PRAVARA INSTITUTE OF MEDICAL SCIENCES
(DEEMED TO BE UNIVERSITY)
Loni, Tal. Rahata, Dist. Ahmednagar 413736
NAAC Re-accrediated with 'A' Grade

SYLLABUS

PG Programme- MS (OTORHINOLARYNGOLOGY)

(As per MCI Regulations Governing PG Programme 2000 Amended up to May, 2018)

I. PREAMBLE:

The aim of Post Graduate training program is to achieve competent ENT specialist who would be able to provide basic to advance quality health care to the community with the complete knowledge of subject, ethics and humanity. Also they should have knowledge of teaching learning, assessment methods and research work.

To achieve the above goal the student during their training program should be taught about the importance of

1. Thorough therotical knowledge.
2. Implementation of therotical knowledge in practice
3. Surgical skill lab trainings
4. Specialized training related to subject like Audiometry, Imaging etc.
5. To assist, perform various minor and major surgical procedures
6. To undergo training in research work and publication.
7. Documentation of worl for record purpose, legal purpose and research work.
8. Medical ethics and Bio ethics.
9. Consent, Confidentiallity, privacy, counseling, attitude and communication skills.
10. Teaching learning methods.

The students should undergo 360 formative assessment and summative assessment at regular intervals including OSCE.

II. SUBJECT SPECIFIC LEARNING OBJECTIVES

At the end of postgraduate training the student should be able to:

1. Practice his specialty ethically keeping in mind the requirement of the patient, community and people at large.
2. Demonstrate sufficient understanding of basic sciences related to his specialty and be able to integrate such knowledge in his Clinical practice.
3. Diagnose and manage majority of conditions in his specialty (clinically and with the help of relevant investigations)
4. Plan and advise measures for the promotive, preventive, curative and rehabilitative aspects of health and diseases in the specialty of ENT.
5. Should be able to demonstrate his cognitive skills in the field of ENT and its ancillary branches during the formative and summative evaluation processes.
6. Play the assigned role in the implementation of National Health Programs
7. Demonstrate competence in basic concepts of research methodology and writing thesis and research papers.

8. Develop good learning, communication and teaching skills.
9. Demonstrate sufficient understanding of basic sciences and the clinical applications related to the specialty to be able to integrate this knowledge into Clinical practice.

   Acquire in-depth knowledge in the subject including recent advances.

1. Theoretical Knowledge:

A student should have fair knowledge of basic sciences (Anatomy, Physiology, Biochemistry, Microbiology, Pathology and Pharmacology) as applied to ENT and be able to integrate such knowledge in his clinical practice. She/He should acquire in-depth knowledge of his subject including recent advances. She/He should be fully conversant with the bedside procedures (diagnostic and therapeutic) and having knowledge of latest diagnostics and therapeutics available.

2. Clinical / Practical skills:

A student should be adept at good history taking, physical examination, providing basic life support and advanced cardiac life support. She/he should be able to choose the required investigations to enhance the attitude, communication skills, including dealing with patient's relatives with the required empathy, adapt to changing trends in education, learning methods and evolving new diagnostic and therapeutic techniques in the subject of ENT.

A) Research:

She/He should know the basic concepts of research methodology, plan a research project, plan and write a thesis and should know how to use library facilities. Basic knowledge of statistics is also required. Knowledge about use of internet resources is required.

4. Teaching:

The student should learn the basic methodology of teaching and assessment and develop competence in teaching medical/paramedical students and their assessment.

Demonstrate that he is fully conversant with the latest diagnostics & therapeutics available.

III. SUBJECT SPECIFIC COMPETENCIES

A. Cognitive Domain

At the end of training, the student should be able to demonstrate ability to practically apply knowledge gained during training period. This would include the following:

Basic Sciences related to Otolaryngology

Physiology- Mechanism of perception of smell and taste, mechanism of breathing and voice production, lacrimation, deglutition and salivation. Functional tests of the nose and paranasal sinuses, mechanism of cough and sneezing.

Physics of sound, theories of hearing, mechanism of perception of sound and speech production, physiology of equilibrium and cerebral function. Physiology of brain in connection with hearing, speech, smell and phonation. Audiologic tests like audiometry, impedance, evoked potentials, OAE, Speech audiometry.

Physiology of larynx, tracheobronchial tree and oesophagus - Histology of mucous membranes, internal ear and other associated organs and structures, nose, PNS NPx, Larynx, Tracheo-Bronchial tree, Lymphoepithetical system. Mechanism of immune system/immunology and genetics.

Anatomy-Embryogenesis of ear, nose and throat including palate and the larynx, Oesophagus, trachea and lungs, tongue, salivary gland Head and Neck and skull base etc. Parapharyngeal spaces in the neck including connective tissue barriers of larynx. Applied anatomy of the skull bones, accessory sinuses, external, middle and inner ears, nose, PNS, nasopharynx, meninges, brain, pharynx, larynx, trachea and bronchi, lungs, pleurae, oesophagus and the mediastinum.

Anatomy of all cranial nerves with their functions.

