



الهيئة السعودية للتخصصات الصحية
Saudi Commission for Health Specialties

Plastic and Reconstructive Surgery



سَبَّحَ لِلَّهِ الْمِجْدُ

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DISCLAIMER

The primary goal of this document is to enrich the training experience of postgraduate trainees by outlining the learning objectives to become competent and proficient future plastic surgeon.

This curriculum may contain sections outlining some training regulations. However, such rules need to comply with the most updated “General Bylaws” and “Executive Policies” of the Saudi Commission for Health Specialties (SCFHS), which can be accessed online through the official SCFHS website (<https://www.scfhs.org.sa/MESPS/TrainingProgs/RegulationBoard/Pages/default.aspx>).

As this curriculum is subjected to continuous development, please refer to the electronic version posted online for the most updated version.

ACKNOWLEDGMENT

The Plastic Surgery Residency Training team acknowledges the valuable contributions and feedback of the Scientific Committee members in developing this pro-gram. We extend special appreciation and gratitude to all the members who have been pivotal in the completion of this booklet, especially the Curriculum Group, the Curriculum Specialists, and the Scientific Council. We would also like to acknowledge that the CanMEDS framework is copyright of the Royal College of Physicians and Surgeons of Canada, and many of the descriptions of competencies have been acquired from their resources.



FOREWARD

The fellowship curriculum development team acknowledges the valuable contributions and feedback from the scientific committee members in the development of this program. We extend special appreciation and gratitude to all the members who have been pivotal in the completion of this booklet, especially the Curriculum Group, the Curriculum Specialists, and Scientific Council. We would also like to acknowledge that the CanMEDS framework is a copyright of the Royal College of Physicians and Surgeons of Canada, and many of the description's competencies have been acquired from their resources.



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Introduction

Plastic Surgery is the branch of surgery that focuses on the management of complex composite tissue defects or deformities. The word “plastic” is derived from the Greek “plastikos”, meaning to mold or to give form. The specialty is defined by its approach to problems and specialized surgical techniques rather than any one anatomical area. There are two main components: reconstructive surgery and cosmetic or aesthetic surgery.

Reconstructive Plastic Surgery is based on the concept of restoring both the form and function of the affected region of the body. Plastic surgeons operate on most areas of the body to correct deformities, which may be caused by congenital birth defects, trauma, benign or malignant tumors, infections, and wound healing complications, both simple and complex. Reconstructive surgery can involve any tissue, but most commonly involves the skin, underlying soft tissue, and bone, as well as specific structures including nerves, blood vessels, and tendons. The knowledge and techniques of plastic surgery are well suited to the surgical care of certain complex anatomical regions, such as the hand, head and neck, and breast.

Aesthetic (Cosmetic) Plastic Surgery is an area of surgery in which the purpose is to improve the appearance of a specific body region, in the absence of any functional problem or defects caused by congenital deformity, trauma, or disease. This enhancement of appearance can improve the patient’s overall sense of well-being.

The Saudi Plastic Surgery Training Program consists of 6 years of full-time supervised residency training in plastic surgery and its branches. The training institution must be accredited by the Saudi Commission for Health Specialties (SCFHS) towards a Saudi Specialty Certificate in Plastic Surgery. Training shall be comprehensive, including:

- 1) Burn care
- 2) Hand and upper extremity surgery
- 3) Pediatric plastic surgery and craniofacial surgery
- 4) Reconstructive surgery and microsurgery
- 5) Cosmetic surgery

The trainees shall be actively involved in patient care, with increasing responsibility as experience and competence are gained. The trainees will adhere to the rules and regulations of the training program. Upon successful completion of the program, the trainee will be awarded the “Saudi Specialty Certificate in Plastic Surgery.”

The Saudi plastic surgery training program was established in the year 2001 in Riyadh. Since then, the program expanded in 2009 to include both eastern and western provinces in addition to the central province. At the time the program opened, there were a total of 5 accredited centers. Currently, there are 16 accredited training centers for plastic surgery in the kingdom, which are outlined in the table below:

Location	Number of Centers
Riyadh	7
Jeddah	5
East province	4

INTRODUCTION

The program has expanded from accepting 2 or 3 residents per year in 2002 to accepting 8 to 9 residents country-wide in the last few years (2013-2014). Through 2014, there are 29 residents who have completed the program.

The most commonly encountered cases in plastic surgery in the kingdom have been:

- 1) Hand and upper extremity trauma
- 2) Burns
- 3) Cleft lip and palate
- 4) Peripheral nerve surgery, e.g., carpal tunnel surgery
- 5) Body contouring, e.g., surgery following massive weight loss
- 6) Cancer reconstruction: breast, head, and neck cancer
- 7) Breast plastic surgery
- 8) Cosmetic surgery

The Saudi plastic surgery program follows The Canadian Medical Education Directives for Specialists (CanMEDS) framework, which offers a model of physician competencies that emphasizes not only medical expertise but also multiple additional non-medical expert roles that aim to better serve the needs of society.

The main goal of the Saudi Plastic Surgery Residency Training Program is to graduate well-trained and qualified plastic surgeons who will be able to look after patients independently. The program is carried out in accredited, well-equipped centers to allow the residents to develop appropriate competence in the period suggested. The program is under the auspices of the SCFHS rules and regulations.

Minimum training requirements: Plastic surgery residency

The total duration is six years (72 months) of approved residency training in plastic surgery.

- 1) In each year there are 13 blocks
- 2) The duration of each block is 4 weeks
- 3) One block (4 weeks) is the annual vacation
- 4) The other 12 blocks are used for rotations

Training Periods

A. Two years (24 clinical rotation blocks and 2 vacation blocks) of foundational training in surgery that meets the requirements of the SCFHS curriculum. This period must be approved by the plastic surgery program director in conjunction with the Surgical Foundations program coordinator. This initial period of postgraduate training must include:

1. Mandatory rotations:

- 1.1. A minimum of 6 blocks in general surgery
- 1.2. A minimum of 3 blocks in critical care
- 1.3. A minimum of 3 blocks in emergency medicine
- 1.4. A minimum of 3 blocks in plastic surgery
- 1.5. A minimum of 3 blocks in orthopedic surgery

INTRODUCTION

2. Elective rotations

The resident can choose three rotations, with no duplication of any of the following:

- 2.1. Two blocks in vascular surgery
- 2.2. Two blocks in pediatric surgery
- 2.3. Two blocks in ENT, head and neck service
- 2.4. Two blocks of oral surgery in a facial trauma center
- 2.5. Two blocks in dermatology

Applicants who successfully fulfill the above rotations and pass the required exams will successfully advance to the 3rd year of plastic surgery residency. The board of surgery should promote the resident to become an R3.

B. Four years of residency training in plastic surgery, which must include:

1. Six blocks of responsibility as a senior resident

2. Exposure to the following fields in plastic surgery while in plastic surgery rotations:

- 2.1. Burns
- 2.2. Hand and upper extremity
- 2.3. Breast plastic and reconstructive surgery
- 2.4. Pediatric plastic surgery and craniofacial surgery
- 2.5. Head and neck tumors and reconstruction
- 2.6. Lower extremity reconstruction
- 2.7. Trunk and genitalia reconstruction
- 2.8. Skin and soft tissue tumors
- 2.9. Reconstructive microvascular surgery
- 2.10. Cosmetic surgery

NOTES

The SCFHS Certification in Plastic Surgery requires all of the following:

- 1) Successful completion of a two-year SCFHS Surgical Foundations curriculum;
- 2) Successful completion of the SCFHS Principles of Plastic Surgery examination (first part of the Saudi board exam);
- 3) Successful completion of a six-year SCFHS accredited program in plastic surgery;
- 4) Successful completion of the SCFHS examination in plastic surgery; and
- 5) Successful completion of at least one scholarly project related to plastic surgery, as confirmed by the program director.

The six-year program outlined above is to be regarded as the minimum training requirement. Additional training may be required or recommended by the program director to ensure that clinical competence has been achieved.

Training must incorporate the principle of graded increasing responsibility. Senior residency is defined as the six-month period in which the resident is regularly entrusted with the responsibility for preoperative, operative, and postoperative care, including difficult and challenging problems in plastic surgery. The senior resident shall be in charge of a plastic surgery unit; no other resident or fellow shall impede direct communication between the senior resident and the attending staff plastic surgeon.

Minimum training requirements in surgical foundations (R1 and R2)

This period must include the following training, which will be counted as part of the parent specialty training:

- 1) A minimum of 6 blocks in general surgery
- 2) A minimum of 3 blocks in critical care
- 3) A minimum of 3 blocks in emergency medicine
- 4) A minimum of 3 blocks in plastic surgery
- 5) A minimum of 3 blocks in orthopedic surgery

In addition, the above-described elective rotations must be completed.

NOTES:

It is expected that the Surgical Foundations program director and the parent program director will collaboratively develop the series of rotations that will allow the trainee to meet the Objectives of Training in Surgical Foundations.

Surgical foundation training

Definition

Surgical Foundations encompasses the core foundational surgical competencies that are required for the specialty of plastic surgery.

Surgical Foundation training is the initial period of postgraduate training that is required to acquire the knowledge, skills, and attitudes underlying the basics of surgical practice in general and preparation for further training in plastic surgery.

For the purpose of clarity, a Surgical Foundations resident refers to any surgical resident in R1 or R2 or a resident on remediation who has not fulfilled the objectives of training. These objectives refer to exit competencies for which a Surgical Foundations resident must be evaluated by the end of R2.

NOTE:

At the discretion of the Surgical Foundations and home program directors, residents who fail to meet these objectives at the end of R2 may or may not continue training. However, a remediation plan must be put in place. These objectives of training must be achieved by the end of the third year of training (i.e., by R3).

Successful completion of the Principles of Surgery (POS; first part of the Saudi board exam) examination has been designated as one of the means to evaluate the attainment of the objectives of Surgical Foundations; however, if a candidate fails the POS exam but all other objectives are met, he or she may be allowed to continue in their home specialty given that this exam has to be passed before promoting the resident from R3 to R4.

Goals

Upon completion of the Surgical Foundations training period, a Surgical Foundations resident is expected to demonstrate competence in the management of surgical patients as outlined in this document.

INTRODUCTION

Residents must demonstrate the requisite knowledge, skills, and attitudes for effective patient-centered care and service to a diverse population. In all aspects of specialist practice, the resident must be able to address issues of gender, sexual orientation, age, culture, ethnicity, and ethics in a professional and compassionate manner.

Surgical Foundations must provide opportunities for residents to achieve the competencies outlined in these objectives. Training must provide the resident with graduated responsibility for the management of surgical patients under appropriate supervision.

COMPETENCIES

Surgical foundation competencies (R1+R2)

At the completion of the first two years (24 months) of Surgical Foundations training, the resident will have acquired the following competencies, as detailed in CanMED framework:

- 1) Medical Expert
- 2) Communicator
- 3) Collaborator
- 4) Manager
- 5) Health Advocate
- 6) Scholar
- 7) Professional

Medical Expert

Definition

Medical Expert is the central physician role in the CanMEDS framework. As a Medical Expert, the Surgical Foundations resident will integrate all of the CanMEDS roles, applying medical knowledge, clinical skills, and professional attitudes in their provision of patient-centered care.

Key and Enabling Competencies

By the end of Surgical Foundations training, the Surgical Foundations resident will be able to:

- 1) Demonstrate the ability to perform a consultation, integrating all of the CanMEDS roles to provide optimal, ethical, and patient-centered medical care.
 - Perform a consultation, including:
 - Conduct and present well-documented assessments
 - Prepare recommendations in written and/or verbal form in response to a request from another health care professional
 - Demonstrate compassionate and patient-centered care
- 2) Establish and maintain clinical knowledge, skills, and attitudes appropriate to surgical practice
 - Apply knowledge of the clinical, socio-behavioral, and fundamental biomedical sciences relevant to surgical practice during the assessment of a patient, including:
 - Anatomy
 - Relevant anatomy to all basic surgical approaches:
 - Surgical anatomy to head and neck, upper extremity, trunk including chest and abdomen, genitalia and lower extremity.
 - Physiology
 - Impact of age on specific organ systems as it relates to surgical management
 - Impact of pregnancy on specific organ systems as it relates to surgical management
 - Obesity and the impact of obesity on organ systems
 - Effect of obesity on the surgical patient
 - Respiratory system
 - Lung volumes, flow rates, and pressures
 - Gas exchange

COMPETENCIES

- Oxygen transport and carbon dioxide elimination
- Hemostasis
 - Physiology of coagulation and management of coagulopathy
- Fluid and electrolyte physiology
 - Fluid compartments and body water components
 - Osmotic and volume regulation
 - Sodium (Na), Potassium (K), Calcium (Ca), Phosphorus (P), and Magnesium (Mg) metabolism
 - Regulation of acid-base balance
- Circulatory system
 - Hemodynamics of the cardiovascular system
- Immunology of sepsis and transplantation
- Nutrition
 - Metabolic needs
 - Caloric, protein, and lipid requirements, fluids, and micronutrients
 - Adaptation to starvation as compared to response to surgical stress
- Body response to surgical stress
 - Metabolic responses, including the catabolic response, need for metabolic support, and endocrine changes not mediated by the neuroendocrine axis
 - Mediators and cells involved in the metabolic response
 - Neuroendocrine axis
- Sepsis and the inflammatory response
 - Metabolic and hemodynamic patterns
 - Mediators and cells in sepsis and inflammation
 - Impact on organ systems
 - Sepsis and the inflammatory response in major burn patients.
- Disease states in organ systems and their impact on the surgical patient
 - Cardiac
 - Coronary artery disease (CAD)
 - Valvular disease
 - Cardiomyopathy
 - Cardiac arrest and arrhythmias, as per advanced cardiovascular life support (ACLS) protocols
 - Pulmonary
 - Chronic obstructive lung disease (COLD)
 - Renal
 - Renal failure
 - Endocrine
 - Diabetes
 - Physiological complications
 - Management of hypo- and hyperglycemia
 - Thyroid pathophysiology
 - Parathyroid pathophysiology
 - Adrenal pathophysiology
 - Hepatic
 - Cirrhosis
 - Liver failure
 - Hematologic
 - Screening for diatheses
 - Hypocoagulable states

COMPETENCIES

- Hypercoagulable states
- Indications, complications and benefits for nutritional support, including enteral and parenteral feeding
 - Assessment and monitoring of malnourished surgical/burn patients
- Risk assessment strategies and scores
 - Anesthetic risks
 - Cardiac risk assessment
 - ICU risk assessment
 - Trauma assessment, including Glasgow coma scale
 - Nutritional assessment
 - Preoperative screening tests and their limitations
- Diagnostic modalities, including their technology, indications, and limitations
 - Plain radiography
 - Ultrasound
 - Computed tomography (CT) scan
 - Magnetic resonance imaging (MRI) technology
 - Fluoroscopy
 - Nuclear Medicine
 - Positron emission tomography (PET) scan
 - Other emerging technologies
 - Radiation safety principles as they apply to patients and practitioners
- Medical treatments and their impact on the surgical management of a patient
 - Immunosuppression
 - Chemotherapy
 - Radiotherapy
 - Common drugs that impact hemostatic function and how to correct their impact
 - Complementary and alternative medicine
- Blood products and derivatives, including types, indications, and adverse reactions
- Oncology
 - Purpose and basis of staging and grading
 - Basic principles of neoplastic transformation, including tumor growth and spread
 - Pathology requirements for appropriate assessments
 - Definition of common pathological terms, including but not limited to neoplasia, malignancy, dysplasia, metaplasia, and atypia
 - Genetics of neoplasia
 - Genetics of families at risk
 - Role of environmental carcinogens
 - Paraneoplastic syndromes
 - Principles of multi-modality therapy
 - Psychological and social impact of cancer on individuals and families
- Trauma
 - Principles of advanced trauma life support (ATLS) or principles of trauma care, including initial management
- Common infection
 - Community and hospital acquired bacteria, fungi, and viruses
 - Impact of bloodborne pathogens, including HIV, Hepatitis B, and Hepatitis C
- Transplantation/implantation
 - Description of autograft, xenograft, and allograft
 - Graft rejection - mechanisms and types
 - Implants

COMPETENCIES

- Principles of compatibility
 - Biological reaction/rejection
- Demonstrate an understanding of the conduct of a surgical procedure
 - Principles of patient safety
 - Principles of management of the patient and surgical team, with respect to bloodborne pathogens
 - Needle stick injury
 - Mucosal exposure
 - Smoke plume inhalation
 - Wound healing
 - Classification of wounds
 - Normal wound healing
 - Abnormal wound healing
 - Factors that alter wound healing
 - Principles of energy sources
 - Electro-cautery
 - Laser
 - Emerging energy source modalities
 - Principles of prophylaxis
 - Wound and systemic infection
 - Thromboembolism
 - Tetanus
 - Principles of anesthesia, analgesia, and sedation
 - Local anesthetic agents: indications, contra-indications, and administration
 - Regional anesthetics
 - General anesthetics
 - Procedural sedation: indications, contra-indications, and administration
 - Complications arising from the administration of anesthesia
- Demonstrate an understanding of routine postoperative patient care, including
 - Fluid management
 - Wound care
 - Pain management
 - Pathophysiology and types of pain
 - Common analgesic medications
 - Patient-controlled analgesia
 - Regional analgesia, including epidural
- Demonstrate an understanding of the pathophysiology and complications in the surgical patient
 - Cardiac
 - Principles of advanced cardiac life support
 - Cardiac failure
 - Ischemic heart disease
 - Arrhythmia
 - Circulatory shock
 - Distributive
 - Cardiogenic
 - Hypovolemic
 - Obstructive
 - Multiple organ dysfunction syndrome
 - Pulmonary

