Otolaryngology, Head and Neck Surgery Curriculum

2011
Preface

The Egyptian Fellowship Board and the otolaryngology scientific council worked collaboratively and closely to make this curriculum available for trainees’ guidance and support.

Postgraduate medical education world wide are now governed by sets of academic standards that describe the qualities and abilities of graduates. In addition, there are standards for the training processes, trainers’ selection and methods of assessment standards ensure transparency and clarify expectations.

The Egyptian fellowship board has already defined and published its standards for the general and professional competencies’ expected from our graduates in different specialties upon successful completion of training. These expectations are clearly reflected in the otolaryngology curriculum.

The curriculum describes what trainees will know and be able to do upon completion of training. In additions, methods of teaching and learning needed to deliver the curriculum are outlined. The curriculum also describes in details, expectations from trainees during their rotations in “The training rules and regulations section”. Methods of assessment and examination regulations are also available in the last section of the curriculum.

All topics covered during practical and theoretical studies are outlined. This will help trainees to guide their readings and their choice of learning activities. In addition, all required clinical cases and procedures are listed together with expected performance at various stages of training.

To help our trainers, supervisors and maximize benefits, we provided a guide for required lectures at various training stages. Mandatory courses are also mentioned and the Egyptian Fellowship Board will work closely with otolaryngology scientific council to ensure proper organization of courses at appropriate training stages. We hope that all our trainees, trainers and educational supervisors will follow the guides pro-vided in the curriculum and cooperate with The Egyptian Fellowship Board and Otolaryngology Scientific Council to implement the curriculum in the best ways.

Prof. Dr. Hany Mohammed Hafez
General Secretary
The High Committee of Medical Specialties
The Committees consulted international and regional curricula in otolaryngology. The external references for the development of this curriculum are:

1. The Otolaryngology curriculum approved by the Joint Committee on Surgery training and the PMETB in 2007


3. Postgraduate Medical Education and Training Board UK (Guidelines for curriculum development 2006)

4. Guidelines for curriculum development issued by the Egyptian Fellowship Board April, 2007
Acknowledgement

This curriculum has been created through collaboration between the Otolaryngology Scientific Council and The Egyptian Fellowship Curriculum Committee. The following members of the Otolaryngology Scientific Council have made substantial contribution to the curriculum development as subject matter experts

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The Egyptian Fellowship Curriculum Committee has made significant contribution to the curriculum through Collaboration with the council in the design and formulation of the educational structure. The member who participated in this work is

- **Prof Dr Eman AbdulRaoof**, Professor of Pediatric Hematology, Cairo University, Medical education expert and member of the Egyptian Fellowship curriculum committee
## 1. APPLIED BASIC SCIENCE CURRICULUM

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1.2. Physiology  
1.3. Audiology  
1.4. Oncology

## 2. PEDIATRIC OTOLARYNGOLOGY

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2.3. Acute otitis media in children.  
2.4. Chronic otitis media.  
2.5. Ear Trauma.  
2.6. Facial Paralysis.  
2.7. Deafness in childhood.  
2.8. Implantable hearing devices.  
2.10. Congenital nasal abnormalities.  
2.11. Nose and sinus infection.  
2.12. Non infectious conditions of the nose.  
2.13. Nasal trauma and deformity.  
2.15. Airway disorders in childhood.  
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2.18. Cervicofacial infections in children.  
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3. **HEAD AND NECK**

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3.2. Thyroid disease
3.3. Head and Neck Cancer
3.4. The Pharynx and oesophagus
3.5. Adenoidal and Tonsillar pathology
3.6. Pharyngeal Suppurations
3.7. The larynx
3.8. Airway Disorders
3.9. Voice disorders
3.10. Cervical Lymphadenopathy
3.11. Sleep Apnea

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4.3. Acute otitis media in adults.
4.4. Chronic otitis media.
4.5. Otosclerosis
4.8. Tinnitus
4.9. Implantable hearing devices
4.10. Facial paralysis
4.11. Ear trauma
4.12. Otalgia
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5.1. Congenital abnormalities
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5.3. Granulomatous conditions of the nose and sinuses
5.4. Mucocoeles.
5.5. Nasal polyposis.
5.6. Complications of rhinosinusitis.
5.7. Complications of endoscopic sinus surgery.
5.8. Diseases of the septum.
5.9. Foreign bodies.
5.10. Epistaxis.
5.11. Nose fracture and fractures of the facial skeleton.
5.13. Oroantral fistula.
5.15. Orbital and optic nerve decompression.
5.16. Facial pain and headache.
5.17. Nasal and paranasal sinus tumours.
5.18. Rhinoplasty.

6. SKULL BASE AND NEURO-OTOLOGY.
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6.3. Jugular Foramen Lesions
6.4. Petrous apex Lesions.
6.5. Tumors of the Temporal Bone.
7. MISCELLANEOUS TOPICS IN OTORHINOLARYNGOLOGY

7.1. Magnetic Resonance Imaging
7.2. Positron emission tomography (PET)
7.3. Image guided surgery and 3D planning
7.4. Laser principles in Otorhinolaryngology
7.5. Optical Coherence Tomography (OCT)
7.6. Contact Endoscopy
7.7. HIV and Otorhinolaryngology
1. APPLIED BASIC SCIENCE CURRICULUM
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1.1. Anatomy

OBJECTIVE

To understand the basic anatomy that surgeons will encounter during the management of both adult and child patients with diseases of the ears, nose and throat, and the embryological development of anatomical systems.

KNOWLEDGE (K1.1)

K1.1.1 Otological anatomy

K1.1.1.1 Outline otological anatomy of the outer, middle, inner ear, brain stem and central auditory pathways, vestibular system and its embryogenesis.

K1.1.1.2 Describe congenital anomalies of the outer, middle, inner ear.

K1.1.2 Respiratory tract and rhinological anatomy

K1.1.2.1 Rhinological anatomy and embryology

K1.1.2.1.1 Outline the anatomy and embryology of the upper and lower respiratory tract including the nose and paranasal sinuses and nasopharynx, trachea and bronchial tree.

K1.1.2.1.2 Outline the anatomy of the olfactory system and its central connections.

K1.1.2.2 List common anatomical variations of upper and lower respiratory tract and lungs.

K1.1.3 Head and neck

K1.1.3.1 Discuss embryogenesis and anatomy of the head and neck including oral cavity, pharynx (including pharyngeal lymphoid tissue), larynx, oesophagus and thyroid gland.

K1.1.3.2 List common anatomical variations of the head and neck including oropharynx, pharynx, larynx and oesophagus.

K1.1.3.3 Describe the surgical anatomy of the head and neck including oropharynx, pharynx, larynx and oesophagus and their important relations.
1.2. Physiology

OBJECTIVE
To understand the normal physiological processes at different ages. To understand the effects of disease and trauma on these processes.

KNOWLEDGE (K1.2)

K1.2.1 Upper aerodigestive tract
  K1.2.1.1 Describe palatal function
  K1.2.1.2 Describe the motility of pharynx and oesophagus
  K1.2.1.3 Describe the function of the lymphoid tissue in the head and neck
  K1.2.1.4 Outline salivary gland function
  K1.2.1.5 Discuss laryngeal function and phonation
  K1.2.1.6 Discuss the electrophysiology of taste sensation and smell

K1.2.2 The outer, middle and inner ear
  K1.2.2.1 Describe sound conduction and transduction
  K1.2.2.2 Outline the function of the cochlear nerve and its central connections; electrophysiology of hearing
  K1.2.2.3 Outline the function of the peripheral and central vestibular system

K1.2.3 The nose and olfactory system
  K1.2.3.1 Describe nasal airflow, mucociliary function, olfaction including their measurement
  K1.2.3.2 List the functions and role of the paranasal sinuses.

CLINICAL SKILLS (CS1.2)
  CS1.2.1 List methods of testing the vestibular system.

1.3. Audiology

OBJECTIVE
To understand the principles of sound and its measurement; to understand the principles of audiology.

KNOWLEDGE (K1.3)

K1.3.1 Physics of sound
  K1.3.1.1 Outline the physics of sound including its measurement
  K1.3.1.2 Outline basics of electrophysiological tests of hearing

CLINICAL SKILLS (CS1.3)
  CS1.3.1 Perform routine audiometric testing in adults and children
1.4. Oncology

**OBJECTIVE**

To understand pathological processes as they present in the common oncological pathologies.

**KNOWLEDGE (K1.4)**

- **K1.4.1** Demonstrate an understanding of cancer staging in relation to otorhinolaryngology
- **K1.4.2** List principles of chemo and radiotherapy in relation to Otorhinolaryngology
2. PEDIATRIC OTOLARYNGOLOGY
2. PEDIATRIC OTOLARYNGOLOGY

OBJECTIVE
To understand the etiology, presenting signs, symptoms and management of common pediatric ORL conditions. This module gives some indication of the breadth and depth of required knowledge and surgical skills. The list should not be considered to be fully inclusive or exhaustive.

2.1. Congenital Deformities of the Ear and Temporal Bone

KNOWLEDGE (K2.1)
K1.1.1 Outline otological anatomy of the outer, middle, inner ear, brain stem and central auditory pathways and its embryogenesis.
K2.1.1 Discuss etiology & presentation of congenital deformities of ear and temporal bone.
K2.1.2 Interpret radiological investigations of congenital deformities.
K2.1.3 Interpret audiological investigations of congenital deformities.
K2.1.4 Discuss methods of rehabilitation including bone conductor and bone anchored hearing aids; bone anchored prostheses.
K2.1.5 Understand methods for surgical correction of congenital abnormalities of the external and middle ear.

CLINICAL SKILLS (CS2.1)
CS2.1.1 Taking clinical history from patient’s carers.
CS2.1.2 Interpret radiological and audiological investigations.
CS2.1.3 Properly manage patients and refer appropriately to other agencies/ for other opinion including audiologists, genetics, and general pediatrics.

ATTITUDE (A2.1):
A2.1.1 Demonstrate communication skills and empathy, including team working and issues relating to pediatric practice.
A2.1.2 Advice the patient/parents or carers of the treatment options,
A2.1.3 Discuss risks and potential benefits, potential complications and obtain informed consent.

2.2. Disorders of the external ear

KNOWLEDGE (K2.2)
K2.2.1 Discuss types and microbiology of otitis externa.
K2.2.2 Describe the pathogenesis of disorders of the external ear.
K2.2.3 Discuss management of otitis externa in children.