Principles and Practices of Otolaryngology, Audiology and Speech Pathology

Clinical Methodology as applied to ORL HN diseases in adult and children and the accessory sinuses, diagnosis and surgical treatment of diseases of nose, throat and ear in adult and children. Prevention and treatment, infectious diseases of Otolaryngology and Head Neck region. Circulatory and nervous disturbances of the nose, throat and ear and their effects on other organs of the body. Deformities, injuries sinus infections, polyps and the tumors of the nose, and paranasal sinuses.

Examination of the ear, deafness and allied diseases, complications of diseases of the ear. Injuries, tumors, nervous and circulatory neurological disturbances of the ear. Diagnosis and treatment of tinnitus and vertigo. Diagnosis and rehabilitation of the Hearing handicapped including, dispensing of hearing aid other vibrotatile aids.

- Surgical pathology of Otolaryngology and Head Neck region. o Basic knowledge of anaesthesia as related to ENT.
- Examination of diseases of children (Paediatric ORL) in connection with throat and larynx. Neurological and vascular disturbances. Congenital and neonatal stridor.
- Pathology of various diseases of the larynx and throat, tracheo-bronchial tree and their causative organisms.
- Bronchoscopy and oesophagoscopy, including microlaryngoscopic procedures.
- Reading of radiograms, scans, audiograms, nystagmograms and tympanograms in connection with ENT diseases/disorders.
- Special apparatus for the diagnosis and treatment of the diseases of ear, nose and throat including audiometer, BERA, Speech analyser etc.

Recent advances in Otolaryngology and Head Neck surgery

Recent developments in the diagnosis, pathogenesis and treatment of the ENT diseases

The knowledge of the frontiers of the oto-laryngology and lateral skull base surgery Rhinoplasty, endoscopic sinus surgery, and anterior cranial fossa surgery Knowledge of LASERS and fibre optics
Other methods of managing Hearing loss
Implantable hearing aids cochlear implants Phonosurgery
Etiology and Managements of sleep apnoea/snoring Hypophysectomy and optic nerve decompressions Immunotherapy and modalities of the gene therapy
Newer techniques for Radiotherapy including, use of gamma knife for treatment of Intracranial tumors and other malignancy
Chemotherapy of cancer

General Surgical Principles and Head-Neck Surgery

General Surgery, Head and Neck oncology, and Medicine as applicable to the ENT disorders/diseases. Surgery of congenital deformities of nose, ear (Pinna) and trachea/oesophagus etc.

Radiology, Imaging – computed tomography and magnetic resonance imaging, (MRI) and intervention radiology and angiography as related to ENT

General Pathologic aspects such as wound healing and also pathology and Pathogenesis of ENT diseases, Pharmacology, molecular biology, genetics, cytology, haematology, and immunology as applicable to otolaryngology

General Principles of faciomaxillary traumatology and neck injury Plastic Surgery as applicable to Otolaryngology

B. Affective Domain

1. The student will show integrity, accountability, respect, compassion and dedicated patient care. The student will demonstrate a commitment to excellence and continuous professional development.
2. The student should demonstrate a commitment to ethical principles relating to providing patient care, confidentiality of patient information and informed consent.
3. The student should show sensitivity and responsiveness to patients' culture, age, gender and disabilities.
4. The student should be able to choose the required investigations to enhance the attitude, communicative skills, including dealing with patient's relatives with the required empathy, adapt to changing trends in education, learning methods and evolving new diagnostic and therapeutic techniques in the subject of ENT.

C. Psychomotor Domain

By the end of the training, a student should be able to demonstrate his skills in:

Taking a good history and demonstrating good examination techniques. arrive at a logical working diagnosis, differential diagnosis after clinical examination and order appropriate investigations keeping in mind their relevance (need based) and

thereby provide appropriate care that is ethical, compassionate, responsive and cost effective and in conformation with statutory rules.

Should be able to perform and demonstrate the practical skills in the field of ENT including the following:

- Examination of the ear, nose and throat oral cavity examination
- Clinico-physiological examination and evaluation of the audio-vestibulo neurological system
- Examination of the larynx and the throat including flexible endoscopy, stroboscopy, voice analysis and the clinico-physiological examination of the speech
- Examination of the otological and audiological system including Tuning fork testing, audiological evaluation, micro and otoendoscopy
- Clinical and physiological evaluation of the nose and paranasal sinuses including nasal endoscopy and olfactory evaluation
- Examination of the neck and its structures

Should demonstrate and perform various therapeutic skills related to the speciality such as :

- Tracheostomy
- Anterior/ posterior nasal packing
- Ear Packing and Syringing
- Foreign body removal from air nose and throat
- Airway management including basic life support skills, Cardiopulmonary resuscitation, intubation, homeostasis maintenance, IV alimentation and fluid, electrolyte maintenance and principles of blood transfusion alimentation including Nasogastric feeding, gastrostomy
- Wound suturing, dressings and care of the wounds
- Basic principles of rehabilitation
- common procedures like FNAC, biopsy, aspiration from serous cavities, lumber puncture etc.