COMPETENCIES

- Respiratory failure
 - Basic mechanism, indications, contra-indications, and complications of mechanical ventilation
- Pulmonary embolism
- Fat embolism
- Genito-urinary
- Congenital anomalies
- Vascular
 - Deep venous thrombosis (DVT)
- Arterial ischemia
- Endocrine
 - Glycemic control
 - Thyroid storm
 - Adrenal insufficiency
 - Syndrome of inappropriate antidiuretic hormone secretion (SIADH)
- Skin
 - Pressure sores
- Neurologic
 - Delirium and altered mental status
 - Transient ischemic attack (TIA) and stroke
 - Principles of brain death assessment
- Psychiatric
 - Anxiety and depression
 - Psychological and emotional response to sensitive disorders
 - Post-traumatic stress disorders
- Gastrointestinal
 - Stress gastritis
 - Postoperative Ileus
- Common post-surgical infections, including surveillance, prevention, and judicious use of antibiotics
 - Pulmonary
 - Vascular catheter
 - Urinary
 - Parotitis
 - Surgical site infection, including incisional and organ/space
 - Spreading and necrotizing infections
 - Hematogenous infections
 - Types of bacteria
 - Clostridium difficile
 - Multi-antibiotic-resistant pathogens
 - Methicillin-resistant Staphylococcus aureus
 - Multi-resistant gram-negative bacilli
 - Vancomycin resistant enterococci
 - Common pathogens in the specific surgical site
- Compartment syndromes
 - Abdominal
 - Limb
- Delayed wound healing

COMPETENCIES

3) Perform a complete and appropriate assessment of a surgical patient

- Elicit a history and perform a physical examination that is relevant, concise, and accurately conveys the patient's context and preferences for the purposes of prevention and health promotion, diagnosis, and/or management
 - Identify risk factors for disease or diagnoses
 - Identify aspects that may affect the surgical management of the patient
 - Identify physical, mental, and psychosocial issues that may impact post-operative care
 - Identify opportunities for risk management and prevention
- Select medically appropriate investigative methods in a resource-effective and ethical manner, including but not limited to:
 - Preoperative screening tests
 - Laboratory tests and imaging
- Demonstrate effective clinical problem solving and judgment to address patient problems, including interpreting available data and integrating the information to generate differential diagnoses and management plans

4) Use preventive and therapeutic interventions effectively

- Formulate and implement a comprehensive management plan in collaboration with patients and their families for the following clinical situations:
 - Preoperative evaluation and optimization of the patient with the following conditions:
 - Cardiac disease
 - Arrhythmias
 - Ischemic heart disease
 - Valvular heart disease
 - Heart failure
 - Myopathy
 - Pulmonary disease
 - Respiratory failure
 - Chronic lung disease (CLD)
 - Kidney disease
 - Acid base disorders
 - Electrolyte disorders (sodium, potassium, calcium, phosphorus, magnesium)
 - Renal insufficiency
 - Liver disease
 - Cirrhosis and its complications
 - Liver failure
 - Endocrine disease
 - Diabetes
 - Thyroid disease
 - Adrenal disorders
 - Disorders of hemostasis
 - Pregnancy
 - Morbid obesity
 - Malnutrition
 - Patients with immunosuppression
 - HIV
 - Immuno-suppressant drugs
 - Chronic disease states

COMPETENCIES

- Post-transplant states
 - Trauma
 - Thermal injury
 - Major categories of shock
 - Infections
- Unexpected perioperative bleeding, both surgical and nonsurgical in nature
- Prophylaxis
 - Antibiotic
 - Thromboembolic
 - Immunization, including tetanus
- Demonstrate effective, appropriate, and timely application of preventive and therapeutic interventions for postoperative management of patients with:
 - Uneventful postoperative course
 - Complicated postoperative course
 - Approach to a patient with fever
 - Cardiac disorders
 - Ischemia
 - Arrhythmias
 - Heart failure
 - Pulmonary disease
 - Aspiration pneumonia
 - Hospital-acquired pneumonia
 - Pulmonary embolus
 - Respiratory insufficiencies
 - Pneumothorax
 - Kidney disease
 - Oliguria or anuria
 - Renal failure
 - Electrolyte and acid-base disorders
 - Vascular disease:
 - Deep venous thrombosis
 - Gastro-intestinal (GI) disease
 - GI bleeding
 - Ileus
 - Sepsis
 - Catheter sepsis
 - Superficial surgical site infection
 - Deep surgical site infection
 - Compartment syndromes
 - Abdominal
 - Limb
 - Fat embolism
 - Pressure sores
 - Recognition of complications from operative positioning
- Ensure appropriate informed consent is obtained for therapies
- Ensure patients receive appropriate end-of-life care

5) Demonstrate proficient and appropriate use of procedural skills

- Ensure appropriate informed consent is obtained for procedures, including the discussion of appropriate postoperative care and issues with patients and families

COMPETENCIES

- Pre-procedural skills
 - Appropriate usage of imaging
 - Demonstrate proficiency and selectivity in ordering appropriate imaging tests with sufficient attention to clinical details
 - Demonstrate an approach to the interpretation of common and simple imaging modalities, including:
 - Plain chest X-ray
 - Plain views of the abdomen
 - Common cross-sectional imaging
 - Routine trauma imaging
 - Ultrasound
 - Demonstrate effective, appropriate, and timely performance of a surgical procedure while maintaining patient and team safety
 - Apply the concept of aseptic technique as it is used for all procedures
 - Gather and manage the availability of appropriate instruments and materials for minor procedures
 - Obtain appropriate assistance
 - Maintain universal precautions
 - Demonstrate understanding of the steps to take when there has been a break in universal precautions or a potential contamination
 - Demonstrate appropriate patient positioning
 - Prepare the operative site
 - Cleanse the operative site
 - Appropriately hand-cleanse, gown, and glove
 - Demonstrate appropriate draping
 - Deliver pre-procedural anesthesia/analgesia if appropriate
 - Strictly adhere to patient safety guidelines, including the World Health Organization (WHO) 5 steps for patient safety in operative therapy
- Procedural skills
 - Demonstrate the application of anatomic knowledge as it relates to the surgical procedure in which the resident is participating
 - Demonstrate appropriate use of operative assistance
 - Recognize when to use operative assistance as necessary for the safe and effective performance of operative procedures
 - Demonstrate understanding of personal technical limitations
 - Direct assistants
 - Demonstrate effective operative assistance
 - Demonstrate how to provide operative assistance as necessary for the safe and effective performance of operative procedures
 - Take direction from a lead surgeon
 - Demonstrate the appropriate use of common surgical instruments, including but not limited to needle drivers, retractors, forceps, clamps, electrocautery, scalpel, and scissors
 - Demonstrate the appropriate choice and use of suture materials
 - Perform the following surgical skills
 - Incision using sharp and energy-based instruments
 - Knot tying
 - 5.3.6.3. Suturing
 - Appropriate tissue handling during surgical procedures, paying attention to the preservation of tissue vitality

COMPETENCIES

- Blunt and sharp dissection without injury to adjacent structures
- Vascular control in elective and critical situations
- Closure of simple wounds
- Appropriate use of drains
- Application of appropriate wound dressing
- Urethral catheter insertion
- Insertion of a nasogastric tube
- Tourniquet application
- Splint for bony injury or soft tissue injury
- Remove a superficial skin lesion
- Drain a superficial abscess
- Biopsy (the specifics of tissue type and anatomic locations can be designated as appropriate to the surgical specialty and will be outlined in the relevant OTR)
- Secure arterial and venous vascular access in critical and non-critical situations
- Demonstrate the ability to perform the following procedures in critical situations
 - Needle thoracostomy
 - Tube thoracostomy
 - Needle cricothyroidotomy
 - Cricothyroidotomy or tracheostomy
 - Central line insertion
- Post-procedural skills
 - Preparation and handling of specimens for presentation to a pathologist
 - Perform appropriate wound surveillance and dressing care
- Document and disseminate information related to procedures performed and their outcomes, including operative reports and other records
- Ensure adequate follow-up is arranged for procedures performed
 - Plan and discuss appropriate postoperative care and issues with patients and families
 - Discuss immediate and long-term follow-up issues with family members or medical power-of-attorney as appropriate
 - Arrange for appropriate postoperative resources

Communicator

Definition

As a Communicator, the Surgical Foundations resident will effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during, and after the medical encounter.

Key and Enabling Competencies

By the end of Surgical Foundations training, the Surgical Foundations resident will be able to:

- 1) Develop rapport, trust, and ethical therapeutic relationships with patients and families
 - Effectively identify and explore issues to be addressed in a surgical patient encounter, including but not limited to the patient's context and preferences, which include items to be addressed such as age, ethnicity, gender, family, and religious beliefs.
 - Recognize that being a good communicator is a core clinical skill for surgeons and that effective physician-patient communication can foster patient adherence to treatment regimens, improved clinical outcomes, patient satisfaction, and physician satisfaction.
 - Establish positive therapeutic relationships with patients and their families that are characterized by understanding, trust, respect, honesty, and empathy.

COMPETENCIES

- Encourage discussion, questions, and interaction in the encounter.
 - Engage patients, families, and relevant health care professionals in the development of a plan of care using shared decision-making.
 - Respect patient confidentiality, privacy, and autonomy.
 - Demonstrate an understanding of the risk of breaching patient confidentiality as a result of new technologies such as telehealth, internet, or digital storage and transmission devices.
 - Listen effectively
 - Be aware of and responsive to nonverbal cues
 - Facilitate a structured clinical encounter effectively
- 2) Accurately elicit and synthesize relevant information and the perspectives of patients and families, colleagues, and other professionals
- Gather information about a disease and about a patient's beliefs, concerns, expectations, and illness experience
 - Seek out and synthesize relevant information from other sources, such as a patient's family, caregivers, and other professionals
- 3) Convey relevant information and explanations accurately to patients and families, colleagues, and other professionals
- Deliver information to patients, patients' families, colleagues, and other professionals in a humane manner and in such a way that it is understandable and encourages discussion and participation in decision-making
 - Plan and discuss appropriate perioperative care and issues with patients and families preoperatively
 - Provide informed discharge as it relates to the procedures being performed
 - Discuss follow-up issues with family members or medical power-of-attorney as appropriate
 - Educate the patient and family concerning alternatives to surgical and non-surgical care
 - Demonstrate effective communication using newer technologies
- 4) Develop a common understanding on issues, problems, and plans with patients, families, and other professionals to develop a shared plan of care
- Respect diversity and differences in decision-making, including but not limited to the impact of:
 - Gender
 - Religion
 - Cultural beliefs
 - Age
 - Sexual orientation
 - Socioeconomic status
 - Address challenging communication issues effectively, including:
 - Obtaining informed consent
 - Delivering bad news
 - Disclosing adverse events
 - Discussing end-of-life care
 - Discussing organ donation
 - Addressing anger, confusion, and misunderstanding
 - Language barriers

COMPETENCIES

- Cultural differences

- 5) Effectively convey oral and written information about a medical encounter
- Maintain clear, concise, accurate, and appropriate records (e.g., written or electronic) of clinical encounters and plans
 - Present verbal reports of clinical encounters and plans

Collaborator

Definition

As a Collaborator, the Surgical Foundations resident will work effectively as part of a health care team to achieve optimal patient care.

Key and Enabling Competencies

By the end of Surgical Foundations training, the Surgical Foundations resident will be able to:

- 1) Participate effectively and appropriately as part of an inter-professional and interdisciplinary health care team
- Describe the surgeon's roles and responsibilities to other professionals
 - Describe the elements of a good consultation
 - Recognize one's own limitations and when help is needed from others
 - Respect the roles and responsibilities of other professionals within the health care team
 - Recognize and respect the diversity of roles, responsibilities, and competencies of other professionals in relation to their own
 - Work with others to assess, plan, provide, and integrate care for individual patients or groups of patients
 - Arrange for the appropriate postoperative resources to be available
 - Arrange for appropriate postoperative allied health care assistance as necessary
 - Work with others to assess, plan, provide, and review other tasks, such as research problems, educational work, educational program review, or administrative responsibilities
 - Participate effectively in inter-professional team meetings
 - Enter into interdependent relationships with other professions for the provision of quality care
 - Describe the principles of team dynamics in operative and non-operative environments
 - Respect team ethics, including confidentiality, resource allocation, and professionalism
 - Demonstrate progressive leadership in a health care team, as appropriate
 - Use a preoperative team checklist to improve patient safety
- 2) Work with other health professionals effectively to prevent, negotiate, and resolve conflicts
- Demonstrate a respectful attitude towards other colleagues and members of a team
 - Work with other professionals to prevent conflicts
 - Employ collaborative negotiation to resolve conflicts
 - Respect differences and address misunderstandings and limitations in other professionals
 - Recognize one's own differences, misunderstandings, and limitations that may contribute to inter-professional tension

COMPETENCIES

Manager

Definition

As a Manager, the Surgical Foundations resident will participate in health care organization, making decisions about allocating resources, and contributing to the effectiveness of the health care system.

Key and Enabling Competencies

By the end of Surgical Foundations training, the Surgical Foundations resident will be able to:

- 1) Demonstrate an understanding of the influences that affect the workings of the health care system at various levels, including an understanding of:
 - Hospital governance
 - Operating room governance
 - Worker's compensation main policies
 - Public Health issues relating to the mandatory reporting of diseases
- 2) Participate in activities that contribute to the effectiveness of their health care organizations and systems
 - Participate in systemic quality process evaluation and improvement, such as patient safety initiatives
 - Describe the structure and function of the health care system as it relates to their surgical practice, including the roles of physicians
 - Describe principles of health care financing
- 3) Manage their practice and career effectively
 - Set priorities and manage time to balance patient care, practice requirements, outside activities, and personal life
 - Employ information technology appropriately for patient care
 - Demonstrate an understanding of the introduction of new technologies and the need for:
 - Health technology assessment
 - Education
 - Credentialing
- 4) Allocate finite health care resources appropriately
 - Recognize the importance of just allocation of health care resources, balancing effectiveness, efficiency, and access with optimal patient care

Health Advocate

Definition

As a *Health Advocate*, the Surgical Foundations resident will responsibly use their expertise and influence to advance the health and well-being of individual patients, communities, and populations.

Key and Enabling Competencies

By the end of Surgical Foundations training, the Surgical Foundations resident will be able to:

- 1) Respond to individual patient health needs and issues as part of patient care
 - Identify the health needs of an individual patient

COMPETENCIES

- Recognize opportunities for advocacy, health promotion, and disease prevention with individuals for whom they provide care, such as identifying:
 - Child abuse
 - Elder abuse
 - Domestic violence
 - Smoking cessation
 - Substance abuse
 - Patient behaviors that place them at risk for injury or disease
 - Disadvantaged populations
- Recognize the importance of organ transplantation
 - Identification of potential donors
- Identify opportunities to advocate for appropriate screening

2) Describe and respond to the health needs of the communities that they serve

- Demonstrate an understanding of how they may affect surgical disease prevalence

3) Promote the health of individual patients, communities, and populations

- Describe an approach to implementing a change in a determinant of health of the populations that they serve
- Describe how public policy impacts the health of the populations served
- Describe the ethical and professional issues inherent in health advocacy, including altruism, social justice, autonomy, integrity, and idealism
- Appreciate the possibility of conflict inherent in their role as a health advocate for a patient or community, similar to that of a manager or gatekeeper
- Describe the role of the medical profession in advocating collectively for health and patient safety

4) Promote and participate in patient safety

- Describe ways to prevent injury
 - Appropriate safety equipment for work and leisure pursuits
 - Error prevention system in the operating room

Scholar

Definition

As a Scholar, the Surgical Foundations resident will demonstrate a lifelong commitment to reflective learning, as well as the creation, dissemination, application, and translation of medical knowledge.

Key and Enabling Competencies

By the end of Surgical Foundations training, the Surgical Foundations resident will be able to:

1) Maintain and enhance professional activities through ongoing learning

- Describe the principles of lifelong learning
- Describe the principles and strategies for implementing a personal knowledge management system
- Pose an appropriate learning question
- Access and interpret relevant evidence, including an appropriate literature search
- Integrate new learning into practice
- Evaluate the impact of any change in practice

COMPETENCIES

- Document the learning process using methods such as:
 - Surgical logs
 - Learning portfolios
- 2) Critically evaluate medical information and its sources, and apply this appropriately to practice decisions
- Describe the principles of critical appraisal, including statistics and epidemiology
 - Critically appraise retrieved evidence to address a clinical question
 - Discuss ways to integrate critical appraisal conclusions into clinical care
- 3) Facilitate the education of patients, families, students, residents, other health professionals, the public, and others
- Describe principles of learning relevant to medical education
 - Develop the skills to educate medical students, fellow colleagues, and other health care professionals
 - Identify collaboratively the learning needs and desired learning outcomes of others
 - Select effective teaching strategies and content to facilitate others' learning
 - Effectively deliver a lecture or formal presentation
 - Assess and reflect on a teaching encounter
 - Provide effective feedback
 - Describe the principles of ethics with respect to teaching
- 4) Demonstrate an understanding of the principles of dissemination of new knowledge
- Demonstrate appropriate presentation skills, including formal, informal, and written presentations
- 5) Demonstrate an understanding of the use of information technology to enhance surgical practice, including:
- Computers
 - Presentation software
 - Personal digital assistant (PDA)
 - Simulation and other technologies

Professional

Definition

As a Professional, the Surgical Foundations resident is committed to the health and well-being of individuals and society through ethical practice, profession-led regulation, and high personal standards of behavior.

