

Curriculum

NBEMS Diploma



Otorhinolaryngology (ENT)

- ◆ Programme Goal and Objectives
- ◆ Teaching Schedule
- ◆ Syllabus
- ◆ Log Book
- ◆ Suggested Books & Journals

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I. PROGRAMME GOAL AND OBJECTIVES

1. **Goal:** The goal of “DIPLOMA IN Otorhinolaryngology” 2 years course in otolaryngology is to produce a competent otorhinolaryngologist who:
 - a. Recognizes the health needs of ENT patients and carries out professional obligations in keeping with principles of National Health Policy and professional ethics.
 - b. Has the acquired competencies pertaining to ENT that are required to be practiced in the community and that all levels of health care system.
 - c. Has acquired skills in effectively communicating with the patient, family and community.
 - d. Is aware of the contemporary advances and developments in medical science as related to Otolaryngology.
 - e. Is oriented to principles of research methodology.
 - f. Has acquired skills in educating medical and paramedical professionals.
 - g. Is able to perform basic and emergency procedures in ENT.

2. **Objectives:** At the end of the Diploma in otorhinolaryngology, the student should be able to:
 - a. **Cognitive Domain:**
 - Recognize the key importance of deafness control program in the context of health priority of the country.
 - Interpret important imaging and laboratory results.
 - Diagnose ENT problems based on the analysis of history, physical examination and investigative work up.
 - Plan and deliver comprehensive treatment for ENT pathologies.
 - Plan and advise measures for the prevention of deafness, allergies, head neck cancers and to plan rehabilitation according.

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- Develop skills as self-directed learner, recognize continuing educational needs, use appropriate resources and critically analyze relevant published literature in order to practice, evidence, based otolaryngology.
 - Demonstrate competence in basic concepts of research methodology and epidemiology.
 - Play the assigned role in the implementation of national deafness programs, effectively and responsibly.
 - Organize and supervise the desired managerial and leadership skills.

b. Affective Domain:

- Demonstrate skills in documentations of case details and of morbidity and mortality data relevant to the assigned situation.
- Demonstrate empathy and human approach towards patients and their families and respect their emotions.
- Demonstrate communicate skills in explaining management and prognosis, providing counseling and giving health education messages to patients and their families.
- Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.
- Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.
- Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.

c. Psychomotor Domain: The following skills must be achieved:

- Practice the specialty of Otolaryngology in keeping with the principles of professional ethics.

- Take detailed history, perform physical and local ENT examination including Indirect Laryngoscopy, Anterior, Posterior rhinoscopy, otoscopy, audiometric assessment and interpretation.
- Perform relevant investigative and therapeutic procedures for the ENT patient.
- Manage ENT emergencies efficiently.
- Facilitate learning of medical/nursing students, practicing physicians, para-medical health workers and other providers as a teacher trainer.

II. TEACHING SCHEDULE:

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| 1. Journal club/Seminar | Once a week |
| 2. Specialty clinic (Vertigo/head neck cancer) | Once a week |
| 3. Seminar/Case presentation | Twice a week |
| 4. Central Session | Once a month |

Seminar	Twice a Month
Bed side case discussion	Once a week
Mortality meet Audit (detailed discussion of all the deaths occurring in previous week)	Once a Week
Statistics (including OPD, ward and OT)	Once a Week
Mock exam (bed side case is allotted 1 hour 45 minutes prior to presentation) on the pattern of university examination	Biannually
Central session (CPC, guest lectures, integrated student seminars, grand round, sessions on basic sciences, public health programs medical ethics and legal issues)	Once a month

Interesting/difficult cases	Once a month
Radiology	Once in two months
Faculty Lectures	Once a month with Faculty from Other specialties
Head and Neck Surgery	2 in each semester
Communication Skills	1 in each semester
Ethical & Legal Issues	1 in each year
Departmental Symposium	1 in each semester
Community Health Programs	Once in 3 months
Infection Control	Once in 3 months
Environmental Health	Once in 6 months

Note:

- All sessions are to be attended by the faculty members. All Diploma ENT are supposed to attend the sessions except the ones posted in emergency.
 - All the teaching sessions are assessed by the consultants at the end of session and marks are given out of 10 and kept in the office for internal assessment.
 - Attendance of the Residents at various sessions has to be at least 75%.
5. Job Responsibilities: During first year the resident will work under direct supervision of the 2nd year resident/senior resident and consultant on call. He /She will be responsible for taking detailed history, examination of patients as per the file record and send appropriate investigations as advised by seniors. Initially all procedures are to be observed and then done under supervision of seniors and

during 2nd year can do procedures independently. In 2nd year, resident is posted in specialty clinics and is also responsible for making of discharge cards including referrals. In 2nd year, the resident is encouraged to make independent decisions in management of cases. He/ She is also involved in teaching of undergraduate students in OPDs.