Should understand principles of and interpret X-rays/CT/MRI, audiograms, ENG, BERA, OAE, ultrasonographic abnormalities and other diagnostic procedures in relation to the speciality

Should have observed/performed under supervision the various surgical procedures in relation to the speciality

IV. SYLLABUS

The Minimum syllabus is as per the standard guidelines of Medical Council of India and the reference text book for the syllabus is scott-brown's Otolaryngology, head and neck surgery 7th Edition along with other reference books and journals.

Although the syllabus has been tried best possible to define paper wise maximally but still certain questions may overlap in any of the four papers. These are the general guidelines for the students but the students are suppose to know everything during each paper.

Paper-I: Basic Sciences related to ENT

1. Anatomy of Ear, Nose and oral cavity and pharynx, parapharyngeal and retropharyngeal space, larynx, Tracheobronchial tree and esophagus, and mediastinum, salivary glands, thyroid and parathyroid glands, facial skeleton, head and neck, brain and cranial nerves and base skull (including developmental anatomy and histology).
2. Physiology of hearing, equilibrium, olfaction, respiration, salivation, diglutation (swallowing), phonation and lacrimation, taste, coughing and sneezing, thyroid and parathyroid glands
3. Physiology of brain in relation to special senses except vision
4. Lymphoepithelial system, immunology and genetics
5. Neurophysiology and topographic tests of facial nerve
6. Use of teaching aids, learning teaching methods, assessment methods
7. Imaging methods in ENT.

Paper II: Principles and Practices of Otolaryngology, Audiology and Speech Therapy

1. Bacteriology in relation to Otorhinolaryngology
2. Audiometric tests like pure tone Audiometry, Impedance Audiometry, Free field Audiometry, Specialized tests of hearing including SISI, Tone decay, ABLB, Speech discrimination score etc.
3. Vestibular tests like caloric testing (Water and Air) stopping test, Fukuda's test,
4. Evoked response audiometry
5. Indications and various techniques of direct laryngoscopy, nasal endoscopy, Bronchoscopy and oesophagoscopy, including microlaryngoscopic procedures.
6. Reading of radiograms, scans, audiograms, nystagmograms and tympanograms in connection with ENT diseases/disorders.

Ear:

1. Affections of external ear
2. Congenital conditions of the ear
3. Traumatic conductive deafness
4. Fracture of temporal bone and CSF otorrhoea
5. Acute inflammation of the middle ear cleft
6. Non-suppurative otitis media and Otitis media with effusion and adhesive otitis media
7. Chronic suppurative otitis media
8. Management of chronic suppurative otitis media
9. Complications of infections of middle ear.
10. Tumors of the middle ear cleft and temporal bone
11. Diseases of the otic capsule-otosclerosis
12. Diseases of the otic capsule-other diseases
13. The deaf child, causes, syndrome, assessment, and rehabilitation
14. Deafness
15. Otalgia
16. Audiology (Paediatric and Adult)
17. Tinnitus
18. Acoustic neuroma and other cerebellopontine angle tumours.
19. Ototoxicity
20. Presbycusis

21. Diagnosis and management of sudden and fluctuant sensorineural hearing loss
22. Meniere's disease
23. Vertigo, vestibular disorder in children and adult
24. Diseases of Facial nerve
25. Rehabilitation of adults with acquired Hearing loss-Hearing aids
26. The cochlear Implants
27. Nystagmus
28. Noise induced hearing loss
29. Jugular foramena lesions
30. Petrous apex lesions
31. Tumours of facial Nerve
32. Retor cochlear lesions

Nose:

1. Conditions of the external nose
2. Injuries of the facial skeleton
3. CSF rhinorrhea
4. Congenital diseases of the nose
5. The nasal septum
6. Foreign bodies in the nose, rhinolith
7. Epistaxis
8. Acute chronic inflammations of the nasal cavities
9. Atrophic rhinitis
10. Angiofibroma
11. Vasomotor rhinitis-allergic and non-allergic
12. Occupational rhinitis
13. Food allergy and intolerance
14. Nasal polyposis
15. Abnormalities of smell
16. Acute sinusitis
17. Chronic sinusitis
18. Complications of acute and chronic sinusitis
19. Tumors of nose and sinuses
20. Facial pains
21. Granulomatous lesions of nose
22. Non healing graulomas
23. Nasal Endoscopy
24. Mucocele
25. Management of Enlarged turbinates
26. Orbital and optic nerve decompressions
27. Dacro cysto rhinostomy

Throat:

1. Congenital diseases of oral cavity, pharynx and larynx
2. Diseases of the mouth
3. Diseases of the salivary glands
4. Pharyngeal lesions associated with general diseases
5. Diseases of the tonsils, adenoids and pharynx
6. Tumors of oral cavity, pharynx, larynx, salivary glands, thyroid gland
7. Hypopharyngeal diverticulum (Pharyngeal Pouch)
8. Inflammatory and Infectious Diseases of larynx