CLINICAL SKILLS (CS2.2)
CS2.2.1 Elicit history taking, clinical examination.
**CS2.2.2.** Understand principles of patient management.
**CS2.2.3.** Aural microsuction and insertion of dressings.

**ATTITUDE (A2.2)**

**A2.2.1.** Demonstrate communication skills and empathy

**A2.2.2.** Advise the patient/parents or carers of the treatment options discuss risks and potential benefits, potential complications and obtain informed consent.

### 2.3. Acute otitis media in children.

**KNOWLEDGE (K2.3)**

**K2.3.1.** Outline the microbiology of middle ear infections, clinical picture and the complications of acute otitis media

**K2.3.2.** Plan for management of a child with acute otitis media and it is complications.

**K2.3.3.** Discuss pathology, clinical picture, complications and management of otitis media with effusion (glue ear).

**CLINICAL SKILLS (CS2.3)**

**CS2. 3.1** Take clinical history, elicit clinical signs

**CS2. 3.2** Understand principles of patient management

**ATTITUDE (A3):**

**A2.3.1.** Demonstrate communication skills and empathy

**A2.3.2.** Advise the patient of the treatment options,

**A2.3.3.** Discuss risks, potential benefits, and potential complications and obtain informed consent

### 2.4. Chronic otitis media.

**KNOWLEDGE (K2.4)**

**K2.4.1.** Describe the etiology and pathogenesis of chronic otitis media.

**K2.4.2.** Discuss management of chronic Otitis media in children.

**K2.4.3.** List complications of chronic otitis media, outline the importance of teamwork in managing critically ill patients

**K2.4.4.** Outline the microbiology of ear infections, clinical picture and the complications of chronic otitis media.

**K2.4.5.** Mention the principles of auditory rehabilitation.

**CLINICAL SKILLS (CS2.4)**

**CS2.4.1.** Assess patients, interpret relevant audiological, neurological, radiological and microscopic assessment tests and manage appropriately.

**ATTITUDE (A2.4):**

**A2.4.1.** Demonstrate communication skills and empathy
A2.4.2 Be able to break bad news
A2.4.3 Discuss risks, potential benefits, complications, treatment and obtain informed consent.

2.5. Ear Trauma

**KNOWLEDGE (K2.5)**

K2.5.1 Describe the effects of trauma on the pinna, ear canal, tympanic membrane, middle ear and temporal bone.
K2.5.2 Describe the effects of barotrauma on the middle and inner ear.
K2.5.3 Outline the surgical and non-surgical management of trauma of the external, middle and inner ear.

**CLINICAL SKILLS (CS2.5)**

CS2.5.1 Take clinical history and clinical signs.
CS2.5.2 Perform proper otoscopic examination.
CS2.5.3 Interpret audio vestibular tests.
CS2.5.4 Interpret relevant neuro-radiological investigations.
CS2.5.5 Outline the Principles of patient management.

**ATTITUDE (A2.5):**

A2.5.1 Demonstrate communication skills and empathy.
A2.5.2 Advise the patient/parents or carers of the treatment options.
A2.5.3 Discuss risks and potential benefits, potential complications and obtain informed consent.

2.6. Facial Paralysis

**KNOWLEDGE (K2.6)**

K2.6.1 Outline the anatomy and functions of the facial nerve.
K2.6.2 List the causes of facial paralysis in children.
K2.6.3 Outline the psychological effects of facial disfigurement.
K2.6.4 Describe the relevant clinical, neurological, vascular, radiological, biochemical, serological and electrophysiological investigations.
K2.6.5 Outline the principles of management and rehabilitation for facial paralysis.

**CLINICAL SKILLS (CS2.6)**

CS2.6.1 Assess patients with facial paralysis.
CS2.6.2 Interpret neurophysiological tests and radiological findings.
CS2.6.3 Plan for patient management.

**ATTITUDE (A2.6):**

A2.6.1 Demonstrate communication skills and empathy.
A2.6.2 Advise the patient/parents or carers of the treatment options.
A2.6.3 Discuss risks and potential benefits, potential complications and obtain informed consent.
2.7. Deafness in childhood.

KNOWLEDGE (K2.7)

K2.7.1 Describe the principles and practice of audiology including play audiometry, pure tone audiometry, speech audiometry and electrophysiological tests and other objective tests of hearing.
K2.7.2 Discuss the causes of sensorineural deafness in children.
K2.7.3 Outline the hereditary hearing impairment, autoimmune inner ear disease and ototoxicity.
K2.7.4 Discuss the causes of CHL.
K2.7.5 Outline non organic hearing loss.
K2.7.6 Outline principles of auditory rehabilitation including the use of hearing aids.
K2.7.7 Outline surgical options of auditory rehabilitation including BAHA and cochlear implant.

CLINICAL SKILLS (CS2.7)

CS2.7.1 Perform comprehensive and focused history taking and examination.
CS2.7.2 Plan Principles of patient management

ATTITUDE (A2.7):

A2.7.1 Demonstrate communication skills and empathy
A2.7.2 Discuss Potential complications and obtain informed consent
A2.7.3 Advise the patient of the treatment options, discuss risks and potential benefits.

2.8. Implantable hearing devices in children.

KNOWLEDGE (K2.8)

K1.1.1.2 Describe congenital anomalies of the outer, middle, inner ear.
K2.8.1 List the types of implants
K2.8.2 Discuss indications and contraindications including risks and complications
K2.8.3 Describe surgical approaches to the inner ear
K2.8.4 Describe principles of osseointegration.

CLINICAL SKILLS (CS2.8)

CS2.8.1 Take proper history and perform clinical examination.
CS2.8.2 Interpret radiological findings.
CS2.8.3 plan for patient management.
ATTITUDE (A2.8):
A2.8.1 Demonstrate communication skills and empathy.
A2.8.2 Advise the patient/parents or carers of the treatment options,
A2.8.3 Discuss risks, potential benefits and potential complications.
A2.8.4 Obtain informed consent
A2.8.5 Define the role of extended team working.

2.9. Vertigo in children

KNOWLEDGE (K2.9)
K1.1.1.1 Outline otological anatomy of the outer, middle, inner ear, brain
stem and central auditory pathways and its embryogenesis
K2.9.1 Describe maturation of vestibular system.
K2.9.2 Discuss assessment of dizzy child.
K2.9.3 Outline causes of childhood vestibular symptoms.
K2.9.4 Enumerate different types of ataxia.
K2.9.5 Discuss management of vertigo in children.

CLINICAL SKILLS (CS2.9)
CS2.9.1 Diagnose, and properly manage of dizzy child.

ATTITUDE (A2.9)
A2.9.1 Deal appropriately with a dizzy child.
A2.9.2 Discuss risks and potential benefits.

2.10. Congenital nasal abnormalities

KNOWLEDGE (K2.10)
K1.1.2.1.1 Outline the anatomy and embryology of the upper and lower
respiratory tract including the nose and paranasal sinuses and
nasopharynx, trachea and bronchial tree.
K2.10.1 Describe the pathology and clinical picture of congenital
deformities of the nose, paranasal sinuses and nasopharynx and
associations with other syndromes.
K2.10.2 Plan for management of congenital deformities of the nose,
paranasal sinuses and nasopharynx.

CLINICAL SKILLS (CS2.10)
CS2.10.1 Assess competently the nose and paranasal sinuses and plan
for the management.

ATTITUDE (A2.10)
A2.10.1 Communication skills, empathy, an understanding of team
working and issues relating to pediatric practice.
**A2.10.2.** Deal according to issues relating to patients with multiple handicaps.

### 2.11. Nose and sinus infection

**KNOWLEDGE (K2.11)**

- **K2.11.1** Discuss etiology and pathogenesis of sinus diseases in children.
- **K2.11.2** Describe microbiology.
- **K2.11.3** Discuss complications of acute and chronic rhinosinusitis.
- **K2.11.4** Discuss management of acute and chronic rhinosinusitis and its complications.

**CLINICAL SKILLS (CS2.11)**

- **CS2.11.1.** Assess child with sinusitis.
- **CS2.11.2.** Interpret radiological studies.
- **CS2.11.3.** Plan for management of acute and chronic rhinosinusitis.

**ATTITUDE (A2.11)**

- **A2.11.1.** Demonstrate communication skills, empathy, an understanding of team working and issues relating to practice.

### 2.12. Non infectious conditions of the nose

**KNOWLEDGE (K2.12)**

- **K2.12.1.** Mention mechanisms of allergic and non allergic rhinitis.
- **K2.12.2.** Plan medical and surgical management of non infectious inflammatory nasal disease and its complications.
- **K2.12.3.** Outline the role of cystic fibrosis in nasal polyp formation and complications of nasal polyps.

**CLINICAL SKILLS (CS2.12)**

- **CS2.12.1.** Assess the patient accurately.
- **CS2.12.2.** Diagnosis and management of different inflammatory conditions and sinonasal polyposis.
- **CS2.12.3.** Interpret different imaging studies.

**ATTITUDE (A2.12)**

- **A2.12.1.** Advise the patient of the treatment options and risks.

### 2.13. Nasal trauma and deformity

**KNOWLEDGE (K2.13)**

- **K2.13.1.** Outline different modes of nasal and facial trauma in children with the resultant deformities.
CLINICAL SKILLS (CS2.13)
CS2.13.1. Assess the patient accurately.
CS2.13.2. Interpret imaging studies.
CS2.13.3. Diagnose and properly manage nasal trauma and deformity.

ATTITUDE (A2.13)
A2.13.1. Advise the patient of the treatment options and risks.

2.14. Epistaxis

KNOWLEDGE (K2.14)
K2.14.1 Describe the blood supply to the nose
K2.14.2 List causes of epistaxis.
K2.14.3 Outline the etiology, pathogenesis of epistaxis.
K2.14.4 Describe medical and surgical management of epistaxis.

CLINICAL SKILLS (CS2.14)
CS2.14.1 Assess the patient accurately.
CS2.14.2 Interpret imaging studies.
CS2.14.3 Diagnose and properly manage epistaxis.

