited training Centre will provide a brief updated report on activity to the Section and Board (again through their National Representative(s). Such re-accreditation must demonstrate maintenance of educational and training provision, as well as encouraging examples of good practice to be disseminated. Appropriate quality assurance systems should be in place that involve regular objective assessment of the quality of medical care as well as evaluation of the programme and outcomes of training.

c. Requirements for equipment and accommodation

A training centre should have the appropriate specialized equipment and support to enable fully up to date clinical practice Trainees should have suitable accommodation for their work, including comfortable office space for administrative duties as well as study, and secure sites for personal effects. If required to be resident on call, suitable accommodation and catering resources are also mandatory. Computer, Information Technology, and library resources must be available. All trainees must engage in clinical audit and have the opportunity to engage in research.

d. Quality Management within Training institutions

Participation of the training institution in Certified quality management programmes with an external auditing process on a regular basis is required. Criteria for quality management at specialty training institutions include the following:

Accreditation: Training institutions should be accredited with competent national medical boards. Additional accreditation on a supra-national level (such as that provided by the European Board of Plastic Reconstructive and Aesthetic Surgery (EBOPRAS)) is strongly recommended.

Clinical Governance: Management of clinical requirements with the available Human Resources within training institutions should be designed such that specialty training is inclusive and fully part of the Institution's remit. Workload should be managed with appropriate priority given to training.

Workforce planning: Training institutions should appoint a coordinator responsible for the composition, implementation and supervision of a specialty training programme. The role of trainer and trainee should be clearly defined. At least one day in each working week should be designated for specialty training educational support.

Regular report: Annual reports on an institution's specialty training programme should be made available for public scrutiny.

External auditing: Training institutions should appoint a coordinator who is also responsible for compliance of the training programme with current guidelines, directives or regulations of competent medical boards as well as the local medical school.

Transparency of training programmes: Based on national and regional guidelines, UEMS strongly encourages training institutions to formulate defined training programmes and make them publicly available (e.g. on their website).

Framework of approval: Clarity is essential for how, and by who, key achievements of training are ascertained for each Trainee, in order to structure progression to higher levels of clinical responsibility with appropriate new assignments.

APPENDIX 1.

Guidance notes for current structure of Training Programmes

- **Continuous Learning** – learning is lifelong, continuous, and will necessarily have periods of differing energy and ability for clinicians to engage with formal structures. However, the formal period of training has mandatory requirements which must be completed within the framework described, albeit with the empathetic support of the Training Programme Director.
- **Service delivery** overlaps surgical capability and professional commitment.
- **Sustainable engagement** overlaps professional commitment and personal leadership.
- **Emotional intelligence** overlaps personal leadership and reflective relationships.
- **Relationship centred care** overlaps reflective relationships and surgical capability.

Professional commitment is required from Trainers in

- Leadership/management
- Teaching
- Research and development
- Innovation
- Team building

Personal leadership should include

- Professionalism
- Self-awareness
- Self-reflection
- Adaptability

Reflective relationships involve

- Good Communication
- Collaboration