9. Laryngeal disorders in singers and other voice users
10. Professional voice
11. Neurological affections of larynx and pharynx
12. Tumours of Infratemporal fossa and Parapharyngeal space
13. Cysts, granulomas and tumours of Jaw
14. Diseases of Esophagus
15. Management of secondaries in neck
16. Dysphagia
17. Abnormalities of taste
18. Benign diseases of neck and neck trauma
19. Juvenile recurrent laryngeal papillomatosis
20. Branchial cleft anomalies, thyroglossal and fistulae and lymphangeomas
21. Speechand language disorder in children
22. Craniofacial anomalies
23. Cervico facial infections in children and adult
24. Obstructive sleep apnoea syndrome and snoring
25. Stridor
26. Intubation of the larynx, laryngotomy and tracheostomy
27. Diseases of esophagus in children, gastroesophageal reflux disorders and aspiration problems
28. Paediatric otolaryngology
    - Approach and assessment of paediatric ENT patients
    - Congenital and acquired diseases in paediatric ENT
    - Rehabilitation of paediatric patient with debilatiting conditions like deaf child, long standing tracheostomised child, chreneofacial anomalies

Paper III: Recent advances in otolaryngology, Head and Neck Surgery

1. Recent developments in the diagnosis, pathogenesis and treatment of the ENT diseases
2. The knowledge of the frontiers of the oto-laryngology and lateral skull base surgery
3. Rhinoplasty, endoscopic sinus surgery, and anterior and middle cranial fossa surgery
4. Knowledge of LASERS and fibre optics
5. Other methods of managing Hearing loss Implantable hearing aids cochlear implants
6. Phonosurgery and laryngeal framework surgery
7. Etiology and Management of sleep apnoea/snoring
8. Hypophysectomy and optic nerve decompressions
9. Immunotherapy and modalities of the gene therapy
10. Principles of Radiotherapy
11. Newer techniques for Radiotherapy including, use of gamma knife for treatment of Intracranial tumors and other malignanacy
12. Chemotherapy of cancer
13. Head and neck manifestation of endocrine diseases
14. Manifestation of pituatory disorder in relations of ENT
15. Principles of laser surgery
16. Medical Negligence and bioethics in ENT
17. Intensive, emergency and terminal care management
18. Hypophysectomy

19. Skin grafts in Otolaryngology and reconstructive methods including regional and distant flaps for repair of defects after excision of tumors or trauma
20. Micro laryngeal surgery/thyroplasty
21. Base Skull Surgery
22. Anterior and antrolateral skull base & craniofacial surgery
23. Electro nystagmograms
24. Principles of Cancer immunology in reference to head and neck
25. Tumour Markers
26. Traumatic lesions of the inner ear
27. Surgery of pterygopalatine fossa
28. Statistics
29. Recent advances in technology
    1. Functional MRI
    2. PET
    3. Image guided surgery
    4. USG in ENT
    5. Interventional technique
    6. Electro physiology
    7. Optical coherence tomography
    8. Contact Endoscopy

Paper IV: General Surgical Principles and Head-Neck Surgery

1. General Surgery, Head and Neck oncology, and Medicine as applicable to the ENT disorders/diseases.
2. Surgery of congenital deformities of nose, ear (Pinna) and trachea/oesophagus etc.
3. Radiology, Imaging – computed tomography and magnetic resonance imaging, (MRI) and intervention radiology and angiography as related to ENT
4. General Pathologic aspects such as wound healing and also pathology and Pathogenesis of ENT diseases, Pharmacology, molecular biology, genetics, cytology, haematology, and immunology as applicable to otolaryngology
5. General Principles of faciomaxillary traumatology and neck injury
6. Plastic Surgery of head and neck[8]
7. Biomaterials
8. Anaesthesia in ENT and Head and Neck Surgery
9. Head and Neck reconstructive surgery
10. Haematology in relation to Otolaryngology
11. Pharmacology of drugs used in ENT
12. Electrolyte, fluid balance/shock conditions
13. Cell biology and wound healing
14. All ENT Surgeries and Endoscopic procedures

Miscellaneous and head and neck:

1. Cranial nerves
2. Raised intracranial tension-causes, diagnosis, management with particular reference to otitis hydrocephalus
3. Head injuries and I.C. Haemorrhage
4. Pituitary gland, anatomy, physiology hypo - and hyper - pituitarism, new growths.
5. Intracranial venous sinuses and their affections
6. Osteology: skull, mandible cervical and thoracic vertebral sternum

7. Cervical fascia, facial spaces in neck, retro-pharyngeal and parapharyngeal Abscesses
8. Anatomy and physiology of thyroid gland, goitre, diseases of the thyroid and carcinoma of thyroid
9. Large blood vessels in neck, thoracic duck development of major cervical and thoracic blood vessels.
10. Head and neck reconstructive surgery

Drugs used in ENT:

1. Antibiotics Antihistaminic
2. Nasal vasoconstrictors
3. Local anaesthetics
4. Corticosteroids
5. Cyto-toxic agents
5. Antibiotics
6. Radioactive isotopes
7. Antifungal agents
8. Vasopressive and other agents used in shock like states.