Key and Enabling Competencies

By the end of Surgical Foundations training, the Surgical Foundations resident will be able to:

- 1) Demonstrate a commitment to their patients, profession, and society through ethical practice
- Exhibit appropriate professional behaviors in practice, including honesty, integrity, commitment, compassion, respect, and altruism
 - Demonstrate the ability to be objective in treating patients regardless of their socioeconomic status or other factors
 - Demonstrate and maintain a commitment to delivering the highest quality care

COMPETENCIES

- Recognize and appropriately respond to ethical issues encountered in practice
- Manage conflicts of interest
 - Demonstrate an awareness of the influence of industry on practice and training
- Recognize the principles and limits of patient confidentiality as defined by professional practice standards and the law
- Maintain appropriate relationships with patients and families
- Recognize the duality of being a learner as well as a practitioner
 - Demonstrate an understanding of the role of appropriate supervision

2) Demonstrate a commitment to their patients, profession, and society through participation in profession-led regulation

- Demonstrate knowledge and an understanding of the professional, legal, and ethical codes of practice
- Fulfill the regulatory and legal obligations required of current practice
- Demonstrate accountability to professional regulatory bodies
- Recognize and respond to others' unprofessional behaviors in practice
- Participate in peer review

3) Demonstrate a commitment to physician health and sustainable practice

- Balance personal and professional priorities to ensure personal health and a sustainable practice
- Strive to heighten personal and professional awareness and insight
- Recognize other professionals in need and respond appropriately
- Demonstrate an awareness of the risks associated with the high stress environments in which surgeons work
- Demonstrate an understanding of occupational risks and their management
- Promote a healthy lifestyle and demonstrate awareness of personal at risk behaviors
 - Substance abuse
 - Exposure to infection
 - Sleep deprivation
- Demonstrate an understanding of techniques for stress reduction



COMPETENCIES

Medical Expert	Communicator	Collaborator	Manager	Health Advocate	Scholar	Professional
Demonstrate the ability to perform a consultation, integrating all of the CanMEDS Roles to provide optimal, ethical, and patient-centered medical care	Develop rapport, trust, and ethical therapeutic relationships with patients and families	Participate effectively and appropriately on an inter-professional and interdisciplinary health care team	Demonstrate an understanding of the influences that affect the workings of the health care system at various levels	Respond to individual patient health needs and issues as part of patient care	Maintain and enhance professional activities through ongoing learning	Demonstrate a commitment to their patients, profession, and society through ethical practice
Establish and maintain clinical knowledge, skills, and attitudes appropriate to surgical practice	Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals	Work with other health professionals effectively to prevent, negotiate, and resolve conflict	Participate in activities that contribute to the effectiveness of their health care organizations and systems	Describe and respond to the health needs of the communities that they serve	Critically evaluate medical information and its sources, and apply this appropriately to practice decisions	Demonstrate a commitment to their patients, profession, and society through participation in profession-led regulation
The knowledge, skills, and attitudes underlying the basics of surgical practice in general and preparation for further training in plastic surgery.	Perform a complete and appropriate assessment of a surgical patient	Convey relevant information and explanations accurately to patients and families, colleagues, and other professionals	Manage their practice and career effectively	Promote the health of individual patients, communities, and populations	Facilitate the education of patients, families, students, residents, other health professionals, the public, and others	Demonstrate a commitment to physician health and sustainable practice
	Use preventive and therapeutic interventions effectively	Develop a common understanding on issues, problems, and plans with patients, families, and other professionals to develop a shared plan of care	Allocate finite health care resources appropriately	Promote and participate in patient safety	Demonstrate an understanding of the principles of dissemination of new knowledge	

Plastic surgery training (R3-6)

Specific learning objectives

CanMEDS physician competency framework

Goals

Upon completion of training, a resident is expected to be a competent specialist in plastic surgery, capable of assuming a consultant's role in the specialty. The resident must acquire a working knowledge of the theoretical basis of the specialty, including its foundations in the basic medical sciences and research.

Residents must demonstrate the requisite knowledge, skills, and attitudes for effective patient-centered care and service to a diverse population. In all aspects of specialist practice, the graduate must be able to address issues of gender, sexual orientation, age, culture, ethnicity, and ethics in a professional manner.

Junior Plastic Surgery Resident (R3 and R4)

The overall objective of this stage is to expose the resident to all fields of plastic surgery. During the first 2 years (R3 and R4), the resident will be supervised when performing simple and less complicated procedures and allowed to participate in major plastic procedures. The resident will rotate for 3 rotation blocks in the approved centers of the regional program. The resident can rotate in the same center more than once, based on the requirements of the program and the decision of the program director.

The plastic surgery R3 and R4 residents may take calls as senior or junior residents, depending on the individual center policy.

Senior Plastic Surgery Resident (R5 and R6).

At this stage the resident should acquire the skills and the knowledge to become a competent plastic surgeon at the time of graduation.

The resident rotates for a minimum of 6 blocks rotations in the approved centers of the regional program. He/she can however, rotate in the same center more than once based on the requirements of the program. Rotations length can be changed to 3 blocks period if the program director sees a benefit in that for the resident.

The resident should also fulfill the role of the chief resident of the division of plastic surgery in any of the recognized training hospital for at least 6 blocks prior to graduation.

Plastic surgery competencies

At the completion of training, the resident will have acquired the following competencies and will function effectively as a:

Medical Expert

Definition

As Medical Experts, Plastic Surgeons integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and a professional attitude in their provision of patient-centered care. The Medical Expert is the central physician role in the CanMEDS framework.

Key and Enabling Competencies

Plastic surgeons are able to:

- 1) Function effectively as consultants, integrating all of the CanMEDS roles to provide optimal, ethical, and patient-centered medical care
 - Perform a consultation effectively, including the presentation of well-documented assessments and recommendations in written and/or verbal form in response to a request from another health care professional, including recognition, diagnosis, management, and appropriate counseling
 - Demonstrate effective use of all CanMEDS competencies relevant to plastic surgery
 - Apply knowledge of all forms of acute and chronic wounds and reconstructive defects in all areas of the body
 - Respond appropriately to emergency situations
 - Manage the perioperative and postoperative care of a patient
 - Manage a patient's progress through the complexities of the health care system
 - Identify and appropriately respond to relevant ethical issues arising in patient care
 - Prioritize professional duties when faced with multiple patients and problems
 - Demonstrate compassionate and patient-centered care
 - Recognize and respond to the ethical dimensions of medical decision-making
 - Demonstrate medical expertise in situations other than patient care, including but not limited to providing expert legal testimony or advising governments, as needed.

- 2) Establish and maintain clinical knowledge, skills, and attitudes appropriate to their practice
 - Apply knowledge of the clinical, socio-behavioral, and fundamental biomedical sciences relevant to plastic surgery. The resident will demonstrate knowledge of:
 - PRINCIPLES OF PLASTIC SURGERY
 - Advanced principles of wound healing
 - Advanced principles of wound care
 - Advanced principles of wound closure
 - Skin grafting
 - Tissue grafting, including but not limited to cartilage, bone, fat, tendon, nerve, muscle, fascia, and blood vessels
 - Skin flaps
 - Muscle flaps and composite flaps
 - Transplant biology
 - Tissue expansion
 - Microsurgery
 - Energy sources used in plastic surgery, including but not limited to:
 - Electrocautery
 - Lasers
 - Ultrasound

COMPETENCIES

- Radiofrequency systems
- Standard power equipment, including but not limited to: drills, saws, dermatomes, and liposuction devices
- Endoscopy and other techniques specific to plastic surgery procedures
- Biomaterials, including but not limited to:
 - Human blood products
 - Tissue allografts
 - Tissue xenografts
- EMERGENCY, PERIOPERATIVE, AND POSTOPERATIVE CARE
 - Principles of:
 - Advanced Trauma Life Support (ATLS)
 - Aseptic technique and routine precautions
 - Local anesthesia
 - Conscious sedation
 - Early postoperative patient care, both medical and surgical
 - Establishing priorities in the care of a patient with multi-system trauma
 - Appropriate medical support and investigation for a traumatized patient requiring emergency surgery
 - Appropriate preoperative investigation and collaboration with other consultants prior to proceeding with any surgery, emergent or elective
 - Development of treatment plans, including surgical and non-surgical therapies, that recognize the potential psycho-social impact of the condition and its management on the patient and family
 - Obtaining appropriate informed consent from patients and/or guardians prior to any medical or surgical treatment, emergent or elective
 - Identification of post-surgical complications, local and systemic, with appropriate investigation and the use of consultants to promptly develop and introduce treatment plans
- HEAD AND NECK
 - Detailed surgical anatomy of the head and neck
 - Principles of anatomic and functional defects (from all causes) of the head and neck, including but not limited to scalp, skull, forehead, periorbital (eyelids and orbit), cheeks, nose, lips, ears, midfacial and mandibular skeleton, facial nerves, upper airway, and digestive tract
 - Vascular and lymphatic malformations of the head and neck
 - Tumors of the head and neck (both benign and malignant) and their surgical and adjuvant management
 - Infectious, inflammatory, and degenerative processes that cause significant dysfunction or disfigurement in the head and neck
 - Application of aesthetic unit principles in facial reconstruction
- HAND AND UPPER EXTREMITY
 - Anatomy and physiologic function of the hand, including vascular, musculoskeletal, nervous, and cutaneous systems
 - Diagnosis and management of the following conditions:
 - Common developmental abnormalities of the upper extremity and their systemic associations
 - Dupuytren's disease

COMPETENCIES

- Vascular disorders of the upper extremity
 - Arthritis of the hand and wrist
 - Benign and malignant soft tissue and bone tumors of the hand and wrist
 - Hand infections
 - Simple and complex trauma, including but not limited to:
 - Soft tissue injury and loss
 - Tendon injury
 - Nerve injury, including brachial plexus
 - Fractures, ligament injuries, and joint dislocations
 - Vascular compromise
 - Amputations
 - Burns and frostbite on the hand and upper extremity, to include burns of all etiologies:
 - Heat
 - Chemical
 - Electrical
 - Radiation
 - Friction
 - Principles of late reconstruction of upper limb deformities, including but not limited to:
 - Tendon transfers (hand, wrist, and upper extremity)
 - Thumb reconstruction
 - Bone grafting
 - Reconstructing scar and soft tissue defects
 - Nerve compression syndromes, including principles of tendon transfers, nerve grafting, and the management of complex regional pain syndromes
 - Knowledge of objective testing methods applicable to upper extremity pathology and trauma, including diagnostic imaging, electrophysiological testing, ultrasound and laser Doppler, and assessment of muscle compartment pressures
 - Principles of splinting and rehabilitation of the hand and the role of multidisciplinary clinics in hand surgery
- LOWER EXTREMITY
- Anatomy and physiological function of the lower extremity
 - Diabetic foot
 - Diseases of the peripheral vasculature, including the lymphatic system, and principles of their management
 - Principles of reconstruction of the traumatically compromised lower extremity, emphasizing soft tissue coverage, sensory-motor function, segmental bone loss, and vascular status
 - Principles of reconstruction of lower extremity defects secondary to debridement of acute and chronic osteomyelitis, and resection of tumors while recognizing the effects of adjuvant treatments on wound healing

COMPETENCIES

- BREAST: NON-COSMETIC
 - Surgical anatomy of the breast
 - Congenital and developmental diseases of the breast and chest, including but not limited to chest wall deformities affecting the breast, breast aplasia, underdevelopment, overdevelopment, constricted breast conditions, and asymmetries
 - Gynecomastia, ptosis, breast trauma, and burns
 - Benign and malignant tumors of male and female breasts, including but not limited to:
 - All forms of breast cancer and related issues, including but not limited to genetic markers, premalignant breast disease, and the role of preventative mastectomy
 - Effects of radiation on the breast and implications for breast surgery
 - Principles of breast reduction
 - Basic science of silicone, history of the use of silicone breast implants, and the generation of silicone breast implants
 - Principles of breast reconstruction, partial or complete, for defects from any etiology, including but not limited to congenital defects, trauma, infection, tumor, or postsurgical causes
 - Tissue expanders
 - Implant reconstruction
 - Fat grafting
 - Utilizing alternative materials such as acellular dermis
 - Flap reconstruction, including local flaps, regional pedicle flaps, or distant flaps
 - Breast balancing operations, including but not limited to mastopexy, reduction mammoplasty, or breast augmentation
- ABDOMEN, TRUNK, AND PELVIS
 - Surgical anatomy of the abdominal wall
 - Chest wall defects from all causes, including but not limited to neoplastic, infective, radiation, trauma, and post-surgical
 - Abdominal wall defects from all causes, including but not limited to neoplastic, infective, radiation, trauma, and post-surgical
 - Pelvic defects from all causes, including but not limited to neoplastic, infective, radiation, trauma, and post-surgical
 - Principles of reconstruction of
 - Chest wall defects
 - Abdominal wall defects
 - Pelvic and perineal defects, including, but not limited to:
 - Decubitus ulcers from all causes
 - Vaginal reconstruction
 - Penile reconstruction
- SKIN
 - Macroscopic and microscopic anatomy of the skin
 - Benign skin lesions
 - Malignant skin lesions, including but not limited to:
 - Basal cell carcinoma
 - Squamous cell carcinoma

COMPETENCIES

- Malignant melanoma
- Benign and malignant tumors of adjacent soft tissues, including but not limited to fat, fibrous tissue, muscle, fascia, nerves, blood vessels, and lymphatics
- Principles of skin tumor surgery and tumor surgery of adjacent soft tissues, including diagnosis, adjuvant therapies, sentinel node biopsy, and Moh's micrographic surgery
- Principles of skin defect reconstruction by all methods
- PEDIATRIC AND CRANIOFACIAL SURGERY
 - Embryology of the head, neck, and upper extremity
 - Identification and management of pediatric craniofacial deformities
 - Unisutural and multiple suture craniosynostoses
 - Common syndromes associated with multiple craniosynostoses, including but not limited to the following syndromes: Crouzon, Apert, Saetho-Chotzen, Pfeiffer, and Carpenter
 - Rare craniofacial clefts, involving both bony and soft tissue
 - Common pediatric syndromes, sequences, and spectrums, including but not limited to Pierre Marie Robin Sequence, ocular-auricular-vertebral spectrum, Treacher Collins, Nagler, Binder, Romberg, Mobius, Down, Beckwith-Weidemann, Gorlin, neurofibromatosis, fibrous dysplasia, and Klippel-Feil syndrome
 - Positional plagiocephaly
 - Congenital torticollis
 - Facial Clefts
 - Embryology, genetics, identification, classification, and management
 - Epidemiology of facial clefts and associated etiological factors
 - Anatomy of the underlying deformity
 - Associated functional problems, including but not limited to problems with feeding, speech, hearing, and dentition
 - Principles of surgical procedures for patients with cleft lip and palate
 - Cleft lip repair – unilateral or bilateral
 - Cleft palate repair
 - Alveolar bone graft
 - Ancillary procedures, including pharyngeal flaps, pharyngoplasty, residual nose deformity, and occlusal correction
 - Vascular Anomalies
 - Classification
 - Clinical, cellular, radiological, hematological, and flow characteristics of vascular anomalies
 - Vascular malformation syndromes, including but not limited to Sturge-Weber, Klippel-Trenaunay, Parkes-Weber, Maffucci, Rendu-Osler-Weber, and Proteus
 - Principles of management, including diagnosis, timing of treatment, options for surgical and nonsurgical treatment, and potential complications
 - Ear Reconstruction
 - Identification of external ear deformities
 - Principles of management for external ear deformities
 - Congenital hand deformities
 - Embryology, diagnosis, identification, and classification