ALTITUDE (A2.14)

2.15. Airway disorders in childhood.

KNOWLEDGE (K2.15)
K1.1.2.1.1 Outline the anatomy and embryology of the upper and lower respiratory tract including the nose and paranasal sinuses and nasopharynx, trachea and bronchial tree.
K2.15.1 Discuss differential diagnosis of stridor in children and their management.
K2.15.2 Describe the nature and presenting features of obstructive sleep apnea in children.
K2.15.3 Describe embryology, anatomy, associated syndromes, pathology and management of cleft palate.
K2.15.4 Plan for management and complications of different airway disorders in children.

CLINICAL SKILLS (CS2.15)
CS2.15.1 Elicit history taking and examination with proper assessment of the patient.
CS2.15.2 Perform competently endoscopic assessment of the airway (rigid and flexible endoscopy)
**CS2.15.3** Investigate and formulate a differential diagnosis and a management plan.

**ATTITUDE (A2.15)**

**A2.15.1** Advise the patient and parents of the treatment options, discuss risks and potential benefits, potential complications and obtain informed consent

**A2.15.2** Work as a team with professional colleagues, in particular anesthetists, in a shared airway.

**A2.15.3** Deal according to the specific issues related to the management of children in hospital.

### 2.16. Neck Masses in Infants and Children.

**KNOWLEDGE (K2.16)**

**K1.1.3.1** Discuss embryogenesis and anatomy of the head and neck including oropharynx, pharynx (including pharyngeal lymphoid tissue), larynx, oesophagus and thyroid gland.

**K1.1.3.2** List common anatomical variations of the head and neck including oropharynx, pharynx, larynx and oesophagus

**K1.1.3.3** Describe the surgical anatomy of the head and neck including oropharynx, pharynx, larynx and oesophagus and their important relations

**K2.16.1** Outline pathogenesis, classification of neck masses.

**K2.16.2** Discuss principles of medical and surgical management of neck masses.

**CLINICAL SKILLS (CS2.16)**

**CS2.16.1** Assess the patient’s oral cavity, oropharynx and neck accurately including PNS and lower airway.

**CS2.16.2** Deduce a differential diagnosis and formulate a management plan.

**ATTITUDE (A2.16)**

**A2.16.1.** Advise the patient and parents of the treatment options.

**A2.16.2.** Discuss risks and potential benefits, potential complications and obtain informed consent.

**A2.16.3.** Deal according to the specific issues related to the management of children in hospital.

### 2.17. Tumors of the head & neck in children

**KNOWLEDGE (K2.17)**

**K2.17.1** Outline the pathology of benign and malignant tumors and their behaviors.
**Plan for management child with an enlarged cervical lymph node.**

**CLINICAL SKILLS (CS2.17)**
- **CS2.17.1** Assess the patient accurately.
- **CS2.17.2** Interpret imaging studies.
- **CS2.17.3** Diagnosis, and properly manage.

**ATTITUDE (A2.17)**
- **A2.17.1** Advise the patient of the treatment options and risks.

### 2.18. Cervicofacial infections in children

**KNOWLEDGE (K2.18)**
- **K2.18.1** Discuss embryogenesis and anatomy of the head and neck including oropharynx, pharynx (including pharyngeal lymphoid tissue), larynx, oesophagus and thyroid gland.
- **K2.18.2** Plan medical and surgical management of infections of the pharyngeal lymphoid tissue.
- **K2.18.3** Mention Complication of adenotonsillectomy.

**CLINICAL SKILLS (CS2.18)**
- **CS2.18.1** Assess the patient accurately.
- **CS2.18.2** Diagnose and properly manage cervicofacial infections in children.

**ATTITUDE (A2.18)**
- **A2.18.1** Advise the patient of the treatment options.
- **A2.18.2** Discuss risks and potential benefits.
- **A2.18.3** Discuss potential complications and obtain informed consent.

### 2.19. Foreign bodies in the ear, nose and aerodigestive tract

**KNOWLEDGE (K2.19)**
- **K2.19.1** Describe the types, clinical picture, management and complications of foreign bodies in the ear, nose and aerodigestive tract.

**CLINICAL SKILLS (CS2.19)**
- **CS2.15.2** Perform competently endoscopic assessment of the airway (rigid and flexible endoscopy)
- **CS2.19.1** Assess and manage patients with foreign bodies in the ear, nose and aerodigestive tract.
**CS2.19.2.** perform nasal endoscopy, hypopharyngoscopy, laryngoscopy, bronchoscopy and oesophagoscopy.

**ATTITUDE (A2.19)**

A2.19.1. Demonstrate communication skills and empathy
A2.19.2. Advise the patient/parents or carers of the treatment options, discuss risks and potential benefits, potential complications and obtain informed consent.

### 2.20. Gastro-oesophageal reflux and aspiration

**KNOWLEDGE (K2.20)**

K2.20.1 Describe pathophysiology of gastro-oesophageal reflux.
K2.20.2 Discuss clinical picture and otolaryngological manifestations of GERD.
K2.20.3 Outline diagnostic testing of GERD.
K2.20.4 Discuss management of GERD in children.
K2.20.5 Discuss causes and management of aspiration.

**CLINICAL SKILLS (CS2.20)**

CS2.20.1 Diagnose and properly manage aspiration in children.

**ATTITUDE (A2.20)**

A2.20.1 Advice the patient/parents or carers of the treatment options, discuss risks and potential benefits.

**Surgical skills in Pediatric ORL(SS)**

SS2.1. Perform independently microscopic or endoscopic assessment of the ear.
SS2.2. Perform independently drainage of auricular hematoma.
SS2.3. Perform independently Adenoidectomy and adenotonsillectomy.
SS2.4. Perform independently surgical ventilation of the ear.
SS2.5. Perform independently endoscopic assessment of the airway, intubation and FB removal.
SS2.6. Perform independently removal of F.B. from the pharynx and oesophagus.
SS2.7. Perform independently pediatric Tracheostomy.
SS2.8. Perform independently aural polypectomy,
SS2.8. Perform independently cortical mastoidectomy
SS2.10. Perform under supervision open cavity surgery.
SS2.11 Perform under supervision surgery for choanal atresia.
SS2.12. Perform independently but may need help excision of thyroglossal
SS2.13. Perform independently but may need help excision of branchial cyst.
3. HEAD AND NECK
3. HEAD AND NECK

OBJECTIVE
To understand the etiology, presenting signs, symptoms and management of common head and neck conditions. This module gives some indication of the breadth and depth of required knowledge and surgical skills. The list should not be considered to be fully inclusive or exhaustive.

3.1. Salivary gland disease

KNOWLEDGE (K3.1)
K3.1.1 Describe Anatomy, physiology and pathology of salivary gland disorders (Parotid, submandibular and minor salivary glands).
K3.1.2 Outline the epidemiology, classification, pathology and clinical picture of salivary gland disease including neoplasms.
K3.1.3 Plan the medical and surgical management of salivary gland disease, and the complications of surgery including neoplasms.

CLINICAL SKILLS (CS3.1)
CS3.1.1 Take clinical history and elicit clinical signs.
CS3.1.2 Examine the neck and mouth.

ATTITUDE (A3.1)
A3.1.1 Advise the patient of the treatment options.
A3.1.2 Discuss risks and potential benefits, potential complications and obtain informed consent.

3.2. Thyroid disease

KNOWLEDGE (K3.2)
K3.2.1 Describe physiology, biochemistry and anatomy of the thyroid gland and parathyroid.
K3.2.2 Outline the epidemiology, classification, pathology and clinical picture of thyroid disease including neoplasms.
K3.2.3 Discuss management of thyroid gland diseases including neoplasms and complications of thyroid surgery.

CLINICAL SKILLS (CS3.2)
CS3.2.1 Assess the patient’s condition (including metabolic state), investigate appropriately and plan for management.

ATTITUDE (A3.2)
A3.2.1 Advise the patient of the treatment options
A3.2.2 Discuss risks and potential benefits, potential complications and obtain informed consent.

3.3. Head and Neck Cancer

KNOWLEDGE (K3.3)
K1.1.3.3 Describe the surgical anatomy of the head and neck including oropharynx, pharynx, larynx and oesophagus and their important relations
K3.3.1 Outline epidemiology and classification of head and neck tumors.
K3.3.2 Discuss the various hypotheses and prognostic factors relating to the etiology of head and neck cancer
K3.3.3 Determine the presenting signs and symptoms of head and neck cancer
K3.3.4 Describe methods of disease spread
K3.3.5 Plan the medical and surgical management of head and neck cancer.
K3.3.6 Outline the functional consequences of head and neck disease, and its treatment.
K3.3.7 Mention complications of head and neck surgeries and their management.

CLINICAL SKILLS (CS3.3)
CS3.3.1 Assess competently, the patient’s condition and plan for management
CS3.3.2 Perform endoscopy of the upper aerodigestive tract in the outpatient department
CS3.3.3 Interpret imaging of head and neck cancer.

ATTITUDE (A3.3)
A3.3.1 Advise the patient of the treatment options.
A3.3.2 Discuss risks and potential benefits, potential complications and obtain informed consent.
A3.3 Break bad news, and to work as a member of a team.

3.4. The Pharynx and oesophagus

KNOWLEDGE (K3.4)
K1.1.3.1 Discuss embryogenesis and anatomy of the head and neck including oral cavity, pharynx (including pharyngeal lymphoid tissue), larynx, oesophagus and thyroid gland.

K1.1.3.2 List common anatomical variations of the head and neck including oropharynx, pharynx, larynx and oesophagus
**K1.1.3.3** Describe the surgical anatomy of the head and neck including oropharynx, pharynx, larynx and oesophagus and their important relations

**K1.2.1.2** Describe the motility of pharynx and oesophagus

**K3.4.1** Discuss diseases of the pharynx including neoplasms.

**K3.4.2** Outlines the inflammatory conditions of the pharynx with high lightening on the granulomas of the pharynx. (See also K2.18)

**K3.4.3** Classify different etiology of stomatitis and oropharyngeal ulcerations.

**K3.4.4** Discuss causes of dysphagia, management and intervention.

**K3.4.5** Describe Plummer vinson syndrome.

**K3.4.6** Describe pharyngeal pouch and it is management.

**K3.4.7** Discuss tumors of the oral cavity, pharynx (naso, oro, and hypopharynx) and oesophagus both benign and malignant and plan for their management.

**CLINICAL SKILLS (CS3.4)**

**CS3.4.1** Take clinical history and perform clinical examination.

**CS3.4.2** Examine the mouth, nose, nasopharynx, pharynx and larynx with endoscopes as required in outpatients, and under a general anaesthesia.