General:

1. Physiology of circulation, regulation of blood pressure, reactions of body to haemorrhage, patho-physiology of shock, fluid balance, blood transfusion and its hazards, fluid replacement therapy, burns
2. Agents used in shock like states

Desirable

1. The ears and nasal sinuses in the aerospace environment
2. Physiological consideration of pressure effects on the ear and sinuses in deep water diving
3. The principles of cancer immunology with particular reference to head and neck cancer
4. Principles of chemotherapy in head and neck cancer
5. Recording of nystagmus by ENG and its interpretation

Ear:

1. Traumatic lesions of the inner ear
2. Inflammatory lesions of the vestibular and auditory nerve
3. Vascular lesions of the inner ear
4. Electronystagmography
5. Skull base/Neurologic surgery

Nose:

1. Cosmetic surgery of the nose
2. Non-healing granuloma of the nose
3. Surgery of the pterygopalatine fossa
4. LASER Surgery

Throat:

1. Oesophageal conditions in the practice of ear, nose and throat surgery
2. Disorders of speech
3. Lower respiratory conditions in Otolaryngology

Miscellaneous and head and neck

1. Functional Anatomy of cerebellum and brainstem
2. Anatomy of mediastinum
3. Pleura, plural cavity, broncho-pulmonary segments and their clinical importance
4. Facial plastic surgery

V. TEACHING AND LEARNING METHODS

Teaching methodology

Didactic lectures are of least importance; small group discussion such as seminars, journal clubs, symposia, reviews and guest lectures should get priority for theoretical knowledge. Bedside teaching, grand rounds, structured interactive group discussions and clinical demonstrations should be the hallmark of clinical/practical learning with appropriate emphasis on e-learning. Student should have hand-on training in performing various procedures and ability to interpret various tests/investigations. Exposure to newer specialized diagnostic/therapeutic procedures concerning her/his subject should be given. Self-learning tools like assignments and case-based learning may be promoted. Exposure to newer specialized diagnostic/therapeutic procedures concerning ENT should be given.

1. **Rotations:**
   A major portion of posting should be in ENT Department. It should include in-patients, out-patients, ICU, trauma, emergency room, specialty clinics includingVertigo Clinic, Rhinology Clinic, Otology Clinic, Cancer Clinic, Cadaveric dissection Lab, Audiology and speech therapy.
   Inter-unit rotation in the department should be done for a period of up to one year.
   Rotation in appropriate related subspecialties for a total period not exceeding 06 months.

2. **Clinical meetings:**
   There should be intra- and inter- departmental meetings for discussing the uncommon /interesting cases involving multiple departments.

3. **Log book:** Each student must be asked to present a specified number of cases for clinical discussion, perform procedures/tests/operations/present seminars/review articles from various journals in inter-unit/interdepartmental teaching sessions. They should be entered in a Log Book. The Log books shall be checked and assessed periodically by the faculty members imparting the training.

4. **Thesis writing and research:** Thesis writing is compulsory.
5. The postgraduate students shall be required to participate in the teaching and training programme of undergraduate students and interns.
   6. A postgraduate student of a postgraduate degree course in broad specialities/super specialities would be required to present one poster presentation, to read one paper at a national/state conference and to present one research paper which should be published/accepted for publication/sent for publication during the period of his postgraduate studies so as to make him eligible to appear at the postgraduate degree examination.

7. The student should know the basic concepts of research methodology, plan a research project, be able to retrieve information from the library. The student should have a basic knowledge of statistics.

8. Department should encourage e-learning activities.

During the training programme, patient safety is of paramount importance; therefore, skills are to be learnt initially on the models, later to be performed under supervision followed by performing independently; for this purpose, provision of surgical skills laboratories in the medical colleges is mandatory.

VI. ASSESSMENT

Assessment should be comprehensive & objective. It should address the stated competencies of the course. The assessment needs to be spread over the duration of the course.

FORMATIVE ASSESSMENT, i.e., assessment during the training would include: Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self directed learning and ability to practice in the system.

General Principles

Internal Assessment should be frequent, cover all domains of learning and used to provide feedback to improve learning; it should also cover professionalism and communication skills. The Internal Assessment should be conducted in theory and clinical examination.

Quarterly assessment during the MS training should be based on following educational activities:

1. **Journal based / recent advances learning**
2. **Patient based /Laboratory or Skill based learning**
3. **Self directed learning and teaching**
4. **Departmental and interdepartmental learning activity**
5. **External and Outreach Activities / CMEs**

The student to be assessed periodically as per categories listed in postgraduate student appraisal form (Annexure I).

SUMMATIVE ASSESSMENT ie.,at the end of the training

The summative examination would be carried out as per the Rules given in POSTGRADUATE MEDICAL EDUCATION REGULATIONS, 2000.

The examination will be in three parts:

1. **Thesis**

Every post graduate student shall carry out work on an assigned research project under the guidance of a recognised Post Graduate Teacher, the result of which shall be written up and submitted in the form of a Thesis. Work for writing the Thesis is aimed at contributing to the development of a spirit of enquiry, besides exposing the candidate to the techniques of research, critical analysis, acquaintance with the latest advances in medical science and the manner of identifying and consulting available literature.

Thesis shall be submitted at least six months before the Theory and Clinical / Practical examination. The thesis shall be examined by a minimum of three examiners; one internal and two external examiners, who shall not be the examiners for Theory and Clinical examination. A candidate shall be allowed to appear for the Theory and Practical/Clinical examination only after the acceptance of the Thesis by the examiners.