COMPETENCIES

- Principles of management of the following categories of deformity, including but not limited to:
 - Type I – failure of formation
 - Type II – failure of differentiation
 - Type III - duplication
 - Type IV - overgrowth
 - Type V - undergrowth
 - Type VI - constriction bands syndrome
 - Type VII - generalized anomalies and syndromes
- Congenital Nevi
 - Identification, classification, and treatment
- Adolescent breast asymmetry
 - Identification of underlying asymmetry, including but not limited to asymmetry of the breast, thorax, or muscle
 - Principles of management
 - Identification of associated syndromes, including Poland syndrome
- MAXILLOFACIAL TRAUMA
 - A comprehensive approach to the patient with maxillofacial trauma that includes ATLS protocols
 - Management of the compromised airway
 - Protection of the cervical spine and assessment of cervical spine injuries
 - Assessment for the presence of intracranial trauma
 - Ocular trauma
 - Cranial nerve trauma
 - Assessment of other associated injuries with appropriate collaboration and referral to other specialists
 - Principles of managing acute trauma of the face, including but not limited to:
 - Reduction and stabilization of facial fractures, with expertise in handling all bones of the face
 - Treatment of soft tissue injuries of the face and scalp, including skin, subcutaneous tissue, muscles, vessels, and nerves
 - Principles of dental occlusal relationships and their treatment, including orthognathic surgery
 - Interpretation of diagnostic imaging studies of the facial skeleton
 - Principles of late reconstruction of deformities secondary to maxillofacial trauma
- BURNS AND COLD INJURY
 - Pathophysiology (local and systemic) of burn injuries, including thermal, chemical, electrical, radiation, and friction burns
 - Inhalation injury
 - Burn resuscitation and monitoring of the acutely injured patient
 - Acute and long term burn wound care
 - Principles of surgical debridement and wound closure
 - Ethical issues surrounding life-threatening burns
 - Psycho-social issues associated with burns, including but not limited to physical abuse, particularly of children and the elderly, substance abuse, and mental illness

COMPETENCIES

- Nutritional requirements of burn patients
 - Available skin substitutes and their appropriate application
 - Sequelae of burn injuries, including but not limited to the effect of burns on growth and development, heterotopic ossification, ocular complications, and the central nervous system (CNS) complications of electrical burns
 - Principles of reconstruction of burn deformities, including resurfacing, release of contractures, reconstruction of facial features, and reconstruction of the hand
 - Pathophysiology and protocols for resuscitation of cold injury and hypothermia
 - Principles of managing frostbite and immersion injuries
 - Prognostic signs and tests of the severity and extent of cold injury, including the use of diagnostic imaging
 - Indications for and timing of surgical debridement and amputation
 - Sequelae of cold injury, including effects on growth and development, skin and soft tissues, circulation, bones, and joints
- AESTHETIC (COSMETIC) SURGERY
- Psychological and social forces that contribute to a patient’s request for cosmetic surgery
 - Psychiatric conditions diagnosed preoperatively that preclude surgery, including an understanding of body dysmorphic disorder and the adverse consequences that can occur if surgery is performed for such patients
 - Ethical issues involved in the provision of surgical or non-surgical procedures for normal individuals who are not affected by congenital deformities, trauma, or disease
 - Preoperative counselling of the patient requesting aesthetic surgery, including advice on the risks and benefits of both surgical and non-surgical procedures
 - Appropriate preoperative discussion of the risks, side effects, and alternative therapies
 - Preoperative cosmetic diagnosis when a patient perceives there to be an aesthetic problem
 - Management of expectations of patients who have had aesthetic surgery and provision of postoperative psychological support, including the recognition of psychiatric symptoms that require referral to the appropriate specialist
 - Basic science, anatomy, and principles involved in all standard aesthetic surgical and non-surgical procedures, including but not limited to:
 - Breast
 - Breast augmentation
 - Aesthetic breast reduction
 - Mastopexy
 - Fat grafting
 - Nipple aesthetic procedures
 - Torso
 - Liposuction
 - Abdominoplasty
 - Lower body lift
 - Buttock lift
 - Buttock augmentation
 - Upper and lower limb
 - Liposuction

COMPETENCIES

- Brachioplasty
- Facial
 - Influences on patient perception of facial normalcy, including ethnicity, age, peer pressure, and psychosocial circumstances
 - Principles involved in changing aesthetic features of the face that are not related to aging, including but not limited to:
 - ... Augmentation of the face utilizing alloplastic materials, autogenous grafts (fat, cartilage, fascia, dermis, or bone) in all locations, including but not limited to the cheeks, orbit, and lips
 - ... Recontouring the face with open surgery (such as fat or bone removal) or closed methods (such as liposuction)
 - ... Aesthetic osteotomies of facial bones
 - ... Rhinoplasty, including principles of managing the nasal airway
 - Principles involved in facial rejuvenation surgery related to the aging process
 - ... Normal aging process as it affects bone, soft tissue, and skin
 - ... Effects of sun damage, nicotine, and other environmental factors on the normal aging process
 - ... Skin restoration, including dermabrasion, chemical peels, the use of retinoids, and light based therapies, including laser treatment
 - ... Ablating deeper crease lines utilizing injectable fillers, surgical removal of muscle, and chemical denervation of muscle utilizing botulinum toxin
 - ... Facelift surgery, including surgical redistribution of skin, subcutaneous tissue, and the platysma, as well as excision of skin and soft tissue
 - ... Blepharoplasty, including surgical manipulation of fat, skin, and muscle, and canthopexy procedures where necessary
 - ... Brow lift, including methods to raise or reshape the forehead/eyebrow complex and to alter the position of the anterior hairline as indicated
- Describe the CanMEDS framework of competencies relevant to plastic surgery
- Apply the lifelong learning skills of the Scholar role to implement a personal program to maintain the most current knowledge and enhance areas of professional competence
- Contribute to the enhancement of quality care and patient safety in plastic surgery, integrating the best available evidence and best practices

3) Perform a complete and appropriate assessment of a patient

- Identify and explore issues to be addressed in a patient encounter, including the patient's context and preference in the management of life threatening emergencies
- Elicit a history that is relevant, concise, and accurately reflects the patient's context and preferences for the purposes of prevention and health promotion, diagnosis, and/or management
- Perform a focused physical examination that is relevant and accurate for the purposes of prevention and health promotion, diagnosis, and/or management
- Select medically appropriate investigative methods in a resource-effective and ethical manner

COMPETENCIES

- Demonstrate effective clinical problem solving and judgment to address patient problems, including interpreting available data and integrating information to generate differential diagnoses and management plans

4) Use preventive and therapeutic interventions effectively

- Implement a management plan in collaboration with a patient and the patient's family
- Demonstrate appropriate and timely application of preventive and therapeutic interventions relevant to plastic surgery
- Ensure appropriate informed consent is obtained for therapies
- Ensure patients receive appropriate end-of-life care

5) Demonstrate proficient, effective, appropriate, and timely use of procedural skills, both diagnostic and therapeutic, relevant to plastic surgery

- Demonstrate effective, appropriate, and timely performance of diagnostic and therapeutic procedures relevant to their practice

BASIC PROCEDURES OF PLASTIC SURGERY

- Medical (non-operative) management techniques for acute and chronic wounds
- Direct wound closure techniques, including, where appropriate, the repair of deep structures including muscle, nerves, tendons, vessels, and bone
- Debridement of complex wounds
- Techniques for skin graft harvest and skin graft application, both split thickness and full thickness
- Harvest from appropriate sites, preparation of the recipient bed, and application of autogenous grafts of mucosa, fat, fascia, nerve, blood vessel, cartilage, tendon, and bone
- Use of all forms of flaps for wound reconstruction, including local, regional, distant, and free flaps. Flap tissues include:
 - Skin
 - Muscle
 - Fascia
 - Myocutaneous tissues
 - Other composite tissues
- Microsurgical techniques
- Endoscopy where indicated
- Use of power equipment, including but not limited to drills, dermatomes, saws, liposuction machines, and dermabraders
- Use of devices, including but not limited to electrocautery, operative lasers, ultrasound, and radiofrequency systems
- Use of biomaterials, including but not limited to human blood products, tissue allografts, and tissue xenografts

COMPETENCIES

EMERGENCY, PERIOPERATIVE, AND POSTOPERATIVE CARE

- Surgical application of ATLS principles, including but not limited to endotracheal intubation, cricothyroidotomy, and emergency tracheostomy
- Safe and effective administration of local anesthesia
- Safe and effective administration of conscious sedation
- Surgical execution of basic plastic surgical techniques as applicable for each and every clinical situation
- Safe and effective use of potentially dangerous equipment, including power tools, electrocautery, and energy-based systems

HEAD AND NECK

- Interpretation of imaging modalities, including radiographs, computerized tomography (CT), magnetic resonance imaging (MRI), radionuclide scans, and angiograms of structures in the head and neck region, as applicable to plastic surgery
- Techniques to repair and reconstruct all forms of defects of the soft tissues and skeleton resulting from trauma, tumor excision, infection, inflammation, radiation, and degenerative processes
- Specific techniques to reconstruct the ear, for conditions including but not limited to microtia, outstanding ears, and defects from all causes
- Specific techniques to reconstruct the eyelids, including but not limited to:
 - Ptosis repair
 - Cannulation, stenting, and repair of the lacrimal canaliculi and lacrimal duct
 - Canthoplasty and canthopexy techniques
 - Reconstruction of eyelid defects from all causes utilizing, as required: skin grafts, mucosal grafts, local flaps, and distant flaps
- Specific techniques to reconstruct the lips, including cleft lip deformities, and the repair of defects from all causes
- Rhinoplasty techniques, including but not limited to:
 - Nasal septal resection, repair, or reconstruction
 - Turbinate revision
 - Internal valve repair (spreader grafts)
 - External valve repair
 - Osteotomies of all types
 - Nasal tip revision and reconstruction
 - Nasal dorsum lowering
 - Nasal dorsum augmentation with autologous tissue
- Nasal reconstruction techniques, including but not limited to:
 - Skin grafts
 - Composite grafts
 - Cartilage grafts
 - Bone grafts
 - Fascial grafts
 - All available flaps: local, regional, and distant
- Scalp reconstruction utilizing grafts and all available flaps: local, regional, and distant
- Cheek reconstruction utilizing grafts and all available flaps: local, regional, and distant
- Dissection of the extra-temporal facial nerve
- Reconstruction techniques for facial nerve related deformities, as necessary: nerve grafts, static slings, facelift techniques, eyelid procedures, forehead procedures, and free flap techniques
- Cannulation and repair of the parotid duct

COMPETENCIES

- Mandibular reconstruction techniques, including bone graft techniques, local flaps, distant flaps, and free flaps

HAND AND UPPER EXTREMITY

- Interpretation of imaging modalities, including radiographs, fluoroscopy, CT scans, MRI, radionuclide scans, ultrasound, Doppler scans, and angiograms, as applicable to plastic surgery
- Measurement of upper extremity compartment pressures
- Interpretation of electrophysiological studies applicable to plastic surgery
- Basic plastic surgical techniques applied to soft tissue defects of the hand: skin grafts, composite grafts, skin flaps (local, regional, and distant), and free flaps of all types
- Hand and wrist fractures - including closed reduction methods, splinting, external fixation, open reduction, and internal fixation using all available methods
- Repair of hand and wrist ligament disruptions, dislocations, and fracture dislocations utilizing closed reduction methods, splinting, external fixation, open reduction, and internal fixation using all available methods
- Ligament reconstruction
- Joint reconstruction
- Treatment of non-unions, Kienbock's disease, and other chronic problems, utilizing all available techniques
- Bone grafting
- Tendon repair in the acute and chronic setting, including direct suture repair, delayed tendon repair, tendon grafting, and tendon transfers
- Tendon sheath release
- Tenolysis
- Revascularization techniques and all techniques involved in extremity replantation
- Escharotomy and fasciotomy
- Peripheral nerve laceration repair
- Release of compression neuropathies
- Resection and repair of nerve tumors
- Nerve grafting
- Fasciotomy and palmar fasciectomy techniques for Dupuytren's disease
- Joint replacement techniques
- Incision and drainage techniques for hand and upper extremity infections, including finger tip and finger nail infections and deep space infections of the hand
- Thumb reconstruction
- Intraoperative use of appropriate imaging techniques
- Intraoperative use of power equipment for the fixation of fractures

LOWER EXTREMITY

- Interpretation of imaging modalities, including radiographs, fluoroscopy, CT scans, MRI, radionuclide scans, ultrasound, Doppler scans, and angiograms, as applicable to plastic surgery
- Measurement of lower extremity compartment pressures
- Interpretation of electrophysiological studies applicable to plastic surgery
- Debridement for major soft tissue injury from any cause, including but not limited to trauma, infection, necrotizing fasciitis, pressure necrosis, and burns
- Escharotomy and fasciotomy
- Incision and drainage techniques for lower extremity infections

COMPETENCIES

- All basic plastic surgical techniques applied to soft tissue defects of the lower extremity due to any cause to include: skin grafts, composite grafts, skin flaps (local, regional, distant), and free flaps of all types
- All techniques involved in extremity replantation
- Peripheral nerve laceration repair
- Release of compression neuropathies
- Resection and repair of nerve tumors
- Nerve grafting

BREAST: NON-COSMETIC

- Interpretation of imaging modalities, including mammography, ultrasound scans, and MRI, as applicable to plastic surgery
- Basic plastic surgical techniques applied to soft tissue defects of the breast from any cause: skin grafts, composite grafts, skin flaps (local, regional, distant), and free flaps of all types
- Breast reduction (male and female)
- Balancing procedures to correct breast asymmetry
- Mastectomy techniques: prophylactic, skin sparing, and nipple sparing
- Breast reconstruction for partial or complete defects of the breast from all etiologies, in both the immediate and delayed post-mastectomy phase. Techniques must include all available methods, including but not limited to tissue expansion, prosthetic devices, fat grafting, and autologous reconstruction with local, regional, and distant flaps
- Nipple-areolar complex reconstruction
- Techniques to reconstruct congenital breast deformities, including aplasia and tuberous breast

ABDOMEN, TRUNK AND PELVIS

- Interpretation of imaging modalities of the abdominal wall, thoracic wall, and pelvis, including radiographs, CT scans, MRI, radionuclide scans, ultrasound, Doppler scans, and angiograms, as applicable to plastic surgery
- Reconstruction of chest wall defects using all available methods
 - Sternal osteomyelitis
- Reconstruction of abdominal wall defects using all available methods
- Panniculectomy
- Rectus diastasis repair
- Reconstruction of perineal defects using all available methods
 - Vaginal reconstruction
 - Penile reconstruction
- Decubitus ulcer management, including but not limited to appropriate medical management, surgical debridement, the use of wound care systems, and flap reconstruction utilizing all available flaps

SKIN

- Diagnostic techniques, including incisional and excisional biopsies of skin lesions
- Closure of skin defects
 - Medical management without surgery
 - Suture techniques
 - Skin grafts of all types
 - Local, regional, distant, and free flaps

COMPETENCIES

- Tissue expansion
- Excision of subcutaneous tumors

PEDIATRIC AND CRANIOFACIAL SURGERY

- Manage pediatric patients with uncomplicated single system trauma in a community setting with appropriate facilities and support
 - Simple and complex lacerations
 - Simple hand fractures
 - Simple tendon and nerve lacerations
 - Hand infections
 - Simple facial fractures (fractures of the nose and non-displaced midfacial fractures)
 - Minor burns
 - Other acute conditions requiring surgical care, including but not limited to meningococemia and necrotizing fasciitis
- Manage pediatric patients with simple and uncomplicated congenital and acquired deformities in a community setting with appropriate facilities and support
 - Minor hand deformities, including but not limited to:
 - Trigger finger and thumb
 - Simple polydactyly
 - Simple clinodactyly
 - Simple camptodactyly
 - Small and medium congenital nevi
 - Positional plagiocephaly and simple torticollis
 - Prominent ears and other minor ear deformities
 - Simple hemangiomas and vascular malformations
 - Simple benign lesions, including but not limited to pilomatrixoma and dermoid, inclusion, and synovial cysts
 - Adolescent breast asymmetry reconstruction (allogenic, autologous)
- Manage pediatric patients with more complex problems by appropriately counseling, referring, and assisting in the pre- and postoperative care of the patient and family, including pediatric patients with:
 - Hemangiomas and vascular malformations, including but not limited to Sturge-Weber, Klippel-Trenaunay, Parkes-Weber, Maffucci, Rendu-Osler-Weber, and Proteus syndromes
 - Craniosynostosis: unisutural and multiple suture
 - Other craniofacial syndromes or spectrums, including but not limited to Pierre Marie Robin Sequence, ocular-auricular-vertebral spectrum, Treacher Collins, Nagai, Binder, Romberg, Mobius, Down, Beckwith-Weidemann, Gorlin, neurofibromatosis, fibrous dysplasia, and Klippel-Feil
 - Cleft lip/palate and velopharyngeal insufficiency
 - Major burns
 - Major limb deformities
 - Tumors (benign or malignant)

MAXILLOFACIAL TRAUMA

- Techniques of ATLS, including endotracheal intubation, cricothyroidotomy, and tracheostomy
- Reduction and fixation of facial fractures utilizing all available techniques: intermaxillary fixation, interosseous wires, plates, screws, and external fixators

COMPETENCIES

- Reduction and fixation of upper facial fractures: frontal sinus, orbital rims, and orbit
- Reduction and fixation of midfacial fractures: nose, nasoethmoidal complex, zygoma, Le Fort fractures
- Reduction and fixation of lower facial fractures: alveoli, mandible
- Reduction and fixation of panfacial bony injuries
- Treatment of penetrating, panfacial injuries, including gunshot wounds

BURN AND COLD INJURY

- Interpretation of imaging modalities where necessary, including radiographs, CT scans, MRI, radionuclide scans, and bronchoscopy, as applicable to plastic surgery
- Clinical assessment of burn wound extent and burn wound depth
- Fluid and electrolyte management for the burn patient
- Respiratory support for inhalational injuries
- Non-surgical management of burn and cold injuries utilizing topical antibacterial agents and all available techniques for topical wound care
- Wound debridement, including full thickness excision and tangential excision
- Escharotomy and fasciotomy
- Autograft (split thickness and full thickness)
- Allograft
- Xenograft
- Flaps of all types (local, regional, distant)
- Late burn wound reconstruction utilizing scar incision, scar excision, tissue expansion, local flaps, regional flaps, and distant flaps
- Appropriate use of physiotherapy
- Appropriate use of occupational therapy, including splinting techniques

AESTHETIC (COSMETIC) SURGERY

- Non-surgical and surgical treatments, including but not limited to:
 - Non-surgical facial rejuvenation techniques
 - Dermal and soft tissue filler injections
 - Botulinum toxin injections
 - Skin resurfacing technologies, including dermabrasion, chemical peel, and laser/light based technologies
 - Facial recontouring surgery, including the use of prosthetic implants, removal of facial soft tissue or bone, and addition of soft tissue grafts, including autologous fat
 - Facial rejuvenation surgery, including brow lift, blepharoplasty, and facelift
 - Rhinoplasty, including management of the nasal dorsum, nasal tip, nostrils, and nasal airway
 - Breast aesthetic surgery, including breast augmentation, mastopexy, mastopexy combined with augmentation, cosmetic breast reduction, and cosmetic alteration of the nipple-areolar complex
 - Aesthetic surgery of the trunk, including panniculectomy, abdominoplasty, total body lift (belt lipectomy), and all forms of body contouring, including liposuction and lipoinjection
 - Aesthetic surgery of the upper and lower extremities, including brachioplasty and suction assisted lipectomy

COMPETENCIES

- Ensure appropriate informed consent is obtained for procedures
- Document and disseminate information related to procedures performed and their outcomes
- Ensure adequate follow-up is arranged for procedures performed

6) Seek appropriate consultation from other health professionals, recognizing the limits of their expertise

- Demonstrate insight into the resident's own limits of expertise
- Demonstrate effective, appropriate, and timely consultation for another health professional as needed for optimal patient care
- Arrange appropriate follow-up care services for a patient and their family

Communicator

Definition

As Communicators, plastic surgeons effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during, and after the medical encounter.