**CS3.4.3** Assess accurately the patient’s condition and manage appropriately under supervision.

**ATTITUDE (A3.4)**

**A3.4.1** Advise the patient of the treatment options,

**A3.4.2** Discuss risks and potential benefits, potential complications and obtain informed consent.

### 3.5. Adenoidal and Tonsillar pathology

**KNOWLEDGE (K3.5)**

**K1.1.3.1** Discuss embryogenesis and anatomy of the head and neck including oropharynx, pharynx (including pharyngeal lymphoid tissue), larynx, oesophagus and thyroid gland.

**K1.2.1.3** Describe the function of the lymphoid tissue in the head and neck

**K3.5.1** Mention the secondary effects of pharyngeal lymphoid hyperplasia.

**K3.5.2** Discuss pathogenesis, medical and surgical management of infections of the pharyngeal lymphoid tissue

**K3.5.3** Describe Differential Diagnosis and management of unilateral tonsillar swelling.

**CLINICAL SKILLS (CS3.5)**

**CS3.5.1** Assess accurately the patient’s condition.
**CS3.5.2** Diagnose and Manage patients conditions.

**ATTITUDE (A3.5)**

A3.5.1 Advise the patient of the treatment options,
A3.5.2 Discuss risks and potential benefits, potential complications and obtain informed consent.

**3.6. Pharyngeal Suppurations**

**KNOWLEDGE (K3.6)**

K3.6.1 Describe the anatomy of parapharyngeal spaces and fascias.
K3.6.2 Outline the clinical picture, investigations and Differential Diagnosis of pharyngeal suppurations including ludwig’s angina.
K3.6.3 Plan for medical and surgical management of pharyngeal suppurations.

**CLINICAL SKILLS (CS3.6)**

CS3.6.1 Assess accurately the patient’s condition and manage appropriately under supervision.
CS3.6.2 Know when to involve other specialties such as surgery, microbiology, pathology and infectious diseases.

**ATTITUDE (A3.6)**

A3.6.1 Advise the patient of the treatment options,
A3.6.2 Discuss risks and potential benefits, potential complications and obtain informed consent.

**3.7. The larynx**

**KNOWLEDGE (K3.7)**

K1.1.2.1.1 Outline the anatomy and embryology of the upper and lower respiratory tract including the nose and paranasal sinuses and nasopharynx , trachea and bronchial tree.
K1.1.3.1 Discuss embryogenesis and anatomy of the head and neck including oropharynx, pharynx (including pharyngeal lymphoid tissue), larynx, oesophagus and thyroid gland.
K1.1.3.2 List common anatomical variations of the head and neck including oropharynx, pharynx, larynx and oesophagus.
K1.1.3.3 Describe the surgical anatomy of the head and neck including oropharynx, pharynx, larynx and oesophagus and their important relations.
K3.7.1 Discuss acute infections , chronic laryngitis and other benign laryngeal lesions.
K3.7.2 Discuss laryngeal trauma, stenosis, paralysis and their management.
K3.7.3 Describe epidemiology, pathology, clinical picture, management of tumours of the larynx (benign and malignant) (See also K3.3)
K3.7.4 Discuss complications of management of laryngeal tumors and mention different modalities of voice rehabilitation after total laryngectomy.

CLINICAL SKILLS (CS3.7)
CS3.7.1 Take clinical history and elicit clinical signs in potential laryngeal symptoms.
CS3.7.2 Assess the patients with laryngeal carcinoma and select proper line for management.
CS3.7.3 Perform competently endoscopic assessment and staging of laryngeal carcinoma.

ATTITUDE (A3.7)
A3.7.1 Advise the patient of the treatment options
A3.7.2 Work with anesthetists in the "shared airway"
A3.7.3 Discuss risks and potential benefits, potential complications and obtain informed consent.

3.8. Airway Disorders

KNOWLEDGE (K3.8)
K3.8.1 Classify airway disorders.
K3.8.2 Outline the principles of the medical, surgical management including tracheostomy and their complications.
K3.8.3 Plan for management of a patient with neck trauma.
K3.8.4 Describe causes and Plan Management of aspiration.

CLINICAL SKILLS (CS3.8)
CS3.8.1 Take clinical history and elicit clinical signs in potential laryngeal symptoms.
CS3.8.2 Assess the patients with critical airways.
CS3.8.3 Perform competently endoscopic assessment of the airway, intubation.

ATTITUDE (A3.8)
A3.8.1 Advise the patient of the treatment options
A3.8.2 Work with anesthetists in the "shared airway"
A3.8.3 Discuss risks and potential benefits, potential complications and obtain informed consent.
### 3.9. Voice disorders

**KNOWLEDGE (K3.9)**

- **K3.9.1** Outline the classification of dysphonias.
- **K3.9.2** Discuss the various hypotheses relating to the etiology of dysphonias.
- **K3.9.3** Plan the medical and surgical management of dysphonias.

**CLINICAL SKILLS (CS3.9)**

- **CS3.9.1** Take clinical history and elicit clinical signs in patients with voice disorders.
- **CS3.9.2** Perform endoscopic assessment.
- **CS3.9.3** Enhance communication skills with other professionals.

**ATTITUDE (A3.9)**

- **A3.9.1** Advise the patient of the treatment options.
- **A3.9.2** Discuss risks and potential benefits, potential complications and obtain informed consent.

### 3.10. Cervical Lymphadenopathy

**KNOWLEDGE (K3.10)**

- **K1.1.3.1** Discuss embryogenesis and anatomy of the head and neck including oropharynx, pharynx (including pharyngeal lymphoid tissue), larynx, oesophagus and thyroid gland.
- **K1.2.1.3** Describe the function of the lymphoid tissue in the head and neck.
- **K3.10.1** Discuss the etiology, pathology, presenting signs and symptoms of cervical lymphadenopathy.
- **K3.10.2** Discuss Occult primary and management.
- **K3.10.3** Discuss Differential Diagnosis and management of a patient presented with a neck mass.
- **K3.10.4** Interpret imaging of the neck.

**CLINICAL SKILLS (CS3.10)**

- **CS3.10.1** Take clinical history and elicit clinical signs.
- **CS3.10.2** Examine the mouth, nose, nasopharynx, pharynx, larynx and oesophagus with endoscopes as required in outpatients, and under a general anaesthetic. (See also CS3.4.2, CS3.8.3)

**ATTITUDE (A3.10)**
A3.10.1 Advice the patient of the treatment options,
A3.10.2 Discuss risks and potential benefits, potential complications and obtain informed consent.

3.11. Sleep Apnea

Knowledge (K3.11)

K3.11.1 Discuss etiology, presenting signs and symptoms in adults
K3.11.2 Discuss complications of sleep apnea disorder.
K3.11.3 Discuss different lines for management of sleep apnea and mention their complications.

Clinical Skills (CS3.11)

CS3.11.1 Assess accurately the patient’s condition and plan for management.
CS3.11.2 Examine the upper aerodigestive tract with endoscopes in the outpatient department. (See also CS3.4.2, CS3.8.3, CS3.10.2)

Attitude (A3.11)

A3.11.1 Advise the patient of the treatment options,
A3.11.2 Discuss risks and potential benefits, potential complications and obtain informed consent.
Surgical skills in H&N surgery (SS)

**SS3.1.** Perform independently adenotonsillectomy.

**SS3.2.** Perform independently drainage of peritonsillar abscess.

**SS3.3.** Perform independently management of post-tonsillectomy bleeding.

**SS3.4.** Perform independently endoscopic assessment of the airway, intubation, F.B removal.

**SS3.5.** Perform independently Tracheostomy.

**SS3.6.** Perform independently endoscopic assessment of head and neck cancer under a general anesthesia

**SS3.7.** Perform independently lymph node excision.

**SS3.8.** Perform independently Laryngeal endoscopic surgery

**SS3.9.** Perform independently endoscopic assessment of dysphonia.

**SS3.10.** Perform independently removal of F.B. from the pharynx and oesophagus.

**SS3.11.** Perform independently endoscopic examination of the nose, nasopharynx, pharynx and larynx under general anaesthesia.

**SS3.12.** Perform independently surgical excision of Ranula.(if available).

**SS3.13.** Perform independently but may need help uvulopalatopharyngoplasty.

**SS3.14.** Perform independently but may need help laser assisted uveoloplasty.

**SS3.15.** Perform independently but may need help excision of neck cyst, thyroglossal and branchial cysts and fistulae.

**SS3.16.** Perform independently but may need help drainage of superficial and deep neck space infections.

**SS3.17.** Perform independently but may need help submandibular gland excision.

**SS3.18.** Assist in medialization procedures in voice disorders.

**SS3.19.** Assist in fine needle aspiration cytology.

**SS3.20.** Assist in thyroid surgery.

**SS3.21.** Assist in laryngectomy, neck dissection surgery and voice prosthesis placement.

**SS3.22.** Assist in intra oral parotid and submandibular duct stone excision.

**SS3.23.** Assist in superficial parotidectomy.

**SS3.24.** Assist in total conservative parotidectomy.

**SS3.25.** Observe endoscopic laser surgery.

**SS3.26.** Observe facial nerve grafting.

**SS3.27.** Observe facial-hypoglossal anastomosis.

**SS3.28.** Observe endoscopic and open pharyngeal pouch surgery.
4. OTOLOGY
To understand the etiology, presenting signs, symptoms and management of common ORL conditions. This module gives some indication of the breadth and depth of required knowledge, clinical and surgical skills. The list should not be considered to be fully inclusive or exhaustive.

4.1 Congenital Deformities of The Ear And Temporal Bone

**K4.1.1** Outline otological anatomy of the outer, middle, inner ear, brain stem and central auditory pathways and its embryogenesis.

**K4.1.2** Describe congenital anomalies of the outer, middle, inner ear.

**K4.1.3** Interpret radiological investigations of congenital deformities. (See also K2.1.2)

**K4.1.4** Interpret audiological investigations of congenital deformities. (See also K2.1.3)

**K4.1.5** Discuss methods of rehabilitation including bone conductor and bone anchored hearing aids; bone anchored prostheses. (See also K2.1.4)

**K4.1.6** Plan surgical correction of congenital abnormalities of the external and middle ear (See also K2.1.5)

**CLINICAL SKILLS (CS4.1)**

**CS4.1.1** Take clinical history from patients with congenital deformities of the ear.

**CS4.1.2** Interpret radiological and audiological investigations.

**CS4.1.3** Plan for patient management and refer appropriately to other agencies/for other opinion.

**ATTITUDE (A4.1):**

**A4.1.1** Demonstrate communication skills and empathy, including team working and issues relating to pediatric practice.