2. Theory

The examinations shall be organised on the basis of 'Grading'or 'Marking system' to evaluate and to certify candidate's level of knowledge, skill and competence at the end of the training. Obtaining a minimum of 50% marks in 'Theory' as well as 'Practical' separately shall be mandatory for passing examination as a whole. The examination for MS shall be held at the end of 3rd academic year. An academic term shall mean six month's training period.

Theory shall consist of four papers of 3 hours each.

Paper I: Basic Sciences related Otolaryngology
Paper II: Principles and Practices of Otolaryngology
Paper III: Recent advances in Otolaryngology and Head Neck surgery.
Paper IV: General Surgical Principles and Head-Neck Surgery.

3. Clinical / Practical and viva voce Examination

Clinical examination shall be conducted to test the knowledge, skills, attitude and competence of the post graduate students for undertaking independent work as a specialist/teacher, for which post graduate students shall examine a minimum one long case and two short cases.

The Oral examination shall be thorough and shall aim at assessing the post graduate student's knowledge and competence about the subject, investigative procedures, therapeutic technique and other aspects of the specialty, which form a part of the examination.

Assessment may include Objective Structured Clinical Examination (OSCE).

Oral/Viva-voce examination needs to assess knowledge on X-rays, instrumentation, operative procedures. Due weightage should be given to Log Book Records and day-to-day observation during the training.

THEORY PAPER SETTING PATTERN :

Pattern : 4 papers of 100 marks each (I,II,III & IV)

Each papers shall have 4 questions.

Que – 1 – Long Answer	**- 20 Marks**
Que – 2 – Long Answer	**- 20 Marks**
Que – 3 – Write short answer on (10 x 6)	**- 60 Marks**

PATTERN OF PRACTICAL EXAMINATION

Otorhinolaryngology (ENT) Examination : Total 400 Marks

1.	**One Long cases**	**: 100 Marks**
2.	**Two Short Case (50 Marks Each)**	**: 100 Marks**
3.	**Osteology**	**: 20 Marks**
4.	**X-rays**	**: 40 Marks**
5.	**Instruments**	**: 40 Marks**
6.	**Audiology**	**: 20 Marks**
7.	**Drugs**	**: 20 Marks**
8.	**Specimen**	**: 20 Marks**
9.	**Surgical Procedures**	**: 40 Marks**
	Total	**: 400 Marks**

Practicals will also include objective structured clinical examination

Theory + Practical Grand Total : 800 Marks

VII. MANDATORY COMPLIANCE

1	The Model Weekly Time Table for Teaching learning activities is enclosed as	**:**	**Annexure – I**
2	Mandatory compliance of a PG student in T.L. process and CIA during the three year of study are given in	**:**	**Annexure – II**
3	The units for Quarterly assessment for CIA is given in	**:**	**Annexure – III**
4	Post Graduate student Quarterly Appraisal form for CIA is enclosed as	**:**	**Annexure – IV**
5	Mandatory Requirements to be eligible to appear for the University Summative Evaluation Examination is given in	**:**	**Annexure – V**
6	The Proforma of the Certificate on Attendance, Training Completion, Publication and Presentation Research / Poster / oral submission of Dissertation and present of all theory practical fee to be duly filled in and duly signed by PG Guide HOD, Finance Officer, Dean of faculty an HOI to be submitted to university COE before the issue of Hall Ticket for final exam is given us	**:**	**Annexure – VI**
7	The model QP pattern of paper I/II/III/IV, each of 100 marks and of 3 hours duration is enclosed as	**:**	**Annexure – VII**

8 The model Blue print for setting of Question papers and proper verbs/ phrases to be used in QP setting is given in **: Annexure – VIII**

9 The model marks list for practical and Vivavoce for PG medical MD/MS/ examination is enclosed as**.** **: Annexure – IX**

VIII. RECOMMENDED READING:

Books (latest edition)

a. Scott-Brown's Otorhinolaryngology and Head and Neck Surgery
b. Cummings Otolaryngology - Head and Neck Surgery
c. Otolaryngology, Otology &Neurotalogy by Paprella&Micheal
d. Glasscock-Shambaugh'sSurgery of the Ear
e. Essentials of Functional Sinus Surgery by Heinz Stammberger MD Color
f. Atlas of Head & Neck Surgery by Jatin P Shah
g. Handbook of Clinical Audiologyby Jack Katz
h. Stell& Maran's Textbook of Head and Neck Surgery and Oncology

Journals

03-05 international Journals and 02 national (all indexed) journals

Recommended National Journals are

- Indian Journal of Otorhinolaryngology and head and neck surgery
- Odisha Journal of Otorhinolaryngology and head and neck surgery
- Indian Journal of Otology

International Journals

- Journal of laryngology and otology (JLO)
- Anals of Otorhinolaryngology
- Archieves of Otorhinolaryngology
- Laryngoscope
- Otorhinolaryngology clinics of north America

Attached Annexure I and II

Annexure - I

P.G. Teaching Time Table – Model

Clinical postings (OPD – IPD Duties Ward Rounds, Casualty posting, ICU posting, posting to support Departments like Radiology, Anesthesia CCL , Pathology, FMT, Postings to field work and PHCs Camps and other postings as per provisions of MCI, are mandatory on all week Day as per posting.