The first year resident observes the general layout and working of the OT, understands the importance of maintaining sanctity of the OT, scrubbing, working and sterilization of all the OT instruments, know-how of endoscopes, microscopes and laryngoscopes. He/ She is responsible for shifting of OT patients, for participating in the surgery as second assistant and for post op management of the patient in recovery and in ward. The second-year resident is responsible for the pre-op work up of the patient, surgical planning and understanding the rationale of surgery. He/ She is the first assistant in surgery and is responsible for anticipating intra-op and post-op complications and managing them.

III. SYLLABUS

THEORY:

1. Ear:

- Anatomy embryology and ultrastructure of the human ear.
- Physiology of hearing.
- Assessment of hearing.
- Hearing loss.
- Physiology of equilibrium and its application to the dizzy patient.
- Assessment of vestibular function
- Eustachian tube anatomy and physiology
- Facial nerve
- Temporal bone

2. Audiology:

- Audiometry and masking.
- Tympanometry
- BERA

3. Nose and Paranasal Sinuses:

- Anatomy and Embryology.
- Physiology.
- Pathophysiology of the ears and nasal sinuses in flight and diving.
- Nasal Septum.
- Evaluation of the nasal airway (Rhinomanometry)

4. Oral cavity:

- The embryology /anatomy of mouth and related faciomaxillary structure
- Embryology/anatomy and physiology of salivary glands

5. Pharynx and Esophagus:

- Anatomy, embryogenesis and physiology of pharynx
- Anatomy and embryogenesis of esophagus and its relations
- Physiology of deglutination

6. Larynx and Tracheobronchial Tree:

- Anatomy and embryology
- Physiology of respiration
- Physiology of phonation

7. Skull Base:

- Surgical anatomy
- Clinical neuroanatomy

8. Neck:

- Facial spaces of head and neck
- Lymph nodes of head and neck
- Thyroid gland

9. Imaging and Radiology: Image taking and interpretation of ultrasound, angiography, dacrycystography, x-rays, CT, MRI, barium studies, contrast studies etc. with respect to ENT.

- Basic immunology
- Microbiology as related to ENT
- Wound healing principle
- Intensive care in ENT patients
- Anesthesia in ENT
- Biomaterials used in ENT
- Medical negligence in otolaryngology
- Principle of chemotherapy
- Principle of radiotherapy
- Principle and use of nuclear medicine
- Principle of laser surgery

DISORDERS: THEIR MEDICAL/SURGICAL MANAGEMENT

1. Ear: Etiology and management of inflammatory condition of external and middle ear

- Pathology of cochlea
- Pathology of vestibular ear
- Diseases of external ear
- Diseases of Eustachian tube
- Ear trauma
- Management of CSOM and cholesteatoma.
- Complications of CSOM and their management
- Otosclerosis etiopathogenesis and management
- Menier's disease etiopathogenesis and management
- Sensorineural hearing loss causes and management ♦ Vertigo
- Otagia causes and management

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- Tinnitus causes and management
 - Ototoxicity
 - Acoustic neuroma
 - Epithelial tumours of EAC and middle ear
 - Glomous tumour of ear
 - Facial nerve disorder, etiopathogenesis and management
 - Cochlear implants
 - Rehabilitation of hearing impaired
 - Reconstruction of ear

2. Nose and Pns:

- Conditions of external nose
- Abnormalities of smell
- Mechanism and treatment of allergic rhinitis
- Food allergy and rhinitis
- Infective rhinitis and sinusitis
- Complications of sinusitis
- Intrinsic rhinitis
- Nasal polyps
- CSF rhinorrhea
- Fracture of facial skeleton
- Rhinoplasty
- Epistaxis
- Snoring and sleep apnea
- Non healing granulomas of nose
- Facial pain and headache
- Aspects of dental surgery for ENT
- Trans sphenoidal hypophysectomy
- The orbit with relation with nose
- Cysts, granulomas and tumors of jaws, nose and sinuses

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- Deviated septum and septoplasty
 - Neoplasm of nasal cavity
 - Neoplasm of PNS

3. Oral Cavity and Salivary Gland:

- Common disorder of oral cavity
- Tumors of oral cavity
- Non neoplastic disorder of oral cavity
- Neoplasm of salivary gland
 - Benign
 - Malignant

4. Pharynx and Esophagus:

- Acute and chronic infection of pharynx
- Neurological affective of pharynx
- Pharyngeal pouches
- Abscesses in relation to the pharynx
- Angiofibroma
- Nasopharyngeal malignancy
- Tumors of oropharynx and lymphomas of head and neck
- Tumors of hypopharynx
- The esophagus in otolaryngology.
- Dysphagia
- Foreign bodies of food passage

5. Larynx:

- Acute and chronic laryngitis
- Disorders of voice
- Management of obstructive airway and tracheostomy
- Trauma and stenosis of larynx
- Neurological affections of larynx
- Tumors of larynx (benign & malignant)
- Congenital lesion of larynx and stridor