**A4.1.2** Advise the patient/parents or carers of the treatment options,

**A4.1.3** Discuss risks and potential benefits, potential complications and obtain informed consent.

**A4.1.4** Deal with issues related to patients with multiple handicaps and refers to psychological assessment if needed.
4.2. Disorders of pinna and the external auditory canal.

**KNOWLEDGE (K4.2)**

- **K1.1.1.1** Outline otological anatomy of the outer, middle, inner ear, brain stem and central auditory pathways and its embryogenesis.
- **K1.1.1.2** Describe congenital anomalies of the outer, middle, inner ear.
- **K1.2.2.1** Describe sound conduction and transduction.
- **K4.2.1** Outline the pathogenesis and microbiology of disorders of the external ear especially necrotizing otitis externa.
- **K4.2.2** Discuss management of different disorders affecting the external auditory canal.

**CLINICAL SKILLS (CS4.2)**

- **CS4.2.1** Take clinical history and elicit clinical signs.
- **CS4.2.2** Interpret audio vestibular tests (See also K1.3.1.1, K1.3.1.2)
- **CS4.2.3** Plan for patient management.

**ATTITUDE (A4.2):**

- **A4.2.1** Demonstrate communication skills and empathy.
- **A4.2.2** Advise the patient of the treatment options.
- **A4.2.3** Discuss potential complications, risks, potential benefits and obtain informed consent.

4.3. Acute otitis media in adults.

**KNOWLEDGE (K4.3)**

- **K1.1.1.1** Outline otological anatomy of the outer, middle, inner ear, brain stem and central auditory pathways and its embryogenesis.
- **K4.3.1** Describe pathology of acute otitis media in adults.
- **K4.3.2** Outline the microbiology of ear infections. (See also K2.3.1)
- **K4.3.3** Describe clinical picture, complications and management of acute otitis media in adults.

**CLINICAL SKILLS (CS4.3)**

- **CS4.3.1** Take clinical history, elicit clinical signs and provide appropriate medical treatment and perform micro suction when indicated.
- **CS4.3.2** Interpret otoscopic appearance.
- **CS4.3.3** Plan for patient management.

**ATTITUDE (A4.3):**

- **A4.3.1** Demonstrate communication skills and empathy.
- **A4.3.2** Advise the patient of the treatment options.
A4.3.3 Discuss risks, potential benefits, potential complications and obtain informed consent.

4.4. Chronic otitis media in adults.

**KNOWLEDGE (K4.4)**

K4.4.1 Describe the etiology and pathogenesis and Differential Diagnosis of chronic otitis media in adults.
K4.4.2 List complications of chronic otitis media and outline the importance of teamwork in managing critically ill patients
K4.4.3 Discuss management of chronic otitis media and mention surgical complications.
K4.4.4 Mention the principles of auditory rehabilitation.

**CLINICAL SKILLS (CS4.4)**

CS4.4.1 Assess patients, interpret relevant audiological, neuroradiological and microscopic assessment tests and manage appropriately.
CS4.4.2 Plan for patient management and outline complications of chronic otitis media.

**ATTITUDE (A4.4):**

A4.4.1 Demonstrate communication skills and empathy
A4.4.2 Break bad news
A4.4.3 Advise the patient of the treatment options
A4.4.4 Discuss risks and potential benefits, potential complications and obtain informed consent.

4.5. Otosclerosis

**KNOWLEDGE (K4.5)**

K4.5.1 Describe the etiology, genetics and pathophysiology of otosclerosis.
K4.5.2 Discuss management of otosclerosis and complications of different lines of management.
K4.5.3 Outline Differential Diagnosis of conductive hearing loss behind an intact drum.

**CLINICAL SKILLS (CS4.5)**

CS4.5.1 Take clinical history and clinical signs.
CS4.5.2 List appropriate investigations.
CS4.5.3 Plan for patient management.
ATTITUDE (A4.5):

A4.5.1 Demonstrate communication skills and empathy
A4.5.2 Advise the patient of the treatment options
A4.5.3 Discuss risks, potential benefits, potential complications and obtain informed consent.


KNOWLEDGE (K4.6)

K1.1.1.1 Outline otological anatomy of the outer, middle, inner ear, brain stem and central auditory pathways and its embryogenesis.
K1.2.2.3 Outline the function of the peripheral and central vestibular system
K4.6.1 Outline the pathology and various hypotheses relating to the etiology.
K4.6.2 Discuss Differential Diagnosis of balance disorders.
K4.6.3 Describe the neuro-radiological imaging of the inner ear and central vestibular pathways as well as the relevant clinical picture, neurological, vascular, radiological, biochemical, immunological and serological investigations and their management.
K4.6.4 Outline the relationship of balance disorders to legislation relating to employment and driving.
K4.6.5 Describe the principles of vestibular rehabilitation
K4.6.6 Describe the handicaps related to sensory and proprioceptive degeneration associated with age.

CLINICAL SKILLS (CS4.6)

CS4.6.1 Assess accurately the patient’s condition including electro physiological testing and clinical examination (See also CS1.2.1)
CS4.6.2 Take clinical history and elicit clinical signs.
CS4.6.3 Plan for patient management.

ATTITUDE (A4.6):

A4.6.1 Demonstrate communication skills and empathy
A4.6.2 Advise the patient of the treatment options.
A4.6.3 Discuss risks and potential benefits, potential complications and obtain informed consent.


KNOWLEDGE (K4.7)

K4.7.1 Describe the principles and practice of audiology including pure tone audiometry, speech audiometry, electrophysiological tests and other objective tests of hearing. (See also CS1.3.1, K1.3.1.2, K1.3.1.3)
K4.7.2 Discuss the causes of sensorineural deafness.  (See also K2.7.2)
K4.7.3 Outline the hereditary hearing impairment, autoimmune inner ear disease and ototoxicity.  (See also K2.7.3)
K4.7.4 Discuss the causes of CHL  (See also K2.7.3)
K4.7.5 Outline non organic hearing loss in adults.
K4.7.6 Outline surgical and non surgical options of auditory rehabilitation in adults.
K4.7.7 Outline the principles of auditory rehabilitation including the use of hearing aids and other assistive devices adults.

CLINICAL SKILLS (CS4.7)
CS4.7.1 Perform comprehensive and focused history taking and examination.
CS4.7.2 Plan for patient management.

ATTITUDE (A4.7):
A4.7.1 Demonstrate communication skills and empathy
A4.7.2 Advise the patient of the treatment options, discuss risks and potential benefits,
A4.7.3 Discuss Potential complications and obtain informed consent.

4.8. Tinnitus

KNOWLEDGE (K4.8)
K4.8.1 Describe the etiology, clinical presentation and the psychological effects of tinnitus,
K4.8.2 Outline the principles of tinnitus retraining, rehabilitation, support and counseling
K4.8.3 Outline the principles and practice of audiology including pure tone audiometry, speech audiometry and electrophysiological tests and other objective tests of hearing including otoacoustic emissions and psychoacoustical tests.  (See also K4.7.6)

CLINICAL SKILLS (CS4.8)
CS4. 8.1 Assess patients with tinnitus, interpret audiological tests and radiological findings
CS4. 8.2 Plan for patient management

ATTITUDE (A4.8):
A4.8.1 Demonstrate communication skills and empathy.
A4.8.2 Advise the patient of the treatment options.
A4.8.3 Discuss risks and potential benefits.

**KNOWLEDGE (K4.9)**

K1.1.1 Outline otological anatomy of the outer, middle, inner ear, brain stem and central auditory pathways, vestibular system and its embryogenesis.

K1.1.2 Describe congenital anomalies of the outer, middle and inner ear.

K4.9.1 List the types of implants.  
(See also K2.8.1)

K4.9.2 Discuss indications and contraindications including risks and complications.  
(See also K2.8.2)

K4.9.3 Describe surgical approaches to the inner ear.  
(See also K2.8.1)

K4.9.4 Describe principles of osseointegration.  
(See also K2.8.1)

K4.9.5 Explain speech-processing strategies.

**CLINICAL SKILLS (CS4.9)**

CS4.9.1 Take proper history and perform clinical examination.

CS4.9.2 Interpret radiological findings.

CS4.9.3 Plan for patient management.

**ATTITUDE (A4.9):**

A4.9.1 Demonstrate communication skills and empathy.

A4.9.2 Advise the patient/parents or carers of the treatment options.

A4.9.3 Discuss risks, potential benefits and potential complications.

A4.9.4 Obtain informed consent.

A4.9.5 Define the role of extended team working.

(See also K2.6)

**KNOWLEDGE (K4.10)**

K4.10.1 Outline the anatomy, physiology and functions of facial nerve.

K4.10.2 List the causes and types of facial paralysis in adults.

K4.10.3 Outline the psychological effects of facial disfigurement in adults.

K4.10.4 Describe the relevant clinical picture, neurological, vascular, radiological, biochemical, serological and electrophysiological investigations in adults.

K4.10.5 Outline the principles of management and rehabilitation for facial paralysis in adults.
## CLINICAL SKILLS (CS4.10)

**CS4. 10.1** Assess patients with facial paralysis in adults.
**CS4. 10.2** Interpret neurophysiological tests and radiological findings in adults.
**CS4. 10.3** Plan for patient management.

### ATTITUDE (A4.10):

**A4.10.1** Demonstrate communication skills and empathy
**A4.10.2** Advise the patient of the treatment options
**A4.10.3** Discuss risks, potential benefits, potential complications and obtain informed consent.

### 4.11. Ear trauma

### KNOWLEDGE (K4.11)

**K4.11.1** Describe the effects of trauma on the pinna, ear canal, tympanic membrane, middle ear, inner ear and temporal bone,
**K4.11.2** Describe the effects of barotrauma on the middle and inner ear.
**K4.11.3** Outline the surgical and non-surgical management of trauma of the external, middle and inner ear.

### CLINICAL SKILLS (CS4.11)

**CS4. 11.1** Take clinical history and elicit clinical signs.
**CS4. 11.2** Perform proper otoscopic & microscopic examination.
**CS4. 11.3** Interpret neurophysiological tests and radiological findings.
**CS4. 11.4** Plan for patient management.