Day of the week	Time 03 to 5 PM
Monday	Journal Club
Tuesday	Case presentation / Micro Clinic- Patient based Training
Wednesday	Seminar / GD / Panel Discussion
Thursday	Lecture by Faculty on select Topics
Friday	Clinical Meet / CPC / CME
Saturday	Guest Lecture by Experts / Skill Lab or Simulation Lab
Sunday (Select ones)	Medical Camps / Blood Donation Camp / Other types of Camps

Note

1. The Dept may select suitable days for a particular task assigned. But all of 7 tasks per week are a must
2. All the PG Teachers, PG students must attend these PG TLE Activities.

3. Attendance for these activities shall be maintained at the Department and Institutions. Implementation of the MCI Regulations, Syllabus and Time Table is the responsibility of HOD / HOI.

HOD HOI DEAN OF FACULTY REGISTRAR

Annexure – II

Mandatory Compliance of a PG student in Teaching – Learning Activities
As per MCI Regulations Syllabus and Advisory

Sr. No.		Activities to be carried at by a PG student	Number per Ist year (Minimum)	Number Per IInd Year (Minimum)	Number per IIIrd year (Minimum)	Total Number (Minimum) For 3 years
1		Presentation of Journal Articles in Journal club	12	12	6	30
2	a	Case Presentation / Clinic	4	8	8	20
	b	Skill Lab & Simulation	4	4	4	12
3	a	Presentation of Seminars	4	4	4	12
	b	Leading a Group Discussion on a select Topic	4	4	4	12
	c	Assignment submission	4	4	4	12
4	a	Lectures / Tutorials to UG students /panel Discussion	4	4	4	12
	b	Clinical meeting CMC/ CPC	12	12	12	36
	c	BLS	1	--	--	1
	d	ACLS	1	--	--	1
5		Medical Camps Health Checkup at Villages / Schools/ Blood Donation / etc.	6	6	6	18
6	a	Orientation Programme	1	1	1	3
	b	Research Methodology Workshop	1	--	--	1
	C	Presentation of synopsis of the Thesis / Dissertation	1	--	--	1
	d	Presentation of Mid Term work of Thesis / Dissertation	--	1	--	1
	e	Presentation of final Draft of Dissertation / Thesis	--	--	1	1
	f	Presentation of Research Article	--	0 or 1	0 or 1	1
	g	Publication of an Article	--	0 or 1	0 or 1	1 or 2
7		LOG Book	1 (a)	1 (b)	1 (c)	1 a+b+c
8		CIA	4	4	4	12
9		Any other Activity Specified by Dept.				

Note :- 1. The Department may conduct periodic preparatory tests in Theory / Practical/Clinicals and Vivavoce. Quiz and MCQ test may to be adopted

2. The 12th CIA may also include a preparation examination on the model of university examination as a training cum assessment

HOD HOI DEAN OF FACULTY REGISTRAR

Annexure – III

Units of Quarterly Assessment of Every student (Internal)

Formative Assessment – Quarterly Assessment (Total 12 CIAs)

As per Annexure III.

1. **Journal Based / Recent Advances learning**
   (Bases on Journal Clubs / Select Article Presentation , Review Article preparation and presentation)
2. **Patient Based and Laboratory Based and skill Based learning**
   (Based on clinical Posting – OPD / IPD Ward Rounds/ casualty/ Case Examination/ presentation /Diagnosis / Interpretation /of Clinical Diagnostics/ Differential Diagnosis, Prognosis/ Morbidity/ Mortality/ Community Medicine/ Promotion/ prevention/ Control/ Prophylaxis/ Epidemiology/ Simulation Studies/ Skill Based Studies and so on)
3. **Self Directed Learning and Teaching**
   (Seminars Panel Discussion Group Discussion, Assignments, Case studies, Preparation of Charts and Models etc. , Role Play, Debates, Moot courts, etc)
4. **Departmental and Inter Departmental Learning Activities.**
   (Participation in UG/PG teaching / Horizontal and Vertical Integrated Lectures, Clinical meeting / CPC / CME)
5. **External and out research Activities**
   (Participation in Camps, Posting and Visit to PHCs, Satellite clinics, Mobile Clinics, Health checkup Camps, Blood Donation Camps, Immunization Camps school Visits. Crisis / Disaster Management, Celebration of Commemorative Days and soon)
6. Thesis / Dissertation Research Work related to selected Topic
7. a) Log Book maintenance/ Portfolio management - To maintain LOG Book or portfolio management of all the TL Activities
   b) Presentation / Publications of Research Article