Key and Enabling Competencies:

Plastic surgeons are able to:

1) Develop rapport, trust, and ethical therapeutic relationships with patients and families

- Recognize that being a good communicator is a core clinical skill for physicians, and understand that effective physician-patient communication can foster patient satisfaction, physician satisfaction, treatment adherence, and improved clinical outcomes
- Establish positive therapeutic relationships with patients and their families that are characterized by understanding, trust, respect, honesty, and empathy
 - Demonstrate the ability to effectively communicate with and support patients and families affected by disease, injury, or congenital defects
 - Provide emotional support to the trauma patient, including appropriate communication during emergency assessment, operative management, postoperative care, and long term recovery
 - Demonstrate compassionate understanding of patients' emotional investment when presenting for elective reconstructive surgery of bodily defects caused by congenital, infective, traumatic, or malignant etiologies
 - Provide family support when children have congenital or acquired conditions requiring surgical correction
 - Demonstrate understanding of the unique issues related to the patient requesting cosmetic surgery, including preoperative psychological assessment, preoperative understanding of patient motivation, detailed informed consent, counselling to ensure appropriate expectations, and providing emotional support in the postoperative phase
 - Appreciate the level of communication required with burn patients and their families, including ethical decision making and emotional support during end-of-life care
- Respect patient confidentiality, privacy, and autonomy
- Listen effectively
- Be aware and responsive to nonverbal cues
- Facilitate a structured clinical encounter effectively

COMPETENCIES

- 2) Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals
 - Gather information about a disease and about a patient's beliefs, concerns, expectations, and illness experience
 - Seek out and synthesize relevant information from other sources, such as a patient's family, caregivers, and other professionals
- 3) Convey relevant information and explanations accurately to patients and families, colleagues, and other professionals
 - Deliver information to patients and families, colleagues, and other professionals in a humane manner and in such a way that it is understandable and encourages discussion and participation in decision-making
 - Communicate effectively with families, patients, peers, and health care team members
 - Communicate appropriately with individuals who are indirectly involved in the delivery of health care, including students, volunteers, and support staff
- 4) Develop a common understanding on issues, problems, and plans with patients, families, and other professionals to develop a shared plan of care
 - Identify and explore problems to be addressed from a patient encounter effectively, including the patient's context, responses, concerns, and preferences
 - Respect diversity and difference, including but not limited to the impact of gender, religion, and cultural beliefs on decision-making
 - Encourage discussion, questions, and interaction in the encounter
 - Engage patients, families, and relevant health professionals in shared decision-making to develop a plan of care
 - Address challenging communication issues effectively, such as obtaining informed consent, delivering bad news, and addressing anger, confusion, and misunderstanding
- 5) Effectively convey oral and written information about a medical encounter
 - Maintain clear, accurate, and appropriate records of clinical encounters and plans
 - Document and disseminate information related to procedures performed and their outcomes appropriately
 - Present verbal reports of clinical encounters and plans effectively
 - Present medical information to the public or media about a medical issue
 - Demonstrate an understanding of the methods of and constraints on communication when dealing with organizations, including but not limited to the media, government, and other regulatory agencies

Collaborator

Definition

As Collaborators, plastic surgeons effectively work within a health care team to achieve optimal patient care.

Key and Enabling Competencies:

Plastic Surgeons are able to:

- 1) Participate effectively and appropriately on an interprofessional health care team
 - Describe the plastic surgeon's roles and responsibilities to other professionals

COMPETENCIES

- Describe the roles and responsibilities of other professionals within the health care team
- Recognize and respect the diversity of roles, responsibilities, and competences of other professionals in relation to their own
- Work with others to assess, plan, provide, and integrate care for individual patients (or groups of patients)
 - Demonstrate the ability to collaborate with a wide range of other medical and surgical professionals whose areas of expertise overlap or complement that of plastic surgery
 - Collaborate with anesthesiologists and other practitioners during the perioperative period
- Work with others to assess, plan, provide, and review other tasks, such as research problems, educational work, program review, or administrative responsibilities
 - Interact effectively and professionally with:
 - Administrators and health authorities
 - Charitable and volunteer organizations
 - Educators and universities
 - Medical legal experts
 - Multi-disciplinary and interprofessional clinics and services
 - Professional organizations and regulatory authorities
 - Participate in multidisciplinary rounds
- Participate effectively in interprofessional team meetings
- Enter into cooperative relationships with other professions for the provision of quality care
 - Work collaboratively with hand therapists for patients with hand problems, and integrate them appropriately into hand surgery clinics if possible
 - Work collaboratively with intensivists and nutritionists in the care of trauma and burn patients
 - Work collaboratively with all other surgical specialties to coordinate the reconstruction of congenital, traumatic, and neoplastic defects
 - Work and teach collaboratively with the nursing staff in all areas of the hospital for the better care of plastic surgery patients
- Describe the principles of team dynamics
- Respect team ethics, including confidentiality, resource allocation, and professionalism
- Demonstrate leadership on a health care team

2) Work effectively with other health professionals to prevent, negotiate, and resolve interprofessional conflict

- Demonstrate a respectful attitude towards colleagues and other members of an interprofessional team
- Work with other professionals to prevent conflicts
- Employ collaborative negotiation to resolve conflicts
- Respect differences and address misunderstandings and limitations in other professionals
- Recognize one's own differences, misunderstandings, and limitations that may contribute to interprofessional tension
- Reflect on interprofessional team function

Manager

Definition

As Managers, plastic surgeons are integral participants in health care organizations, organizing sustainable practices, making decisions about allocating resources, and contributing to the effectiveness of the health care system.

Key and Enabling Competencies

Plastic surgeons are able to:

- 1) Participate in activities that contribute to the effectiveness of their health care organizations and systems
 - Work collaboratively with others in their organizations.
 - Participate in systemic quality process evaluation and improvement, such as patient safety initiatives
 - Describe the structure and function of the health care system as it relates to plastic surgery, including the roles of physicians
 - Describe principles of health care financing, including physician remuneration, budgeting, and organizational funding at the hospital, regional, provincial, and national levels
- 2) Manage their practice and career effectively
 - Set priorities and manage time to balance patient care, practice requirements, outside activities, and personal life
 - Utilize principles and develop skills to improve time management
 - Manage a plastic surgery practice, including finances, human resources, an office, outpatient clinics, and specialty care units
 - Implement processes to ensure personal practice improvement
 - Employ information technology appropriately for patient care
- 3) Allocate finite health care resources appropriately
 - Recognize the importance of just allocation of health care resources, balancing effectiveness, efficiency, and access with optimal patient care
 - Manage patient flow effectively, including admissions, investigations and treatments, surgery, and discharge planning
 - Apply evidence and management processes for cost-appropriate care
- 4) Serve in administrative and leadership roles, as appropriate
 - Chair or participate effectively in committees and meetings
 - Participate on resident, university, or hospital committees
 - Lead or implement changes in health care
 - Plan relevant elements of health care delivery, including operating room and call schedules

COMPETENCIES

Health Advocate

Definition

As Health Advocates, plastic surgeons responsibly use their expertise and influence to advance the health and well-being of individual patients, communities, and populations.

Key and Enabling Competencies

Plastic surgeons are able to:

- 1) Respond to individual patient health needs and issues as part of patient care
 - Identify the health needs of an individual patient, including but not limited to:
 - Patients requiring contour surgery
 - Provide potential obesity counseling
 - Provide dietary counseling
 - Provide or promote exercise and lifestyle counseling
 - Patients requesting facial rejuvenation surgery
 - Advise patients regarding the proper use of sunscreen
 - Promote smoking cessation initiatives and provide support to patients trying to quit smoking
 - Provide psychological screening for patients with unrealistic expectations or for patients after a life changing event
 - Patients requiring breast surgery (reduction, augmentation, or mastopexy)
 - Encourage regular self-examination
 - Promote mammography screening
 - Verify family history and other risk factors
 - Pediatric patients
 - Identify and respond appropriately in suspected cases of child maltreatment
 - Promote awareness of methods to reduce the occurrence of accidental injuries
 - Promote initiatives to prevent dog bite injuries
 - Promote awareness of measures to prevent the formation of positional plagiocephaly
- 2) Respond to the health needs of the communities that they serve
 - Describe the practice communities that they serve
 - Identify opportunities for advocacy, health promotion, and disease prevention in the communities that they serve, and respond appropriately. Possible approaches include, but are not limited to:
 - Teach pediatricians about positional plagiocephaly
 - Provide information regarding excess sun exposure and the use of appropriate clothing and sunscreen
 - Promote poster placement of anti-burn precautions at campgrounds, of lawn mower precautions at community centers, and of dog precautions in veterinary offices and community centers
 - Appreciate the possibility of competing interests between the communities served and other populations
- 3) Identify the determinants of health for the populations that they serve
 - Identify the determinants of health of the populations, including barriers to access to care and resources

COMPETENCIES

- Identify vulnerable or marginalized populations within those served and respond appropriately
 - Populations with low socioeconomic status who may be at risk for burn injury and child abuse
 - Newborns at risk of deformational plagiocephaly
 - Those with a family history of skin cancer or breast cancer

4) Promote the health of individual patients, communities, and populations

- Describe an approach to implementing a change in a determinant of health of the populations they serve
- Describe how public policy impacts the health of the populations served
- Identify points of influence in the health care system and its structure
- Describe the ethical and professional issues inherent in health advocacy, including altruism, social justice, autonomy, integrity, and idealism
- Appreciate the possibility of conflict inherent in their role as a health advocate for a patient or community, similar to that of a manager or gatekeeper
- Describe the role of the medical profession in advocating collectively for health and patient safety

Scholar

Definition

As Scholars, plastic surgeons demonstrate a lifelong commitment to reflective learning, as well as the creation, dissemination, application, and translation of medical knowledge.

Key and Enabling Competencies

Plastic Surgeons are able to:

1) Maintain and enhance professional activities through ongoing learning

- Describe the principles of maintaining competence
- Describe the principles and strategies for implementing a personal knowledge management system
- Recognize and reflect on learning issues in practice
- Conduct a personal practice audit
- Pose an appropriate learning question
- Access and interpret relevant evidence
- Integrate new learning into practice
- Evaluate the impact of any changes in practice
- Document the learning process

2) Evaluate medical information and its sources critically, and apply this appropriately to practice decisions

- Describe the principles of critical appraisal
- Critically appraise retrieved evidence in order to address a clinical question
- Integrate critical appraisal conclusions into clinical care

3) Facilitate the education of patients, families, students, residents, other health professionals, the public, and others, as appropriate

- Describe principles of learning relevant to medical education

COMPETENCIES

- Identify collaboratively the educational needs and desired educational outcomes of others
- Select effective teaching strategies and content to facilitate others' education
- Demonstrate an effective lecture or presentation
- Assess and reflect on a teaching encounter
- Provide effective feedback
- Describe the principles of ethics with respect to teaching

4) Contribute to the development, dissemination, and translation of new knowledge and practices

- Describe the principles of research and scholarly inquiry
- Describe the principles of research ethics
- Pose a scholarly question
- Conduct a systematic search for evidence
- Select and apply appropriate methods to address the question
- Disseminate the findings of a study appropriately

Professional

Definition

As Professionals, plastic surgeons are committed to the health and wellbeing of individuals and society through ethical practice, profession-led regulation, and high personal standards of behavior.

Key and Enabling Competencies

Plastic surgeons are able to:

1) Demonstrate a commitment to their patients, profession, and society through ethical practice

- Exhibit appropriate professional behaviors in practice, including honesty, integrity, commitment, compassion, respect, and altruism
- Identify the three facets of professionalism: primacy of patient welfare, self-regulation, and physician autonomy
- Describe the nature of the social contract that medicine has with both the patient and society
- Define what is meant by patient autonomy and how it is reflected in the practice of plastic surgery
- Demonstrate a commitment to delivering the highest quality care and maintenance of competence
- Recognize and appropriately respond to ethical issues encountered in practice
- Manage conflicts of interest appropriately
- Recognize the principles and limits of patient confidentiality as defined by professional practice standards and the law
- Maintain appropriate boundaries with patients

COMPETENCIES

2) Demonstrate a commitment to their patients, profession, and society through participation in profession-led regulation

- Demonstrate knowledge and an understanding of the professional, legal, and ethical codes of practice
 - Assess and reflect on the importance of physician autonomy and the high professional standard of behavior expected
 - Outline the nature of self-regulation and the mechanism by which the issues of professionalism are addressed
- Fulfill and understand the regulatory and legal obligations required of current practice
 - Report suspected cases of child maltreatment appropriately
- Demonstrate accountability to professional regulatory bodies
- Recognize and respond to others' unprofessional behaviors in practice
- Participate in peer review

3) Demonstrate a commitment to physician health and sustainable practice

- Balance personal and professional priorities to ensure personal health and a sustainable practice
- Strive to heighten personal and professional awareness and insight
- Recognize other professionals in need and respond appropriately

TEACHING AND LEARNING

Academic curriculum

- 1) Resident activity runs weekly throughout the academic year.
- 2) The main activity takes place during a half day, starting at 1 p.m. and lasting for four hours (currently every Thursday).
- 3) Another day of activity is Sunday, with the micro animal lab, described in detail below.

General academic activities

- 1) Discussion topic
- 2) Journal club
- 3) Consultant lecture
- 4) Other services lectures
- 5) Anatomy lab and flap dissection
- 6) Micro animal lab
- 7) Universal topics review
- 8) Seminars

Discussion topic

One hour each week can be used to discuss different subjects of clinical significance, such as surgical marking or approaches to different problems. During this activity the senior residents will run the discussion under the supervision of a moderator.

Journal club

Once per month we discuss several articles chosen by the senior residents and the program director. The aim of this activity is to gain skills in critical appraisal and to develop the skills required to read clinical papers.

Consultant lecture

Attending surgeons will present at least one lecture each month in their field of specialty. The senior residents choose the topics at the beginning of the academic year (e.g., wrist disorders, brachial plexus management, etc.).

Other off-services lecture

A guest consultant is invited to present a lecture in their field that is relevant to plastic surgery. This will help broaden our knowledge base and will help the resident understand the significance of other specialties in supporting our clinical practice.

TEACHING AND LEARNING

Anatomy lab and flap dissection

Cadaver dissection will help residents understand anatomy, which is of paramount importance for their surgical development.

Some training centers will offer anatomy cadaver dissection. The anatomy lab is run monthly during the academic year. Each month, a resident will dissect one part of the body and will present it to the rest of the residents under the supervision of an attending.

The table below provides an example:

Date	Region	Moderator
27/November/14	Leg and foot dissection and flaps	
25/December/14	Thigh, buttocks, and groin	
5/February/ 15	Neck, brachial plexus, and arm	
5/March/15	Forearm and hand	
5/April/15	Head and face	
23/April/15	Trunk	

Micro animal lab

Senior residents attend four to five sessions of applied micro anastomosis under a microscope, under the supervision of a micro surgeon.

Each resident will participate in approximately 10 sessions during the two senior years. It is the senior resident's responsibility to make sure he/she secures his/her basic training in microsurgery, as the micro lab is open for almost the entire year.