### ATTITUDE (A4.11)

**A4.11.1** Demonstrate communication skills and empathy
**A4.11.2** Advise the patient/parents or carers of the treatment options
**A4.11.3** Discuss risks and potential benefits, potential complications and obtain informed consent.


### KNOWLEDGE (K4.12)

**K4.12.1** Outline neurophysiology of pain.
**K4.12.2** Discuss neuroanatomy of pain.
**K4.12.3** List causes of otalgia and their management.
**K4.12.4** Discuss stylohyoid syndrome investigation and management.
**K4.12.5** Discuss principles of patient management presented by otalgia.

**CLINICAL SKILLS (CS4.12)**

**CS4. 12.1** Take clinical history.
**CS4. 12.2** Elicit clinical signs.
**CS4. 12.3** Interpret relevant neuro-radiological investigations.
**CS4. 12.4** Examine TMJ, oral cavity including dental examinations with careful evaluation of upper aerodigestive tract.
**CS4. 12.5** Plan for patient management.

**ATTITUDE (A4.12)**

**A4.12.1** Demonstrate communication skills and empathy
**A4.12.2** Discuss with the patient/parents or carers of the treatment options.
**A4.12.3** Discuss risks and potential benefits, potential complications and obtain informed consent.
**A4.12.4** Refer appropriately to other specialties when needed.

**SURGICAL SKILLS IN OTOLOGY (SS)**

**SS4.1.** Perform independently microscopic assessment of the ear
**SS4.2.** Perform independently drainage auricular hematomas
**SS4.3.** Perform independently aural polypectomy
**SS4.4.** Perform independently aural micro suction and insertion of dressings
**SS4.5.** Observe correction of bat ears surgery (if available)
**SS4.6.** Perform independently myringotomy, micro suction and insertion of grommets
**SS4.7.** Perform independently myringoplasty
**SS4.8.** Perform independently cortical mastoidectomy
**SS4.9.** Perform independently tympanoplasty
**SS4.10.** Perform with assistance (if needed) open cavity surgery
**SS4.11.** Observe some ossiculoplasty procedures (if available)
**SS4.12.** Perform under supervision stapedectomy procedure
SS4.13. Observe fixation of Bone anchored hearing aids (BAHA) and Bone anchored prosthesis (if available)

SS4.14. Observe cochlear implantation procedures (if available)

SS4.15. Observe surgical interventions for vertigo

SS4.16. Perform re-positioning maneuvers.
5. RHINOLOGY.
5. RHINOLOGY

OBJECTIVE
To understand the etiology, presenting signs, symptoms and management of common rhinological conditions. This module gives some indication of the breadth and depth of required knowledge and surgical skills. The list should not be considered to be fully inclusive or exhaustive.

5.1. Congenital abnormalities

KNOWLEDGE (K5.1)
K1.1.2.1.1 Outline the anatomy and embryology of the upper and lower respiratory tract including the nose and paranasal sinuses and nasopharynx, trachea and bronchial tree.
K1.1.2.2 List common anatomical variations of upper and lower respiratory tract and lungs
K5.1.1 Describe etiology and clinical picture of congenital deformities of the nose and paranasal sinuses.
K5.1.2 List associated other syndromes.

CLINICAL SKILLS (CS5.1)
CS5.1.1 Assess competently the patient.
CS5.1.2 Outline the plan for the management.

ATTITUDE (A5.1):
A5.1.1 Demonstrate communication skills and empathy, including team working and issues relating to pediatric practice.
A5.1.2 Deal according to the issues relating to patients with multiple handicaps and psychological assessment.

5.2. Rhinosinusitis

KNOWLEDGE (K5.2)
K5.2.1 Discuss the pathology and management of intermittent and persistent allergic rhinosinusitis.
K5.2.2 Discuss classification, pathology and management of infectious rhinosinusitis.
K5.2.3 Outline different types of non allergic, non infectious inflammatory conditions of the nose and sinuses.

CLINICAL SKILLS (CS5.2)
CS5.2.1 Assess the patient accurately
CS5.2.2 Perform speculum and endoscopic examination,
CS5.2.3 Interpret haematological and imaging studies.
CS5. 2.4 Properly manage nose and sinus infections.

ATTITUDE (A5.2):

A5.2.1 Advise the patient of the treatment options and risks.
A5.2.2 Demonstrate communication skills and empathy, including team working and issues relating to practice.

5.3. Granulomatous conditions of the nose and sinuses

KNOWLEDGE (K5.3)

K5.3.1 Define granuloma and list the different types nasal granulomas.
K5.3.2 Discuss management of infective granulomatous conditions of the nose and sinuses (bacterial, fungal and protozoal).
K5.3.3 Discuss pathology and management of inflammatory granulomas (Wegener’s, sarcoidosis, Churg-Struss syndrome, cholesterol granulomas and eosinophilic granulomas).
K5.3.4 Discuss pathology and management of neoplastic granulomas.

CLINICAL SKILLS (CS5.3).

CS5. 3.1 Assess the patient accurately.
CS5. 3.2 Perform speculum and endoscopic examination.
CS5. 3.3 Interpret pathological and imaging studies.
CS5. 3.4 Diagnose, and properly manage granulomatous conditions of the nose and sinuses.

ATTITUDE (A5.3):

A5.3.1 Advise the patient of the treatment options and risks.
A5.3.2 Demonstrate communication skills and empathy, including team working and issues relating to practice.

5.4. Mucocoeles.

KNOWLEDGE (K5.4)

K5.4.1 Outline the definition, sites, etiology, clinical presentation & Differential Diagnosis of mucocoeles.
K5.4.2 Outline prognosis, medical and surgical management.

CLINICAL SKILLS (CS5.4)

CS5. 4.1 Assess the patient accurately.
CS5. 4.2 Perform speculum and endoscopic examination.
CS5. 4.3 Interpret imaging studies, haematological investigations other investigations.
CS5. 4.4 Diagnose, and properly manage mucocoeles.
ATTITUDE (A5.4):
A5.4.1 Advise the patient of the treatment options and risks.
A5.4.2 Demonstrate communication skills and empathy, including team working and issues relating to practice.

5.5. Nasal polyposis.

KNOWLEDGE (K5.5)
K5.5.1 Describe the definition, etiology, associated diseases & epidemiology of nasal polyposis.
K5.5.2 Describe pathology & pathogenesis of nasal polyposis.
K5.5.3 Describe clinical presentation of nasal polyposis.
K5.5.4 Describe D.D and complications of nasal polyposis.
K5.5.5 Describe medical and surgical management of nasal polyposis.

CLINICAL SKILLS (CS5.5)
CS5.5.1 Assess the patient accurately, interpret imaging studies.
CS5.5.2 Plan for management of patient with nasal polyposis.

ATTITUDE (A5.5):
A5.5.1 Advise the patient of the treatment options and risks.

5.6. Complications of rhinosinusitis.

KNOWLEDGE (K5.6)
K5.6.1 Outline the definitions, classification and clinical presentation of the complications of rhinosinusitis.
K5.6.2 Outline prognosis, medical and surgical management.

CLINICAL SKILLS (CS5.6).
CS5.6.1 Assess the patient accurately.
CS5.6.2 Perform speculum and endoscopic examination.
CS5.6.3 Interpret imaging studies, haematological investigations other investigations.
CS5.6.4 Diagnose, and properly manage complications of rhinosinusitis.

ATTITUDE (A5.6):
A5.6.1 Advise the patient of the treatment options and risks.
A5.6.2 Demonstrate communication skills and empathy, including team working and issues relating to practice.
5.7. Complications of Endoscopic Sinus Surgery.

**KNOWLEDGE (K5.7)**

**K5.7.1** Describe indications and contraindication of endoscopic sinus surgery.

**K5.7.2** Describe the possible complications of endoscopic sinus surgery.

**K5.7.3** Describe the preoperative planning to prevent complications of endoscopic sinus surgery.

**K5.7.4** Describe intraoperative strategies for avoiding and managing complications especially in revision cases of endoscopic sinus surgery.

**CLINICAL SKILLS (CS5.7)**

**CS5.7.1** Assess the patient accurately

**CS5.7.2** Plan for management of complications after endoscopic sinus surgery.

**ATTITUDE (A5.7):**

**A5.7.1** Demonstrate communication skills and empathy, including team working and issues relating to practice.

**A5.7.2** Discuss risks and potential benefits, potential complications and obtain informed consent.

5.8. Diseases of the septum

**KNOWLEDGE (K5.8)**

**K5.8.1** Discuss nasal septal deviation, symptoms and management.

**K5.8.2** Describe septal perforation and its management.

**K5.8.3** Discuss septal disease in systemic disorders including (vascular diseases, infectious diseases, autoimmune & miscellaneous). (See also K5.3.3)

**K5.8.4** Describe septal hematoma.

**K5.8.5** Describe septal abscess.

**CLINICAL SKILLS (CS5.8)**

**CS5.8.1** Assess the patient accurately, interpret imaging studies and diagnose

**CS5.8.2** Plan the management of patient with septal disease.

**ATTITUDE (A5.8):**

**A5.8.1** Advise the patient of the treatment options and risks.
5.9 Foreign bodies

**KNOWLEDGE (K5.9)**

- **K5.9.1** Outline the clinical picture and complications of foreign bodies.
- **K5.9.2** Describe the management.

**CLINICAL SKILLS (CS5.9)**

- **CS5.9.1** Assess the patient accurately, interpret imaging studies and diagnose.
- **CS5.9.2** Plan for management of patient with FB impaction.

**ATTITUDE (A5.9):**

- **A5.9.1** Advise the patient of the treatment options and risks.

5.10 Epistaxis

**KNOWLEDGE (K5.10)**

- **K5.10.1** Describe the blood supply to the nose
- **K5.10.2** List causes of epistaxis.
- **K5.10.3** Outline clinical picture & classification of epistaxis.
- **K5.10.4** Describe medical and surgical management of epistaxis.

**CLINICAL SKILLS (CS5.10)**

- **CS5.10.1** Assess the patient accurately, interpret imaging studies and diagnose.
- **CS5.10.2** Manage appropriately patient presented with epistaxis.

**ATTITUDE (A5.10):**

- **A5.10.1** Advise the patient of the treatment options and risks.