6. Neck /Face:

- Benign disease of neck
- Metastatic neck disease
- The thyroid gland benign / malignant disorders
- Tumors of infratemporal fossa and parapharyngeal space
- Facial plastic surgery.
- Plastic and reconstructive surgery of head and neck

7. Paediatrics Otolaryngology:

- Genetic factors and deafness
- Causes of deafness
- Testing hearing in children
- Screening and surveillance for hearing impairment in preschool children
- Otitis media with effusion
- Acute and chronic suppurative otitis media in children
- Surgery of congenital absence of external /middle ear
- Management of hearing-impaired child.
- Cochlear implantation in children
- Vestibular disorder in children
- Speech and language development
- Foreign body in ear and nose
- Congenital anomalies in nose
- Craniofacial anomalies
- Nasal obstruction, rhinorrhea in infants and children
- Tonsils and adenoids
- Dental development, orthodontics, cleft lip and palate
- Sleep apnea
- Stertor and stridor
- Acute laryngeal infections
- Home care of tracheostomized children

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- Branchial cleft anomalies, thyroglossal cyst and fistula.
 - Tumors of head and neck in children
 - The drooling child
 - Recurrent respiratory papillomatosis
 - Pediatrics anesthesia

PRACTICAL:

- 1. History and examination:** History taking pertaining to Otolaryngology and examination like: anterior and posterior rhinoscopy, oral cavity examination, indirect laryngoscopy, otoscopy, neuro-otology testing, tuning fork testing, audiometry, impedance and vestibular function testing, examination of Eustachian tube, functional examination of nose, transillumination test. Neck examination, examination of cranial nerves & cervical lymph nodes. Nasal endoscopy, flexible fiberoptic laryngoscopy, micro-ear examination (according to the facilities available in the department).
- 2. Monitoring skills:** Temperature recording, post-op patient monitoring and management accordingly, tracheostomy care, airway management, management of bedside emergencies like Epistaxis, tracheostomy, cricothyroidotomy, vertigo etc.
- 3. Therapeutic skills:** Tracheostomy, anterior/posterior nasal packing, ear packing, syringing, foreign body removal from ear/nose/throat, airway management, nasogastric feeding, endotracheal intubation, cardiopulmonary resuscitation, administration of oxygen, venipuncture and establishment of vascular access, administration of fluids, blood, blood components, parenteral nutrition, common dressings, abscess drainage and basic principles of rehabilitation.
- 4. Diagnostic skills:** Interpretation of X-rays/CT/MRI of Head, nose and paranasal sinuses, sear, neck & chest. Understanding of audiograms, ENG. BERA, ultrasonographic abnormalities.
- 5. Surgical skills:** The first-year resident observes the general layout and working of the OT, understands the importance of maintaining sanctity of the OT,

scrubbing, working and sterilization of all the OT instruments, know-how of endoscopes, microscopes and laryngoscopes. He /She is responsible for shifting of OT patients, for participating in the surgery as second assistant and for post op management of the patient in recovery and in ward. He should be able to manage the foreign bodies in aero digestive tract.

6. The residents are provided with the facilities for temporal bone and cadaveric dissection which are checked periodically.

IV. LOGBOOK:

Logbook: During the training period, the post graduate student should maintain a Logbook/ portfolio indicating the duration of the postings/work done in ENT Wards, OPDs, Emergency, SNCU, HDU. This should indicate the procedures assisted and performed, and the teaching sessions attended. The purpose of the logbook is to:

1. Help maintain a record of the work done during training,
2. Enable Consultants to have direct information about the work; intervene, if necessary,
3. Use it to assess the experience gained periodically.
4. Self-reflection and appraisal
5. The logbook shall be used to aid the internal evaluation of the student.
6. The Logbooks shall be checked and assessed periodically by the faculty members imparting the training.

V. SUGGESTED BOOKS & JOURNALS:

1. Books:

- Diseases of ear, nose and throat, Scott Brown
- Head and Neck surgery, PM Stell & AGD Maran
- Surgery of the Ear, Glasscock & Shambaugh
- Otolaryngology - Head & Neck Surgery, Cummings

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- Diseases of ear, nose and throat, Logan Turner
 - Diseases of ear, nose and throat, PL Dhingra
 - Audiological assessment, Anirban Biswas
 - Otolaryngology, Otology & Neurotology, Paprella & Micheal S.
 - Essentials of endoscopic sinus surgery, Stamberger
 - Colour Atlas of Head & Neck Surgery, Jatin P Shah

2. Journals

- Archives Otolaryngology.
- Journal of Laryngology & Otology.
- Journal of Otolaryngology, clinics of North America.
- Indian Journal of Otolaryngology & Head & Neck



आयुर्विज्ञान में राष्ट्रीय परीक्षा बोर्ड
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