Universal topics

Intent

These are high value, interdisciplinary topics of utmost importance to the trainee. The reason for delivering the topics centrally is to ensure that every trainee receives high quality education and develops essential core knowledge. These topics are common to all specialties.

Topics included here meet one or more of the following criteria:

- 1) Impactful: these are topics that are common or life-threatening
- 2) Interdisciplinary: topics that are difficult to teach by a single discipline
- 3) Orphan: topics that are poorly represented in the undergraduate curriculum
- 4) Practical: topics that trainees will encounter in hospital practice

Development and delivery

Core topics for the residents' curriculum will be developed and delivered centrally by the Commission through an e-learning platform. A set of preliminary learning outcomes for each topic will be developed. Content experts, in collaboration with the central team, may modify the learning outcomes.

These topics will be didactic in nature with a focus on practical aspects of care. These topics will be more content-heavy compared to workshops and other face-to-face interactive sessions that are planned.

The suggested duration of each topic is 1.30 hours.

Assessment

The topics will be delivered in a modular fashion. At the end of each Learning Unit there will be an on-line formative assessment. After completion of all topics there will be a combined summative assessment in the form of a context-rich MCQ. All trainees must attain minimum competency in the summative assessment. Alternatively, these topics can be assessed in a summative manner along with a specialty examination.

Universal topics may include case studies, high quality images, worked examples of prescribing drugs in disease states, and internet resources.

First year residents

Topics to be covered:

- 1) Blood Transfusion: At the end of the Learning Unit, the resident should be able to:
 - Review the different components of blood products available for transfusion
 - Recognize the indications and contraindications of blood product transfusion
 - Discuss the benefits, risks, and alternatives to transfusion
 - Obtain consent for specific blood product transfusion
 - Perform steps necessary for safe transfusion
 - Develop an understanding of special precautions and procedures necessary during massive transfusions
 - Recognize transfusion-associated reactions and provide immediate management
- 2) Management of acute chest pain
- 3) Management of acute breathlessness
- 4) Management of hypotension and hypertension

For all of the above, the following learning outcomes apply. At the end of the Learning Unit, the resident should be able to:

- Triage and categorize patients
- Identify patients who need prompt medical and surgical attention
- Generate preliminary diagnoses based on history and physical examination
- Order and interpret urgent investigations
- Provide appropriate immediate management to patients
- Refer the patients to the next level of care, if needed

Second year residents

Topics to be covered

- 1) Sepsis, Systemic inflammatory response syndrome (SIRS), and Disseminated intravascular coagulation (DIC): At the end of the Learning Unit, the resident should be able to:
 - Explain the pathogenesis of sepsis, SIRS, and DIC
 - Identify patient-related and non-patient related predisposing factors of sepsis, SIRS, and DIC
 - Recognize a patient at risk of developing sepsis, SIRS, or DIC
 - Describe the complications of sepsis, SIRS, and DIC
 - Apply the principles of management of patients with sepsis, SIRS, and DIC
 - Describe the prognosis of sepsis, SIRS, and DIC

- 2) Antibiotic Stewardship: At the end of the Learning Unit, the resident should be able to:
 - Recognize antibiotic resistance as one of the most pressing public health threats globally
 - Describe the mechanism of antibiotic resistance
 - Determine the appropriate and inappropriate use of antibiotics
 - Develop a plan for safe and proper antibiotic usage, including the appropriate indications, duration, types of antibiotics, and discontinuation.
 - Appraise the local guidelines for the prevention of antibiotic resistance

- 3) Management of Fluids in Hospitalized Patients: At the end of the Learning Unit, the resident should be able to:
 - Review the physiological basis of water balance in the body
 - Assess a patient's hydration status
 - Recognize a patient with over or under hydration
 - Order fluid therapy (oral or intravenous) for a hospitalized patient
 - Monitor fluid status and response to therapy through history taking, physical examination, and selected laboratory investigations

- 4) Management of Acid-Base Electrolyte Imbalance: At the end of the Learning Unit, the resident should be able to:
 - Review the physiological basis of the electrolyte and acid-base balance in the body
 - Identify diseases and conditions that are likely to cause or be associated with an acid-base or electrolyte imbalance
 - Correct electrolyte and acid-base imbalances
 - Perform careful calculations, assessments, and other safety measures while correcting acid-base and electrolyte imbalances
 - Monitor response to therapy through patient history, physical examination, and selected laboratory investigations

Third year residents

Topics to be covered

- 1) Preoperative assessment: At the end of the Learning Unit, the resident should be able to:
 - Describe the basic principles of preoperative assessment
 - Perform a preoperative assessment of an uncomplicated patient, with special emphasis on:
 - General health assessment

TEACHING AND LEARNING

- Cardiorespiratory assessment
 - Medications and medical device assessment
 - Drug allergy
 - Pain relief needs
 - Categorize patients according to risk factors
- 2) Postoperative care: At the end of the Learning Unit, the resident should be able to:
- Devise a postoperative care plan, including monitoring of vitals, pain management, fluid management, medications, and laboratory investigations
 - Refer patients properly to appropriate facilities
 - Describe the process of postoperative recovery in a patient
 - Identify common postoperative complications
 - Monitor patients for possible postoperative complications
 - Institute immediate management for postoperative complications
- 3) Acute Pain Management: At the end of the Learning Unit, the resident should be able to:
- Review the physiological basis of pain perception
 - Proactively identify patients who might be in acute pain
 - Assess a patient with acute pain
 - Apply various pharmacological and non-pharmacological modalities available for acute pain management
 - Provide adequate pain relief for uncomplicated patients with acute pain
 - Identify and refer patients with acute pain who can benefit from specialized pain services
- 4) Chronic Pain Management: At the end of the Learning Unit, the resident should be able to:
- Review the biopsychosocial and physiological basis of chronic pain perception
 - Discuss various pharmacological and non-pharmacological options available for chronic pain management
 - Provide adequate pain relief for uncomplicated patients with chronic pain
 - Identify and refer patients with chronic pain who can benefit from specialized pain services

Fourth year residents

Topics to be covered:

- 1) Side Effects of Chemotherapy and Radiation Therapy: At the end of the Learning Unit, the resident should be able to:
- Describe important side effects (e.g., frequently occurring side effects or life or organ threatening side effects) of common chemotherapy drugs
 - Explain the principles of monitoring side-effects in a patient undergoing chemotherapy
 - Describe measures (pharmacological and non-pharmacological) available to ameliorate side effects of commonly prescribed chemotherapy drugs
 - Describe important (e.g., common and life-threatening) side effects of radiation therapy
 - Describe measures (pharmacological and non-pharmacological) available to ameliorate side effects of radiotherapy

TEACHING AND LEARNING

- 2) Comorbidities of Obesity: At the end of the Learning Unit, the resident should be able to:
- Screen patients for the presence of common and important comorbidities of obesity
 - Manage obesity-related comorbidities
 - Provide dietary and lifestyle advice for the prevention and management of obesity

Fifth year residents

Topics to be covered

- 1) Occupational Hazards of Health Care Workers (HCW): At the end of the Learning Unit, the resident should be able to:
- Recognize common sources and risk factors of occupational hazards among HCW
 - Describe common occupational hazards in the workplace
 - Become familiar with legal and regulatory frameworks governing occupational hazards among HCW
 - Develop a proactive attitude to promote workplace safety
 - Protect yourself and colleagues against potential occupational hazards in the workplace
- 2) Patient Advocacy: At the end of the Learning Unit, the resident should be able to:
- Define patient advocacy
 - Recognize patient advocacy as a core value governing medical practice
 - Describe the role of patient advocates in patient care
 - Develop a positive attitude towards patient advocacy
 - Be a patient advocate in conflicting situations
 - Be familiar with local and national patient advocacy groups

Sixth year residents

Topics to be covered

- 1) Ethical issues: transplantation/organ harvesting and withdrawal of care: At the end of the Learning Unit, the resident should be able to:
- Apply key ethical and religious principles governing organ transplantation and withdrawal of care
 - Be familiar with the legal and regulatory guidelines regarding organ transplantation and withdrawal of care
 - Counsel patients and families in the light of applicable ethical and religious principles
 - Guide patients and families to make informed decisions
- 2) Ethical issues: treatment refusal and patient autonomy: At the end of the Learning Unit, the resident should be able to:
- Predict situations in which a patient or family is likely to decline prescribed treatment
 - Describe the concept of a 'rational adult' in the context of patient autonomy and treatment refusal
 - Analyze key ethical, moral, and regulatory dilemmas in treatment refusal
 - Recognize the importance of patient autonomy in the decision making process
 - Counsel patients and families declining medical treatment in light of the best interest of the patient

Seminars

Note that a table of seminar topics will be given below.

Rules of Seminars

- 1) Each resident is responsible for his or her seminar according to the schedule given at the beginning of the academic year.
- 2) The resident will have a moderator to help with the preparation of the seminar. It is the responsibility of the resident to contact the moderators and discuss the seminar with them as he or she prepares it.
- 3) The seminar must be submitted 2 weeks prior to the date it will be presented to the residents, which means that the moderator should see the copy one month prior to the presentation date.
- 4) The seminars must be typed on A4 paper and should not exceed 30 pages per seminar.
- 5) A resident that fails to prepare his or her seminar on time will receive a warning letter from the local committee.
- 6) Presentation: the seminar highlights should be presented in 30 minutes.
- 7) Discussion: following the presentation, questions and discussion should last for 30 minutes and may be followed by clinical examples.
- 8) Attendance:
 - Residents must attend a minimum of 80% of the seminars; attendance will be taken at each seminar, and if a resident fails to attend 80% of the scheduled seminars he or she will receive a warning letter from the program director that will contribute towards disqualification from the program, as per the Saudi council rules and regulations.
 - Attendance in seminars is compulsory for the moderators and seminar coordinator.
 - Any moderator who fails to attend their seminars on recurrent basis may not be given any involvement in academic activities.

Under no circumstance should seminars be considered the only source of knowledge for the residents. Residents are expected to gain wider knowledge from other sources, such as textbooks and journals.

Tips for writing a seminar

- 1) The seminar should be a study guide for the residents
- 2) The cover page should be the title of the seminar, name of the resident, names of the moderators, and date of the presentation
- 3) The previous seminar author should be credited as well
- 4) The second page should be an outline of the topics and headings in the seminar
- 5) The seminar should include a list of references; it is very important to use a combination of text books, review articles, and new articles that are relevant
- 6) The resident should reference the previous seminar if the current seminar is based on it
- 7) Use headings and sub headings
- 8) Use plenty of diagrams, especially for anatomy, embryology, and surgical techniques
- 9) Use as many of the following headings as possible:
 - Introduction
 - Definition
 - Etiology
 - Congenital
 - Acquired
 - Epidemiology

TEACHING AND LEARNING

- Incidence
- Male vs. female
- Ethnic differences
- Classification
 - Use a classification system that will facilitate either the management or prognosis of the patient
- Clinical findings
 - List important clinical findings and specific signs
- Management
 - Investigations
 - Blood
 - Radiology
- Treatment
 - Non-operative
 - Physiological and splinting
 - Medical
 - Operative
- Complications:
 - Early/late
 - General/specific
- Prognosis

SEMINAR TOPICS

Section	Topic	Level	Objectives
HAND AND UPPER EXTREMITY	Discuss the functional anatomy and examination of the hand.	Junior	<ul style="list-style-type: none"> - Surface anatomy, including the fingertips - Bone anatomy - Joint anatomy - Neurovascular anatomy - Flexor and extensor tendons - Intrinsic muscles - Fascia, spaces, and ligaments - Systemic exam of each structure - Use THE HAND examination and diagnosis book by the American society for surgery of the hand
	The embryology of the upper extremity and classification of congenital hand anomalies	Junior	<ul style="list-style-type: none"> - Chronological description of upper extremity development and the effects of this timing - Different stages of arrest - Classification of congenital hand anomalies, including Burck Gumco - Camptodactyly, clinodactyly, delta phalanx, and arthrogryposis - Discuss for the above conditions: definition, classification, clinical presentation, pathology, treatment, and epidemiology

TEACHING AND LEARNING

Section	Topic	Level	Objectives
	Discuss congenital anomalies of the thumb, polydactyly, and syndactyly	Senior	<ul style="list-style-type: none"> - Thumb hypoplasia, duplication, triphalangeal thumb, and clasped thumb - Polydactyly, syndactyly, and poly-syndactyly - Radial and ulnar club hand and windblown hand - Discuss for the above conditions: definition, classification, clinical presentation, pathology, treatment, and epidemiology
	Discuss the early and late management of fingertip injuries, excluding the thumb	Junior	<ul style="list-style-type: none"> - Definition, classification, and management - Treatment, including local and regional flaps - Nail bed injuries
	Discuss the management of flexor tendon injuries	Senior	<ul style="list-style-type: none"> - Definition, classification, and clinical exam - Early and late treatment, including physiotherapy protocols - Complications and prognosis
	Discuss the management of extensor tendon injuries	Senior	<ul style="list-style-type: none"> - Definition, classification, and clinical exam - Early and late treatment, including physiotherapy protocols - Complications and prognosis
	Discuss the healing of tendons and nerves: discuss tendon grafting and nerve grafting	Junior	<ul style="list-style-type: none"> - Definition and pathophysiology - Technique - Tenolysis - Neuroma
	Discuss reflex sympathetic dystrophy (RSD) in the upper extremity and causalgia	Junior/ Senior	<ul style="list-style-type: none"> - Definition - Epidemiology - Etiology and pathophysiology - Classification
	Discuss hand fracture and dislocation I	Junior/ Senior	<ul style="list-style-type: none"> - Phalanges only
	Discuss hand fractures and dislocation II	Senior	<ul style="list-style-type: none"> - Thumb and metacarpals
	Discuss hand infection	Junior	<ul style="list-style-type: none"> - Finger tip: felon, paronychia, and viral whitlow - Deep spaces hand infection - Suppurative tenosynovitis - Septic arthritis

TEACHING AND LEARNING

Section	Topic	Level	Objectives
	Discuss the management of amputation in the hand and replantation	Senior	<ul style="list-style-type: none"> - Zones of amputation and indications and contraindications for replantation - Early and late management (excluding toe transfer techniques) - Surgical techniques - Post op care, including leeches - Complications
	Discuss thumb reconstruction	Senior	<ul style="list-style-type: none"> - Definition and classification - Surgical options - Local, regional, and distant flaps - Toe to thumb transfer techniques - Bone lengthening techniques - Complications and post op therapy
	Discuss Dupuytren's, trigger finger, de Quervain's disease, and Wattenberg syndrome	Senior	
	Discuss hand tumors	Senior	<ul style="list-style-type: none"> - Definition - Classification (broad): <ul style="list-style-type: none"> o Benign and malignant o Concentrate on: ganglion, giant cell tumor, lipoma, inclusion cyst, pyogenic granuloma, glomus tumor, mucous cyst, bone tumors, cysts, chondromas (Ollier disease, Maffocci syndrome)
	Discuss brachial plexus injury	Senior	<ul style="list-style-type: none"> - Anatomy - Obstetric - Traumatic - Clinical exam - Investigations
	Discuss treatment of brachial plexus injury	Senior	<ul style="list-style-type: none"> - Treatment: acute and late (tendon and muscle transfers, neurotization); include an algorithmic approach
	Discuss the rheumatoid hand	Senior	
	Discuss compression neuropathies	Senior	<ul style="list-style-type: none"> - Radial, ulnar, and median; low and high - Double crush injury

TEACHING AND LEARNING

Section	Topic	Level	Objectives
	Discuss the tendon transfer the upper extremity	Senior	<ul style="list-style-type: none"> - General principles of transfer o Radial N transfers (high and low) o Median N transfers (high and low) o Ulnar nerve transfers (high and low) o Combined nerve palsy o Concentrate on classical transfers
	Discuss compartment syndrome	Junior	<ul style="list-style-type: none"> - Definition, classification, clinical findings, etiology, and investigations - Treatment: acute and late - Volkmann's contracture treatment for various muscle groups
	Discuss common wrist disorders	Senior	<ul style="list-style-type: none"> - Radioulnar joint and triangular fibrocartilage complex (TFCC) - Scaphoid fractures (early, late, nonunion, etc.) - Kienbock disease
	Discuss stiff hand, arthrodesis, and arthroplasty	Senior	<ul style="list-style-type: none"> - Definition - Indications - Principles - Techniques (proximal interphalangeal [PIP], distal interphalangeal [DIP], metacarpophalangeal [MCP], interphalangeal [IP], and trapeziometacarpal joints) - Complications
SKIN	Describe the anatomy and physiology of skin	Junior	<ul style="list-style-type: none"> - Anatomical and histopathological description, including glands and epidermal appendages - Collagen types (include conditions of abnormal collagen synthesis: Ehlers-Danlos, progeria, and cutis laxa). - Describe the concept of angiosomes
	Describe the normal and abnormal healing of skin	Junior/ Senior	<ul style="list-style-type: none"> - Discuss various modifying factors that may alter this process. - Give a classification of cutaneous scars. (hypertrophic- , keloid, pigmentation problems, depressed scars, spread scars). - Describe the basic principles of the prevention and treatment of abnormal scars.
	Describe the healing of various types of grafts	Junior	<ul style="list-style-type: none"> - Skin (partial, full thickness, and composite) - Dermal, fat, cartilage, bone, and fascia grafts - Concentrate on the definition, physiology of healing, indications, and complications

TEACHING AND LEARNING

Section	Topic	Level	Objectives
	Discuss benign skin lesions and pre-malignant lesions of the skin; Look up chapter 73 in McCarthy	Junior	- Premalignant (leukoplakia, actinic keratosis, and nevus sebaceous)
	Discuss pigmented lesions	Junior	- Normal nevi and their classification (including potentially malignant lesions: dysplastic nevi, giant hairy nevi)
	Discuss basal cell and squamous cell carcinoma	Junior/ Senior	- Include Howen's disease and Erythroplasia of Queyrat - Definition, classification, management, and associated syndromes - Include the MORs technique
	Discuss malignant melanoma	Senior	- II In full detail
	Discuss dermatological conditions that relate to plastic surgery	Junior/ senior	- Include: toxic epidermal necrolysis (T E N), bulbous disease, Kaposi sarcoma, acne, tattoos, and xeroderma pigmentosum
	Discuss vascular lesions	Junior/ Senior	- Use Mulliken classification, classify as high flow or low flow lesions, and include syndromes - Definition, classification, clinical features, and management
CLEFT LIP AND PALATE	Discuss primary cleft lip palate	Senior	- Definition, embryology, etiology, classification, and epidemiology - Associated syndromes (including Pierre Robin)
	Discuss cleft lip palate	Senior	- Management o Medical: feeding and orthodontic issues; utilizing a multidisciplinary team o Surgical: lip adhesion, unilateral and bilateral cleft lip palate, and definitive treatment - Timing of surgery, complications, etc.