5.11 Nasal fracture and fractures of the facial skeleton.

**KNOWLEDGE (K5.11)**

- **K5.11.1** Describe the etiology and complications.
- **K5.11.2** Describe the classification, clinical presentation, investigation and pathophysiology.
- **K5.11.3** Plan for management of a patient with nasal & maxillofacial fractures.

**CLINICAL SKILLS (CS5.11)**

- **CS5.11.1** Assess the patient accurately.
- **CS5.11.2** Perform speculum and endoscopic examination, interpret imaging studies and diagnose.
- **CS5.11.3** Manage properly nose and facial skeleton fracture.
**ATTITUDE (A5.11):**

**A5.11.1** Demonstrate communication skills and empathy, including team working and issues relating to practice.

**A5.11.2** Advise the patient/parents or careers of the treatment options.

**A5.11.3** Discuss risks and potential benefits, potential complications and obtain informed consent.

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**5.12. Cerebrospinal fluid rhinorrhoea**

**KNOWLEDGE (K5.12)**

**K5.12.1** Describe the physiology of CSF definition and causes of CSF rhinorrhoea.

**K5.12.2** Describe the investigations and management.

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**CLINICAL SKILLS (CS5.12)**

**CS5.12.1** Assess the patient accurately

**CS5.12.2** Perform speculum and endoscopic examination, interpret imaging studies and diagnose,

**CS5.12.3** Plan for management of patient presented by CSF rhinorrhoea.

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**ATTITUDE (A5.12):**

**A5.12.1** Demonstrate communication skills and empathy, including team working and issues relating to practice.

**A5.12.2** Advise the patient/parents or careers of the treatment options.

**A5.12.3** Discuss risks and potential benefits, potential complications and obtain informed consent.

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**5.13. Oroantral fistula**

**KNOWLEDGE (K5.13)**

**K5.13.1** Discuss the causes of oroantral fistula.

**K5.13.2** Discuss diagnosis, complications and management of oroantral fistula.

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**CLINICAL SKILLS (CS5.13)**

**CS5.13.1** Assess the patient accurately

**CS5.13.2** Perform endoscopic and oral examination.

**CS5.13.3** Interpret imaging studies.

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**ATTITUDE (A5.13):**
A5.13.1 Demonstrate communication skills and empathy, including team working and issues relating to practice.
A5.13.2 Advise the patient/parents or careers of the treatment options.


**KNOWLEDGE (K5.14)**
- **K1.1.2.1.2** Outline the anatomy of the olfactory system and its central connections
- **K5.14.1** Outline anatomy & physiology of the nose (in relation to smell)
- **K5.14.2** Describe classification of olfactory disorder & causes of smell disturbance
- **K5.14.3** Describe clinical evaluation of smell function and different lines of management

**CLINICAL SKILLS (CS5.14)**
- **CS5.14.1** Assess the patient accurately
- **CS5.14.2** Perform speculum, endoscopic examination, interpret imaging studies, quantitative olfactory testing and diagnose.
- **CS5.14.3** Plan for management of smell disorders.

**ATTITUDE (A5.14):**
- **A5.14.1** Demonstrate communication skills and empathy, including team working and issues relating to practice.
- **A5.14.2** Advise the patient/parents or careers of the prognosis
- **A5.14.3** Discuss risks and potential benefits, potential complications and obtain informed consent.

5.15. The Orbital and optic nerve.

**KNOWLEDGE (K5.15)**
- **K5.15.1** Describe applied surgical anatomy and radiological evaluation of the orbit and discuss DD and management of proptosis.
- **K5.15.2** Describe the indications, therapeutic option of optic nerve decompression with preoperative assessment.

**CLINICAL SKILLS (CS5.15)**
- **CS5.15.1** Assess the patient accurately
- **CS5.15.2** Perform speculum and endoscopic examination, interpret imaging studies and diagnose.
- **CS5.15.3** Plan for patient management.

**ATTITUDE (A5.15):**
**A5.15.1** Demonstrate communication skills and empathy, including team working and issues relating to practice.

**A5.15.2** Discuss risks and potential benefits, potential complications and obtain informed consent.

### 5.16 - Facial pain and headache.

#### KNOWLEDGE (K.5.16)

**K5.16.1** List the causes, classification & Differential Diagnosis of facial pain and headache.

**K5.16.2** Describe medical and surgical management.

#### CLINICAL SKILLS (CS5.16)

**CS5. 16.1** Assess the patient accurately, interpret imaging studies and diagnose

**CS5. 16.2** Plan for patient management.

#### ATTITUDE (A5.16):

**A5.16.1** Advise the patient of the treatment options and risks.

### 5.17 - Nasal and paranasal sinus tumours.

#### KNOWLEDGE (K5.17)

**K5.17.1** Outline the clinical presentation, classification & spread of Nasal and paranasal sinus tumors.

**K5.17.2** Discuss the relevant clinical, neurological, vascular, pathological and radiological investigations

**K5.17.3** Discuss pathology of different tumors affecting nasal and paranasal sinus tumors.

**K5.17.4** Plan the management options of the nasal and paranasal sinus tumors.

#### CLINICAL SKILLS (CS5.17)

**CS5. 17.1** Assess the patient accurately, interpret imaging studies and diagnose

**CS5. 17.2** Plan for management of patient with nasal and paranasal sinus tumours.

#### ATTITUDE (A5.17):

**A5.17.1** Advise the patient of the treatment options and risks.

**A5.17.2** Ability to 'break bad news'.
### 5.18-Rhinoplasty

<table>
<thead>
<tr>
<th>KNOWLEDGE (K5.18)</th>
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<tbody>
<tr>
<td><strong>K5.18.1</strong> Outline the etiology psychological issues and aesthetics,</td>
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<tr>
<td><strong>K5.18.2</strong> Describe surgical management and techniques of repair</td>
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<tr>
<td><strong>K5.18.3</strong> List Complications of rhinoplasty.</td>
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<tr>
<th>CLINICAL SKILLS (CS5.18)</th>
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<tbody>
<tr>
<td><strong>CS5. 18.1</strong> Assess the patient accurately, interpret imaging studies and diagnose</td>
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<tr>
<td><strong>CS5. 18.2</strong> Plan for patient management and obtain informed consent.</td>
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<th>ATTITUDE (A5.18):</th>
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<tbody>
<tr>
<td><strong>A5.18.1</strong> Advise the patient of the treatment options and risks.</td>
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</table>
SURGICAL SKILLS IN RHINOLOGY (SS)

SS5.1. Perform independently nasal cautery and packing procedures for epistaxis
SS5.2. Perform independently reduction of nasal fractures
SS5.3. Perform independently septal surgery
SS5.4. Perform independently surgical removal of foreign bodies from the nose and sinuses.
SS5.5. Perform independently endoscopic sinus surgery.
SS5.6. Manage complications of sinus disease e.g. (orbital cellulites).
SS5.7. Assist in repair of CSF leaks and other complications.
SS5.8. Assist in rhinoplasty and Septorhinoplasty (reduction, augmentation including harvesting of grafts).
SS5.9. Observe and assist in surgery for choanal atresia
SS5.10. Observe surgical interventions for nasal and paranasal sinus tumor surgery.
6. SKULL BASE AND NEUROTOLOGY.
6. SKULL BASE AND NEURO-OTOLOGY.

OBJECTIVE
To understand the etiology, presenting signs, symptoms and management of common skull base conditions. This module gives some indication of the breadth and depth of required knowledge, clinical and surgical skills. The list should not be considered to be fully inclusive or exhaustive.


KNOWLEDGE (K6.1)

K6.1.1 Anterior skull base
   K6.1.1.1 Outline the anatomy of anterior skull base.
   K6.1.1.2 Describe surgical anatomy of the anterior skull base.

K6.1.2 Lateral skull base
   K6.1.2.1 Outline the anatomy of lateral skull base
   K6.1.2.2 List anatomical subdivision of lateral skull base including the infratemporal fossa
   K6.1.2.3 Describe muscles superficial to the lateral skull base.

K6.1.3 Posterior skull base
   K6.1.3.1 Outline the anatomy of posterior skull base
   K6.1.3.2 Describe structures within the skull base.

K6.1.4 The cranial nerves.
   K6.1.4.1 Describe anatomy of the cranial nerves.
   K6.1.4.2 Describe clinical evaluation and syndromes of the last four cranial nerves.

CLINICAL SKILLS (CS6.1)

CS6.1.1 Proper examination of all cranial nerves

ATTITUDE (A6.1):

A6.1.1 Adopt Surgeon's attitude as Medical Expert and Scholar

6.2. Cerebellopontine angle lesions

KNOWLEDGE (K6.2)

K6.2.1 Describe the surgical anatomy and neuro-anatomy of the cerebellopontine angle lesions.
K6.2.2 Discuss Differential Diagnosis of cerebellopontine angle lesions.
K6.2.3 Describe the relevant clinical neurological, vascular and radiological investigations and outline main principles for management.
K6.2.4 Describe the principles of surgical and non-surgical vestibular rehabilitation (See also K4.6.5)
K6.2.5 Describe neuro-radiological imaging of the inner ear and central vestibular pathways.
K6.2.6 Describe the pathology, clinical picture, incidence and growth pattern of vestibular schwannoma.
K6.2.7 Outline management of different cerebellopontine angle lesions with high lightening on vestibular schwannoma.
K6.2.8 Describe the surgical approaches to the CP angle and complications of the skull base surgery.

CLINICAL SKILLS (CS6.2)
CS6.2.1 Take clinical history and elicit clinical signs
CS6.2.2 Interpret vestibular assessment, including electro physiological testing.
CS6.2.3 Interpret audio vestibular tests
CS6.2.4 Plan for patient management.

ATTITUDE (A6.2):
A6.2.1 Demonstrate communication skills and empathy
A6.2.2 Advise the patient of the treatment options,
A6.2.3 Discuss risks, potential benefits, potential complications and obtain informed consent.

6.3. Jugular Foramen Lesions
KNOWLEDGE (K6.3)
K6.3.1 Describe the anatomy of the jugular foramen with its relation.
K6.3.2 Discuss the relevant clinical neurological, vascular and radiological investigations
K6.3.3 Discuss pathology of the jugular foramen lesions.
K6.3.4 Discuss D.D. of the jugular foramen lesions.
K6.3.5 Describe the surgical and non-surgical management options of the jugular foramen lesions.