TEACHING AND LEARNING

Section	Topic	Level	Objectives
	Discuss velopharyngeal insufficiency (VPI) and cleft lip and palate complications	Senior	<ul style="list-style-type: none"> - Physiology of speech - Speech disorders - Management - Clinical assessment - Investigation - Treatment (non-operative and operative) - Complications of cleft lip palate
	Discuss cleft lip nose and the management of this deformity	Senior	<ul style="list-style-type: none"> - Embryology - Pathophysiology - Management
CRANIOFACIAL	Discuss le fort and maxillary fractures	Senior	<ul style="list-style-type: none"> - Anatomy - Pathophysiology (include a description of facial buttresses) - Management - Complications
	Discuss fractures of the zygoma, zygomatic arch, and orbit	Senior	- As above, and include enophthalmos
	Discuss fractures of the frontal sinus and nasoethmoidal-complex; include nasal fractures	Senior	<ul style="list-style-type: none"> - Anatomy - Pathophysiology - Management - Complications
	Discuss fractures of the mandible	Junior	
	Discuss pan facial fractures	Junior	<ul style="list-style-type: none"> - Definition - Airway management - Principles of fixation - Methods and theories of fixation

TEACHING AND LEARNING

Section	Topic	Level	Objectives
	Discuss teeth, occlusion, and principles of orthognathic surgery	Junior	<ul style="list-style-type: none"> - Anatomy and embryology of teeth; nomenclature and numbering - Facial proportions and subunits - Facial skeleton growth - Types of occlusion - Cephalometric studies: X-Ray film, planes, angles, and land marks - Cephalometric landmarks, vertical, angular, and horizontal analysis
	Discuss operative techniques of orthognathic surgery Surgical techniques: pre-op orthognathic planning, mandibular osteotomy	Senior	<ul style="list-style-type: none"> - Maxillary osteotomy - Indications - Complications and treatment - Steroid therapy - Advantages and disadvantages
	Discuss cranial synostosis, non-syndromic	Senior	<ul style="list-style-type: none"> - Embryology and anatomy - Pathophysiology - Deformational vs. synostotic skull shape deformities - Include definitions (trigonocephaly, scaphocephaly, plagiocephaly [anterior and posterior], turricephaly, brachycephaly, oxycephaly, and cloverleaf) - Exclude actual surgical treatment
	Discuss syndromic craniosynostosis	Senior	<ul style="list-style-type: none"> - Syndromic synostosis (Apert, Crouzon, Nager, Saethre-Chotzen, Pfeiffer, Carpenter, and Kleeblattschadel)
	Discuss management principles of craniosynostosis	Senior	<ul style="list-style-type: none"> - Treatment: include non-operative planning, timing, and osteotomies - Complications
	Discuss congenial facial clefts and hypertelorism	Senior	<ul style="list-style-type: none"> - Definition - Etiology - Pathophysiology - Classification (Tessier, van der Meulen's) - Treacher Collins; include hypertelorism - Management principles

TEACHING AND LEARNING

Section	Topic	Level	Objectives
	Discuss occulo-auriculo-vertebral sequence and Binder syndrome	Senior	<ul style="list-style-type: none"> - Definition - Classification - Principles of management - Include hemifacial microsomia, goldenhar syndrome, microphthalmia, etc.
	Distraction osteosynthesis and osteointegration	Senior	<ul style="list-style-type: none"> - Theories - Principles - Mechanism - Indications, surgical techniques - Advantages and disadvantages
	Discuss tumors and cysts of the mandible	Junior	<ul style="list-style-type: none"> - Definition - Classification - Treatment - Prognosis and complications
BREASTS	Discuss breast anatomy and embryology	Junior	<ul style="list-style-type: none"> - Embryology, blood, nerves, lymphatics, and surface anatomy
	Discuss the pathology and current concepts in the management of carcinoma of the female breast	Junior	<ul style="list-style-type: none"> - Pathological types (histopathology), including Paget disease and familial syndromes - TNM classification - Receptors and hormonal therapy - Modality of treatment (mastectomy, lumpectomy, radiotherapy, chemotherapy, and subcutaneous mastectomy) - Recurrence rate and management - Adjuvant and palliative therapy
	Discuss post mastectomy reconstruction	Senior	<ul style="list-style-type: none"> - Indications - Immediate vs. late - Autogenous vs. alloplastic - Autogenous: <ul style="list-style-type: none"> o Pedicled: ipsilateral vs. contralateral, simple vs. turbo o Free flaps: types o Compare pedicled vs. free flap (symmetry, complications, and adjuvant therapy,) o Combined autogenous and alloplastic o Inframammary fold reconstruction

TEACHING AND LEARNING

Section	Topic	Level	Objectives
	Discuss augmentation mammoplasty	Junior/ Senior	<ul style="list-style-type: none"> - Indication - Clinical evaluation - Types of implants - Position of implants - Surgical approach - Complications and their treatment - Informed consent
	Discuss gynecomastia and mastopexy	Junior/ Senior	<ul style="list-style-type: none"> - Causes - Classification - Indications <ul style="list-style-type: none"> o Surgical approaches - Complications and their treatment
	Discuss reduction mammoplasty	Senior	<ul style="list-style-type: none"> - Indications - Surgical approaches - Different pedicles - Different skin incisions <ul style="list-style-type: none"> o Advantages and disadvantages of each - Complications and their treatment
BURNS/ THERMAL INJURY	Discuss assessment and resuscitation of burns	Junior	<ul style="list-style-type: none"> - Total body surface area (TBSA) and depth <ul style="list-style-type: none"> o Medical history clinical exam o Criteria of referral to a burn unit o Fluids and electrolytes, resuscitation, and pathophysiology
	Discuss burn wound management and infection control	Junior	<ul style="list-style-type: none"> - Wound dressings (open vs. closed technique) <ul style="list-style-type: none"> o Types of excision and timing o Skin substitutes and biological dressings o Collagen grafts - Topical antimicrobial agents and skin preparations
	Discuss electrical and chemical burns	Junior	<ul style="list-style-type: none"> - Definition - Etiology - Classification - Management
	Discuss nutrition in the burn patient	Junior	
	Discuss burn immunology	Junior	<ul style="list-style-type: none"> - Normal and abnormal effects of burns - Modifying factors

TEACHING AND LEARNING

Section	Topic	Level	Objectives
	Discuss frostbite and cold injury, injection injuries, and heterotopic ossification	Junior	
	Discuss radiation and radiation injury. Discuss inhalation injury	Junior	
	Discuss the early and late management of the burned hand	Junior	
FLAPS	Discuss flaps under the following: (I) Classification; (II) Anatomy; (III) Physiology; (IV) Complications	Senior	<ul style="list-style-type: none"> - Circulation (macro and micro) - Classification (vascular supply, composition, and location); include sub-classification of muscle flaps and fasciocutaneous flaps - Vascularity and evaluation - Flap physiology - Flap delay - Survival factors (intrinsic, extrinsic, physical, and pharmacological) - Timing of flap division
	Discuss common local random flaps	Senior	<ul style="list-style-type: none"> - Rotation, limberg, rhomboid, bilobed, transposition, Romberg, etc. - Z-plasty, jumping man flap, 4-opposing Z-plasty, etc. - Describe the geometry of each flap with many diagrams

TEACHING AND LEARNING

Section	Topic	Level	Objectives
	Discuss free flaps	Senior	<ul style="list-style-type: none"> - Vessel injury and regeneration <ul style="list-style-type: none"> o Clotting mechanism o Tissue response to ischemia and hypoxia o No reflow effect - Technical factors (instruments and sutures, number of sutures, type of sutures, anastomosis techniques, end to end and end to side, cuff and conduit, stapling, laser anastomosis) - Perfusion monitoring - Tobacco and irradiation - Microvascular graft and prostheses - Classification - Indications - Physiological stages of healing (hemodynamic and vascular healing) - Time of ischemia and its management (cold vs. warm and their effect on the metabolism of the flap and cytokines) - Arterial and venous insufficiency and the algorithm of management - Effect of irradiation and an irradiated bed
	Discuss the anatomy of common axial flaps	Senior	<ul style="list-style-type: none"> - Fasciocutaneous <ul style="list-style-type: none"> o Deltopectoral, lateral arm, radial antegrade and reversed, groin flap, and Rubin's o Dorsalis pedis, sural artery, saphenous o Muscle and myocutaneous: Pectoralis, transverse rectus abdominis (TRAM), rectus gracilis, TFL gastrocnemius, soleus, Tibialis anterior, Latissimus - Osseous <ul style="list-style-type: none"> o Scapular, iliac, fibula
	Discuss tissue expansion	Junior	<ul style="list-style-type: none"> - History - Common sites - Tissue reaction - Indications - Complications and their treatment - Surgical techniques (placement, expanders [designs and advantages of each], and ports [types and placement]) - Advantages and disadvantages

TEACHING AND LEARNING

Section	Topic	Level	Objectives
	Discuss pressure ulcers in paraplegic patients, as it pertains to plastic surgery	Junior/ senior	<ul style="list-style-type: none"> - Pathophysiology - Locations - Treatment - Different dressings - Flap reconstruction (discuss flaps in detail for each site)
HEAD AND NECK	Discuss head and neck tumors	Senior	<ul style="list-style-type: none"> - Epidemiology, etiology, and risk factors - Leukoplakia - Oral cavity tumors - Neck dissection classification - Non-surgical treatment modalities
	Discuss reconstructive procedures and flaps in head and neck cancer	Senior	<ul style="list-style-type: none"> - Surgery (other than mandible surgery) - Local flaps - Axial flaps - Free flaps - Pharyngo-esophageal reconstruction
	Discuss salivary gland tumors	Junior	<ul style="list-style-type: none"> - Embryology - Etiology and risk factors - Minor salivary gland tumors and tumors of the palate - Classification - Staging, treatment, and complications
	Outline the basic principles in mandibular reconstruction	Senior	<ul style="list-style-type: none"> - Anatomy - Non-vascularized graft - Alloplastic - Vascularized bone - Indication of each modality - Advantages and disadvantages - Complications
	Discuss the management of facial nerve paralysis	Senior	<ul style="list-style-type: none"> - Anatomy - Embryology - Disorders (congenital, Bell's palsy, traumatic, and iatrogenic) - Principles of reconstruction

TEACHING AND LEARNING

Section	Topic	Level	Objectives
	Outline the embryology of the external ear and discuss correction of the common defects	Senior	<ul style="list-style-type: none"> - Congenital anomalies - Embryology - Anatomy - Classification (include Stahl's and cupped ear, bat ears, microtia, and anotia) - Treatment of each, including total ear reconstruction
	Discuss treatment of the burned ear. Outline the basic principles in the reconstruction of acquired defects	Senior	<ul style="list-style-type: none"> - Upper third - Middle third - Lower third - Total ear
	Discuss reconstruction of defects of the eyelid	Senior	<ul style="list-style-type: none"> - Anatomy - Classification - Reconstruction algorithm for each location
	Discuss entropion, ectropion, and ptosis of the eyelid	Senior	<ul style="list-style-type: none"> - Definition - Classification - Etiology - Management
	Discuss lip and cheek reconstruction	Senior	<ul style="list-style-type: none"> - Etiology - Anatomy - Classification - Management for each region (include local, regional, and free flap options)
	Discuss scalp reconstruction and management of baldness	Senior	<ul style="list-style-type: none"> - Anatomy - Classification - Management
	Discuss nasal reconstruction	Senior	<ul style="list-style-type: none"> - Anatomy - Physiology - Reconstruction of specific defects
COSMETIC SURGERY	Discuss the aging process of the face and rhytidectomy	Senior	
	Discuss blepharoplasty and brow lift	Senior	

TEACHING AND LEARNING

Section	Topic	Level	Objectives
	Discuss rhinoplasty	Senior	
	Discuss ancillary procedures in facial aesthetic surgery	Senior	<ul style="list-style-type: none"> - Chemical peel - Dermabrasion - LASER
	Discuss the management of excess fat, body sculpturing, and lipo-suction	Senior	
LOWER LIMB AND TRUNK	Discuss trunk, groin and perineum, abdomen, chest, and back reconstruction	Senior	<ul style="list-style-type: none"> - Anatomy of each region (skeleton support, muscles, fascia, vessels, and nerves) - Common lesions and defects - Algorithm of reconstruction and postoperative care - Advantages and disadvantages - Complications and treatment
	Discuss reconstruction of the lower limb after both tumor and trauma	Senior	<ul style="list-style-type: none"> - Embryology of the lower limb - Anatomy of the tibia and compartments - Weight bearing areas of the foot - Classification of trauma - Algorithm of reconstruction - Foot reconstruction - Complications and their treatment
	Discuss lymphoedema	Junior/ Senior	<ul style="list-style-type: none"> - Classification (congenital and acquired) - Syndromes - Treatment - Complications
	Discuss ulcers in the leg: pathophysiology and anatomy of each region	Junior/ Senior	<ul style="list-style-type: none"> - Algorithm of treatment (Nonsurgical and surgical) - Dressing - Complications and their treatment - Advantages and disadvantages
MISCELLANEOUS	Discuss the physiology of inflammation and edema and modifying factors	Junior	
	Discuss local anesthetic, adrenaline, steroids, and regional blocks	Junior	

TEACHING AND LEARNING

Section	Topic	Level	Objectives
	Discuss topical antimicrobial agents, dressing, and skin preparations.	Junior	
	Discuss the following: -Aspiration -Cardiac arrest -Bleeding -Neuroleptics	Junior	
	Discuss the use of alloplastic material in plastic surgery	Junior/ Senior	<ul style="list-style-type: none"> - History of alloplasty - Materials: absorbable, non-absorbable (medpore, silicon, sylastic, osteoapatite, Norian, collagen, hyaluronic acid, tee.) - Indications (skeleton augmentation, soft tissue augmentation, replacement, and coverage; cosmetic and reconstructive) - Body's reaction to alloplastic materials - Advantages and disadvantages - Complications and their treatment
	Discuss the healing of bone and cartilage: bone, cartilage, and perichondrial grafts	Junior/ Senior	<ul style="list-style-type: none"> - Histological anatomy of bone, cartilage, perichondrium, periosteum, and fascia - Basic science principles of healing for each - Indication of each - Resorption rate of each - Complications and their treatment - Advantages and disadvantages
	Discuss surgical infections	Junior	<ul style="list-style-type: none"> - Hyperhidrosis, hidradenitis suppurativa, necrotizing fasciitis, gangrene, Fournier gangrene, noma, and osteomyelitis - Hyperbaric oxygen

ASSESSMENT

Evaluations and assessments throughout the program are conducted in accordance with the Commission's training and examination rules and regulations. The process includes the following steps.

Annual assessment

This assessment is conducted toward the end of each training rotation throughout the academic year and at the end of each academic year as a continuous assessment in the form of a formative and summative evaluation and end of year written examination.