CLINICAL SKILLS (CS6.3)
CS6.3.1 Take clinical history and elicit clinical signs
CS6.3.2 Interpret vestibular assessment, including electro physiological testing.
CS6.3.3 Interpret audio vestibular tests
CS6.3.4 Plan for patient management.
ATTITUDE (A6.3):
A6.3.1 Demonstrate communication skills and empathy
A6.3.2 Advise the patient of the treatment options,
A6.3.3 Discuss risks, potential benefits, potential complications and
obtain informed consent.

6.4. Petrous apex Lesions.

KNOWLEDGE (K6.4)
K6.4.1 Describe the anatomy of the petrous apex.
K6.4.2 Discuss different lesions affect the petrous apex and their
pathology.
K6.4.3 Discuss the investigations of the petrous apex lesions.
K6.4.4 Plan the management options of the petrous apex lesions.

CLINICAL SKILLS (CS6.4)
CS6.4.1 Take clinical history and elicit clinical signs
CS6.4.2 Interpret vestibular assessment, including electro physiological
testing
CS6.4.3 Interpret audio vestibular tests.(See also cs6.2.3&6.2.4)
CS6.4.4 Plan for patient management.

ATTITUDE (A6.4):
A6.4.1 Demonstrate communication skills and empathy
A6.4.2 Advise the patient of the treatment options,
A6.4.3 Discuss risks, potential benefits, potential complications and
obtain informed consent.

6.5. Tumors of the Temporal Bone.

KNOWLEDGE (K6.5)
K6.5.1 Describe the anatomy of the temporal bone
K6.5.2 List of different tumours affecting temporal bone.
K6.5.3 Discuss tumors of the temporal bone and mention their
pathological picture.
K6.5.4 Discuss the relevant clinical picture, neurological, vascular,
pathological and radiological investigations
K6.5.5 Plan the management options of the temporal bone tumors.

CLINICAL SKILLS (CS6.5)
CS6.5.1 Take clinical history and elicit clinical signs
CS6.5.2 Interpret vestibular assessment, including electro physiological
testing, and clinical examination
CS6.5.3 Interpret audio vestibular tests.(See also cs6.2.3&6.2.4)
CS6. 5.4 Plan for patient management

**ATTITUDE (A6.5):**

- **A6.5.1** Demonstrate communication skills and empathy
- **A6.5.2** Advise the patient of the treatment options and break bad news.
- **A6.5.3** Discuss risks, potential benefits, potential complications and obtain informed consent.

**SURGICAL SKILLS IN SKULL BASE (SS6)**

- **SS6.1** observe surgeries for acoustic neuroma and temporal bone resection (if available)
7. MISCELLANEOUS TOPICS IN OTORHINOLARYNGOLOGY
7. MISCELLANEOUS TOPICS IN OTORHINOLARYNGOLOGY

7.1. Magnetic Resonance Imaging

OBJECTIVE

To understand the basics behind MRI modalities and interpret MRI's related to the practice of ENT that surgeons will encounter during the management of both adult and child patients with diseases of the ears, nose and throat, and the recent advances in MRI techniques.

KNOWLEDGE (K7.1)

K7.1.1 Understand the basic principles of MRI
K7.1.2 Explain the different modalities of MRI
K7.1.3 Know about functional MRI (fMRI)
   K7.1.3.1 know about BOLD fMRI (blood oxygenation level dependent functional magnetic resonance imaging)
   K7.1.3.2 know about perfusion functional magnetic resonance imaging

CLINICAL SKILLS (CS7.1)

CS7.1.1 Interpret and report basic and advanced MRI studies in various ENT applications
CS7.1.2 Analyze functional magnetic resonance imaging

7.2. Positron emission tomography (PET)

OBJECTIVE

To understand the basics of PET scanning and integrated PET/CT scanning and interpret their findings in relation to the practice of head and neck oncology that surgeons will encounter during the management of both adult and child patient cancers.

KNOWLEDGE (K7.2)

K7.2.1 Understand the role of altered tissue metabolism in different pathologies
K7.2.2 Understand the principles of PET scanning
K7.2.3 Outline the role of PET scanning in:
   K7.2.3.1 squamous cell carcinoma
   K7.2.3.2 Occult primary tumors
   K7.2.3.3 other malignant tumors
K7.2.4 outline non oncological applications of PET scanning with special emphasis in cochlear implantation procedures
K7.2.5 understand the concept and benefits of using integrated PET/CT

CLINICAL SKILLS (CS7.2)

CS7. 2.1 Interpret PET scans and integrated PET/CT scans in adoption with good medical practice guidelines.

7.3. Image guided surgery and 3D planning

OBJECTIVE
To understand the role of modern technology and computer advances in relation to Otorhinolaryngology practice.

KNOWLEDGE (K7.3)

K7.3.1 Demonstrate understanding of the 3-dimensional view in ENT
K7.3.2 Outline the uses and major applications of IGS in otorhinolaryngology
K7.3.3 Outline the benefits of IGS in Otorhinolaryngology practice
K7.3.4 Understands the terms; registration and tracking in IGS.

CLINICAL SKILLS (CS7.3)

CS7.3.1 Observe (If available) Image Guided surgery

7.4.Laser principles in Otorhinolaryngology

OBJECTIVE
To understand the use of laser in various Otorhinolaryngological conditions and recent trends in laser applications.

KNOWLEDGE (K7.4)

K7.4.1 Understand definition and principles of Laser tissue interaction .
K7.4.2 Outline nature of laser light and types of lasers
K7.4.3 Outline laser-tissue interactions
**K7.4.4** Discuss laser applications in otolaryngology and it is complications.

**CLINICAL SKILLS (CS7.4)**

**CS7.4.1** Observe (If available) various laser applications in ENT

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**7.5. Optical Coherence Tomography (OCT)**

**OBJECTIVE**

To understand the use of OCT in imaging of the larynx.

**KNOWLEDGE (K7.5)**

**K7.5.1** Understand the importance of OCT in the diagnosis, improving visualization and pathology of laryngeal lesions

**CLINICAL SKILLS (CS7.5)**

**CS7.5.1** Observe (if available) OCT images

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**7.6. Contact Endoscopy**

**OBJECTIVE**

To understand the use of contact endoscopy procedures in ENT.

**KNOWLEDGE (K7.6)**

**K7.6.1** Understand the use of contact endoscopy in neoplastic conditions of the larynx, nasal cavity, nasopharynx, oropharynx and oral cavity.

**CLINICAL SKILLS (CS7.6)**

**CS7.6.1** Observe (if available) contact endoscopy images.

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**7.7. HIV and Otorhinolaryngology**

**OBJECTIVE**

To understand AIDS in relation to ENT practice.

**KNOWLEDGE (K7.7)**

**K7.7.1** Outline the virology, epidemiology, pathology of HIV infection

**K7.7.2** Describe otorhinolaryngological manifestations of AIDS

**K7.7.3** Discuss management of otorhinolaryngological manifestations of an AIDS patient.
LECTURES IN ENT CURRICULUM

1. APPLIED BASIC SCIENCE

A. Anatomy
   1. Otological anatomy
   2. Respiratory tract and rhinological anatomy
   3. Head and neck Anatomy

B. Physiology
   1. Upper aerodigestive tract Physiology
   2. The outer, middle and inner ear
   3. The nose and olfactory system

C. Audiology
   1. Physics of sound

D. Oncology
   1. Cancer staging and principles of chemo and radiotherapy

2. PEDIATRIC OTOLARYNGOLOGY

2.2. Disorders of the external ear.
2.3. Acute otitis media in children.
2.4. Chronic otitis media.
2.5. Ear Trauma.
2.6. Facial Paralysis.
2.7. Deafness in childhood.
2.8. Implantable hearing devices.
2.10. Congenital nasal abnormalities.
2.11. Nose and sinus infection.
2.12. Non infectious conditions of the nose.
2.13. Nasal trauma and deformity.
2.15. Airway disorders in childhood.
2.17. Tumors of the head & neck in children.
2.18. Cervicofacial infections in children.
2.19. Foreign bodies in the ear, nose and aerodigestive tract.
2.20. Gastro-oesophageal reflux and aspiration.
3. HEAD AND NECK

3.1. Salivary gland disease
3.2. Thyroid disease
3.3. Head and Neck Cancer
3.4. The Pharynx and oesophagus
3.5. Adenoidal and Tonsillar pathology
3.6. Pharyngeal Suppurations
3.7. The larynx
3.8. Airway Disorders
3.9. Voice disorders
3.10. Cervical Lymphadenopathy
3.11. Sleep Apnea

4. OTOLOGY

4.1. Congenital Deformities of the Ear and Temporal Bone
4.2. Disorders of pinna and the external auditory canal
4.3. Acute otitis media in adults.
4.4. Chronic otitis media.
4.5. Otosclerosis
4.8. Tinnitus
4.9. Implantable hearing devices
4.10. Facial paralysis
4.11. Ear trauma
4.12. Otalgia
5. RHINOLOGY.
5.1. Congenital abnormalities
5.2. Rhinosinusitis.
5.3. Granulomatous conditions of the nose and sinuses
5.4. Mucocoeles.
5.5. Nasal polyposis.
5.6. Complications of rhinosinusitis.
5.7. Complications of endoscopic sinus surgery.
5.8. Diseases of the septum.
5.9. Foreign bodies.
5.10. Epistaxis.
5.11. Nose fracture and fractures of the facial skeleton.
5.13. Oroantral fistula.
5.15. Orbital and optic nerve decompression.
5.16. Facial pain and headache.
5.17. Nasal and paranasal sinus tumours.
5.18. Rhinoplasty.

6. SKULL BASE AND NEUROT-OTOLOGY.
6.2. Cerebellopontine angle lesions
6.3. Jugular Foramen Lesions
6.4. Petrous apex Lesions.
6.5. Tumors of the Temporal Bone.
7. MISCELLANEOUS TOPICS IN OTORHINOLARYNGOLOGY

7.1. Magnetic Resonance Imaging
7.2. Positron emission tomography (PET)
7.3. Image guided surgery and 3D planning
7.4. Laser principles in Otorhinolaryngology
7.5. Optical Coherence Tomography (OCT)
7.6. Contact Endoscopy
7.7. HIV and Otorhinolaryngology

### Obligatory courses

- Minor surgical procedures
- Endoscopic sinus surgery course
- Temporal bone surgery course etc.