Formative Continuous Evaluation

To fulfill the CanMEDS competencies based on the end-of-rotation evaluation, the resident's performance will be jointly evaluated by relevant staff for the following competencies:

1. Performance of the trainee during daily work.
 2. Performance and participation in academic activities.
 3. Performance in a 10- to 20-min direct observational assessment of trainee–patient interactions. Trainers are encouraged to perform at least one assessment per clinical rotation, preferably near the end of the rotation. Trainers should provide timely and specific feedback to the trainee after each assessment of a trainee–patient encounter.
 4. Performance of diagnostic and therapeutic procedural skills by the trainee. Timely and specific feedback for the trainee after each procedure is mandatory.
 5. The CanMEDS-based competencies end-of-rotation evaluation form must be completed within 2 weeks after the end of each rotation (preferably in electronic format) and signed by at least two consultants. The program director will discuss the evaluation with the resident, as necessary. The evaluation form will be submitted to the Regional Training Supervisory Committee of the SCFHS within 4 weeks after the end of the rotation.
 6. The assessment tools used, can be in the form of an educational portfolio (i.e., monthly evaluation, rotational Mini-CEX^{*}, long case assessment CBDs, ^{**} DOPS, ^{***} and MSF^{****}).
 7. Academic and clinical assignments should be documented on an annual basis using the electronic logbook (when applicable). Evaluations will be based on accomplishment of the minimum requirements for the procedures and clinical skills, as determined by the program.
- ^{*}Clinical evaluation exercises
 - ^{**}Case-based discussions
 - ^{***}Direct observation of practical skills
 - ^{****}Multisource feedback

Summative Continuous Evaluation

This is a summative continuous evaluation report (Annual Report) prepared for each resident at the end of each academic year. The report may also involve the result of clinical examination, oral examination, objective structured clinical examination (OSCE), and international in training evaluation exam

End-of-Year Examination

The end-of-year examination will be limited to R1, R2, R3, R4 and R5 . The number of exam items, eligibility, and passing score will be in accordance with the Commission's training and examination rules and regulations. Examination details and blueprints are posted on the commission website: www.scfhs.org.sa

Part I Saudi Board Plastic Surgery Examination

This is a written examination conducted in multiple choice question formats, is held at least once a year. The examination will focus on applied anatomy, physiology, biochemistry, surgical pathology, immunology, pharmacology, and the principles of surgery. The number of exam items, eligibility, and passing score will be in accordance with the Commission's training and examination rules and regulations. Examination details and blueprints are published on the commission website: www.scfhs.org.sa

Final In-training Evaluation Report (FITER)/Comprehensive Competency Report (CCR)

In addition to approval of the completion of clinical requirements (resident's logbook) by the local supervising committee, FITER is also prepared by program directors for each resident at the end of his or her final year in residency (R6). This report may also involve clinical examinations, oral examinations, or other academic assignments.

Final Plastic Surgery Saudi Board Examination (Part II)

The final Saudi Board Examination comprises of two parts, a written examination and a clinical examination.

Written Examination

This examination assesses the trainee's theoretical knowledge base (including recent advances) and problem-solving capabilities with regard to the specialty of Plastic Surgery. It is delivered in multiple choice question formats and held at least once a year. The number of exam items, exam format, eligibility, and passing score will be in accordance with the Commission's training and examination rules and regulations. Examination details and blueprints are published on the commission website: www.scfhs.org.sa

Clinical / Oral Examination

This examination assesses a broad range of high-level clinical skills, including data collection, interpretation, diagnosis, patient management, communication, and counseling skills. The examination is held at least once a year, preferably in an OSCE format in the form of patient management problems (PMPs). The exam eligibility, format, and passing score will be in accordance with the Commission's training and examination rules and regulations. Examination details and blueprints are published on the commission website: www.scfhs.org.sa

Certification

Certificates of training completion will only be issued upon the resident's successful completion of all program requirements. Candidates passing all components of the final specialty examination are awarded the "Saudi Board in Plastic Surgery" certificate.

POLICIES AND PROCEDURES

SAUDI SPECIALTY CERTIFICATE OF PLASTIC SURGERY UPDATED POLICIES AND PROCEDURES)

Admission requirements

To be accepted into the training program, the candidate must fulfill the following requirements:

- 1) Obtain a Medical Degree (M.B.B.S.) or equivalent from a recognized university.
- 2) Successfully complete a rotating internship of 12 months.
- 3) Pass the Saudi Licensing Examination by the SCFHS.
- 4) Pass the plastic surgery selection examination and interview.
- 5) Provide a letter from a sponsoring organization approving the candidate to join full time training for the whole period of the program (6 years).
- 6) Provide their signature of obligation to abide by the rules and regulations of the training program and the Saudi Specialty Certificate of Plastic Surgery.
- 7) Register as a trainee at the Saudi Commission for Health Specialties.

Training requirements

- 1) Training is a full-time commitment. Residents shall be enrolled in continuous full time training for the whole period of the training program.
- 2) Training is to be conducted in institutions accredited for training by the Saudi Specialty Certificate of Plastic Surgery.
- 3) Training shall be comprehensive and include inpatient, ambulatory, and emergency room care.
- 4) Trainees shall be actively involved in patient care with a gradual progression of responsibility.
- 5) Trainees shall abide by the training regulations and obligations set by the Saudi Specialty Certificate of Plastic Surgery.

Structure of the training

This is a six year graduate program of structured training in plastic surgery, which includes a minimum of 2 years of residency training in general surgery core training rotations. The remaining years shall be allocated for rotations in various plastic surgery specialties.

The program is divided into three stages.

The rotations described below can be changed with approval of the local training committees and the scientific committee and or scientific board.

Junior Residency in general surgery training (R1,R2)

Duration: 24 months

- 1) Mandatory rotation
 - A minimum of (6) blocks in general surgery
 - A minimum of (3) blocks in critical care
 - A minimum of (3) blocks in emergency medicine
 - A minimum of (3) blocks in plastic surgery
 - A minimum of (3) blocks in orthopedic surgery

- 2) Elective rotations: The resident can choose three rotations, with no duplication of any of the following:
 - Two blocks vascular surgery
 - Two blocks pediatric surgery
 - Two blocks ENT, head and neck service
 - Two blocks oral surgery, in a facial trauma center
 - Two blocks dermatology

Applicants who successfully fulfill the above rotations and pass the requested exams will successfully advance to the 3rd year of plastic surgery residency. The board of surgery should promote the resident to become an R3.

Each year there is one block of annual vacation (4 weeks). This annual leave can be split into half blocks (2 weeks) with approval from the program director.

Junior Plastic Surgery Residency (R3, R4)

Duration: 2 years

Senior Plastic Surgery Residency (R5, R6)

Duration: 2 years

The candidates shall spend the last four years of training (R3, R4, R5, and R6) as a junior or senior resident in plastic surgery units where he/she shall be responsible for managing emergency and elective admissions, organizing educational activities, and supervising junior colleagues, according to level of training. Senior residents shall acquire gradual independency during this period of training. Refer to the previous description of responsibilities.

Responsibilities

Trainees shall be responsible for inpatient care in their unit, especially clerking and following the admitted patients, with completion of the patient's medical records, including complete history and physical examination, investigation requests and results, plan of management, postoperative orders and progress notes, discharge summary, and other relevant reports.

The trainees shall attend specialty surgical outpatient clinics at least once weekly and participate in the management plans of the surgical patients under the supervision of the senior staff member.

Trainees shall be required to attend and participate in the operative sessions conducted in the operating rooms and outpatient or day surgery units.

Trainees shall have a minimum on-call duty (24 hours duty) of one in every three nights. Trainees shall maintain healthy relationships with patients, their relatives, and medical, nursing, and administrative staff.

Trainees shall maintain the confidentiality and ethics of the profession.

Content of Training

Academic and clinical activities

Trainees are required to attend and participate in the academic and clinical activities of the department, such as ward rounds, journal clubs, surgical pathology, radiology and immunology, and other activities. Attendance and participation shall not be less than 80% of the number of activities within any training rotation/period.

Operative procedures and skills

Upon completion of the training program, the trainee should have performed, assisted, or attended essential surgical procedures, as determined by the local training committee.

Log Book: T-Res

The trainee shall be required to keep a log book (T-Res) wherein he/she shall record all of the activities and skills performed and learned during the training program.

The activities should be dated and categorized to the period/rotation of training, whether it has been performed by the trainee himself or as an assistant or participant.

Each activity registered in the logbook should be countersigned by the Program Director when deemed complete.

Content of the log book

- 1) Operative procedures and technical skills acquired during the training period.
- 2) Major invasive and non-invasive diagnostic monitoring procedures performed or learned.

Upon completion of the training program, the trainee should have gained sound and solid knowledge in the principles of surgery/plastic surgery and pathophysiology of surgical illnesses.

He or she should have gained enough clinical and technical experience to practice as a safe and competent plastic surgeon, especially in the management of emergency and urgent surgical matters.

He or she should be able to assess, evaluate, and diagnose plastic surgical problems and safely manage them.

Research activity

The trainee shall be encouraged to participate in research activity during the training program under the guidance and supervision of his trainers.

Each plastic surgery resident is expected to present one new research paper per year. This is mandatory for promotion.

There should be at least one publication of a research project before setting the final examination.

Residents' Rights

No abuse policy

- 1) Verbal and physical abuse are not tolerated by the Saudi Council and must be reported to the local program director in detail. Each incident should be dated and timed.
- 2) Discrimination against residents based on sex, race, color, religion, or regional background is not tolerated.

Calls

- 1) Residents will take calls only according to the SCFHS rules and regulations. The maximum number of in-hospital calls is 8 and home calls is 10. The head of the local committee has the option of setting a suitable minimum number of calls for each resident level.
- 2) Senior residents will take calls only under a consultant or a board certified plastic surgeon (Senior Registrar).
- 3) No junior or senior resident should cover a surgeon who carries less qualification than a senior registrar in plastic surgery even if there is a consultant on call.

Vacation/Holidays

- 1) Residents' vacation/holidays must be booked in the beginning of the year; the local program director has to be informed of the intention to take vacation several months in advance.
- 2) Program director/chief residents have the right to give priority to resident's requests.

Training centers

Training centers must:

- 1) Provide a good training environment
- 2) Give priority in surgical cutting to the residents enrolled in the SCFHS plastic surgery residency only: Competition with fellows and new graduates for surgical exposure is not tolerated

Private patients/Private centers

- 1) Residents are not allowed to work in private centers during their residency.
- 2) Working or practicing in private centers before becoming board certified may subject the resident to being relieved of residency according to the SCFHS rules and regulations.
- 3) Residents may be allowed to be trained in a private center if the center/trainer are accredited and approved by the head of the scientific committee and the head of the local committee

Private patients in training centers

- 1) Residents have the right to not operate/assist/round on any private patient except in emergency situations.
- 2) Residents are not allowed to assist in the care (operate/assist/round) of private cosmetic/body contouring patients. In rare cases, permission from the head of the local committee (program director) should be obtained on a case-by-case basis.
- 3) Residents have the option of assisting in reconstruction cases only. Permission from the head of the local committee (program director) should be obtained for each case.

Evaluation

End of rotation evaluation

At the end of a training rotation, the supervising consultant/team shall provide the training committee with a written evaluation of the resident's performance during that period/rotation. The evaluation will follow the CanMed scheme. Evaluation should be based on the opinion of the supervising consultant AND the local program director.

In-training examinations

The program shall incorporate annual written examinations as a part of the evaluation process of the residents, which includes either clinical or oral examinations. These exams are conducted by the training hospital as an optional internal policy.

End-of-year written examination

This will be conducted by the Plastic Surgery Exam Committee of the Saudi Commission for Health Specialties.

Annual overall evaluations

This is the summation of the end of rotation evaluations for the year and the end-of-year exam.

Promotion

- 1) Annual promotion (e.g., from R1 to R2) depends on the annual overall evaluation.
- 2) Promotion to Senior Residency depends on annual overall evaluations and passing the first part of the Saudi Specialty Certificate examination. Please refer to the general surgery board guide for R1 and R2 promotion rules.

APPENDICES

Evaluation forms

Medical Expert

Identification number:					
A rationale must be provided to support ratings with asterisks.	EXPECTATIONS				
	Rarely meets	Inconsistently meets	Generally meets	Sometimes exceeds	Consistently exceeds
Medical Expert					
a. Possesses the basic scientific and clinical knowledge relevant to plastic surgery					
b. Performs histories and physical examinations that are complete, accurate, and well organized					
c. Uses all of the pertinent information to arrive at complete and accurate clinical decisions					
d. Recognizes and manages emergency conditions resulting in prompt and appropriate treatment. Remains calm, acts in a timely manner, and prioritizes correctly					
e. Recognizes and appropriately manages patients with complex reconstructive problems and multi-system disease					
f. Demonstrates proficiency in preoperative and postoperative patient management, including indications for surgical intervention					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the specific objectives and give specific examples wherever possible.					

Procedures and clinical skills

Identification number:					
A rationale must be provided to support ratings with asterisks.	EXPECTATIONS				
	Rarely meets	Inconsistently meets	Generally meets	Sometimes exceeds	Consistently exceeds
Procedures and clinical skills					
Demonstrates the ability to perform diagnostic and therapeutic procedures described in the Medical Expert section of the Objectives of Training in Plastic Surgery					
Hand surgery Hand trauma surgery: including bone and tendon surgery Elective minor hand surgery: Carpal tunnel, ganglions, tumor Complex procedures: tendon transfers, staged tendon reconstruction, wrist surgery Major hand reconstruction with flaps, replantation					
Breast surgery Reduction/Augmentation/Mastopexy/Gynecomastia Alloplastic reconstruction Major reconstruction					
Burn surgery Minor debridement and grafting Major (burn unit patient) procedures Secondary burn reconstruction					
Head and neck/Craniofacial Pediatric cleft lip/palate/VPI surgery Trauma reconstruction Elective reconstruction with flaps					
Lower extremity reconstructive surgery					
Trunk and genitalia reconstructive surgery					
Skin and soft tissue procedures					
Cosmetic surgery					

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Microvascular surgery skills					
Minimizes risks and discomforts to the patient					
Overall is proficient in clinical and procedures skills					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the specific objectives and give specific examples wherever possible.					

Communicator

Identification number:					
A rationale must be provided to support ratings with asterisks.	EXPECTATIONS				
	Rarely meets	Inconsistently meets	Generally meets	Sometimes exceeds	Consistently exceeds
Communicator					
a. Establishes a therapeutic relationship with patients and communicates well with a family. Provides clear and thorough explanations of the diagnosis, investigation, and management in a professional manner. Demonstrates empathy and sensitivity to racial, gender, and cultural issues					
b. Prepares documentation that is accurate and timely					
c. Develops diagnostic and therapeutic plans that are understandable to patients and explained clearly and concisely to other health care personnel, including other consultants					
d. Presents clinical summaries and scientific information in a clear and concise manner to a health care audience					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the specific objectives and give specific examples wherever possible.					



Collaborator

Identification number:					
A rationale must be provided to support ratings with asterisks.	EXPECTATIONS				
	Rarely meets	Inconsistently meets	Generally meets	Sometimes exceeds	Consistently exceeds
Collaborator					
a. Interacts effectively with health professionals by recognizing and acknowledging their roles and expertise					
b. Consults and delegates effectively					
c. Establishes good relationships with peers and other health professionals					
d. Effectively provides information to and receives information from other health professionals					
e. Manages conflict situations well					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the specific objectives and give specific examples wherever possible.					

Manager

Identification number:					
A rationale must be provided to support ratings with asterisks.	EXPECTATIONS				
	Rarely meets	Inconsistently meets	Generally meets	Sometimes exceeds	Consistently exceeds
Manager					
a. Understands and makes effective use of information technology, such as methods for searching medical databases					
b. Makes cost effective use of health care resources based on sound judgement					
c. Prioritizes and uses personal and professional time effectively in order to achieve a balanced personal and professional life					
d. Demonstrates an understanding of the principles of practice management					
e. Demonstrates the ability to effectively utilize health care resources to maximize benefits to all patients, including managing waiting lists					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the specific objectives and give specific examples wherever possible.					

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Health advocate

Identification number:					
A rationale must be provided to support ratings with asterisks.	EXPECTATIONS				
	Rarely meets	Inconsistently meets	Generally meets	Sometimes exceeds	Consistently exceeds
Health advocate					
a. Understands the specialist’s responsibility to intervene on behalf of patients with respect to the social, economic, and biological factors that may impact their health					
b. Understands the specialist’s responsibility to intervene on behalf of the community with respect to the social, economic, and biological factors that may impact community health					
c. Recognizes and responds appropriately in advocacy situations					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the specific objectives and give specific examples wherever possible.					

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Scholar

Identification number:					
	EXPECTATIONS				
	Rarely meets	Inconsistently meets	Generally meets	Sometimes exceeds	Consistently exceeds
A rationale must be provided to support ratings with asterisks.					
Scholar					
a. Demonstrates an understanding of and a commitment to the need for continuous learning. Develops and implements an ongoing and effective personal learning strategy					
b. Critically appraises medical information by asking relevant questions and determining which information is reliable. Successfully integrates information from a variety of sources					
c. Understands the principles of adult learning and helps others learn by providing guidance, teaching, and giving constructive feedback					
d. Facilitates the education of patients, other house staff/students, and other health professionals					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the specific objectives and give specific examples wherever possible.					

Professional

Identification number:					
A rationale must be provided to support ratings with asterisks.	EXPECTATIONS				
	Rarely meets	Inconsistently meets	Generally meets	Sometimes exceeds	Consistently exceeds
Professional					
a. Demonstrates integrity, honesty, compassion, and respect for diversity					
b. Fulfills the medical, legal, and professional obligations of the specialist					
c. Meets deadlines and demonstrates punctuality					
d. Monitors patients and provides follow up					
e. Understands the principles of ethics and applies these in clinical situations					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the specific objectives and give specific examples wherever possible.					



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