No.		Particulars	Minimum for 3 months
1		Journal based Recent Advance Learning- Presentation of select Article in Journal clubs	3
2	a	Patient Based laboratory or Skill based learning- Case presentation / Clinic	1 (1st year) 2 (2nd & 3rd year)
	b	Skill Lab / Simulation Lab Work	1
3	a	Self Directed Learning & Teaching- Presentation of Seminar	1
	b	Leading a Group Discussion on select Topic in GD	1
	c	Assignment Submission	1
4	a	Lecture / Tutorials / Panel Discussions with UG students	1
	b	Clinical Meetings (CME's) CPC/Dept. meeting	3
5		Medical Camps	1
6		Dissertation Work Research methodology workshop	Yes / No
7		Log Book & Attendance	Yes / No
8		Any other Activity Prescribed (T/P/Viva)	Yes / No

HOD HOI DEAN OF FACULTY REGISTRAR

Annexure IV

Postgraduate Students Appraisal Form
Pre / Para /Clinical Disciplines – MD/MS Degree

Name of the Department/Unit : **Roll No.:**
Name of the PG Student :
Period of Training : FROM……TO……
Quarterly Assessment (1/2/3/4/5/6/7/8/9/10/11/12)

Sr. No.	PARTICULARS	Not Satisfactory			Satisfactory			More Than Satisfactory			Remarks
		1	2	3	4	5	6	7	8	9	
1.	Journal based / Recent advances learning										
2.	Patient based/Laboratory or Skill based learning										
3.	Self-directed learning and teaching										
4.	Departmental and interdepartmental learning activity										
5.	External and Outreach Activities / CMEs										
6.	Thesis / Research work										
7.	Log Book Maintenance										
8.	Performance in Theory/Practical/Viva voce Tests										
	Overall Assessment										

- **Publications of Research Article Yes/ No**
- **Presentation of Research Article**
- **The student has complied with mandatory requirement for quarterly assessment & presentation of Research Profile Yes/No**

Remarks*_____
_____
_____

***REMARKS: Any significant positive or negative attributes of a postgraduate student to be mentioned. For score less than 4 in any category, remediation must be suggested. Individual feedback to postgraduate student is strongly recommended.**

SIGNATURE OF ASSESSEE **SIGNATURE OF HOD**

HEAD OF THE INSTITUTION

Annexure - V

Mandatory Requirements to be eligible to eligible to appear for university Summative Examination / Evaluation – As per MCI Regulations.

(As per MCI Medical Education Regulation 2000, amended from time to time till date)

1. Minimum percent of Attence as per MCI Regulations.
2. Satisfactory performance in 12 CIA conducted and certified by HOD HOI and PG Guide.
3. Certificate from F.O. stating that all the fees due from the student are paid and credited to PIMS-DU A/.c
4. Presentation of a Research Article / Poster in a national / state level conference /Seminar / Workshop.
5. Publication of a Research Articles as first – author in (indexed in supus or web of science or as fixe by MCI Regulations and visited by UGC (ARE list).
6. a) Thesis – Finalisation of Topic and Title – submission of Synopsis following IEC clearance within 6 months of Adm. Topics
   b) After II year of a Admission or 3 terms Midterm Review .
   c) Thesis to be submitted at least 6 months before final examination.
   d)Thesis to be examined by 3 Examiners. (1 Internal and 2 External PG Examiners)
   e) Its Acceptance is a must for appearing for University T & P Exam

Note :- HOD & HOI shall ensure provisions of 1,2,3,4,5,6 a,b,c. The COE shall ensure provisions of 1,2,3,4,5,6 a,b,c ,d,e & e as per MCI Regulations

HEAD OF DEPARTMENT **HEAD OF INSTITUTION** **DEAN OF FACULTY** **REGISTRAR**

Annexure - VI

Ref. No. Date: _____

Complaince to MCI's Regulations Governing Post Graduate Programme in Medical Faculty

Department of _____ PG Programme: MD/ MS in _____

Name of Candidate: _____, JR-III

PRN No. _____ Date of Admission _____

Certification on
Attendance and Training Completion
Publication & Presentation of Research Articles (Poster/ Oral)
Submission of Dissertation & Payment of All types of prescribed fees

It is hereby certified that the said candidate JR-III in the Dept. of _____ at Rural Medical College has completed 6 academic terms/ 3 academic years and fulfilled the prevailing provisions of the MCI Regulations governing MD/MS PG programmes and the rules of PMT, PIMS-DU. Details are as under.

1.	**Attendance Fulfillment ***	**% Attendance**	**Remark – Eligibility**
	I Academic Term		
	II Academic Term		
	III Academic Term		
	IV Academic Term		
	V Academic Term		
	VI Academic Term		
	Overall fulfillment		Fulfilled / Not Fulfilled
	* Fulfillment of a minimum of 80% of attendance/ academic term, for 6 terms/ 3 years including imparted training, assignment, fulltime responsibilities and participation in all facets of PG education process including periodic assessment and so on as per MCI Regulations.		
2.	Log Book maintained as per MCI Regulations & Fulfilled the graded responsibilities in the management and treatment of patients entrusted for their care Verified by Dr. _____ Certified by Dr. _____		Yes/ No
3.	Successful participation in teaching and training programmes organized by the department for UG and Interns		
4.	Presented and Participated in Seminars, Journal Clubs, Case Presentations, Group Discussions, Clinical Meetings, CME Ward Round, CPC, Practicals organized by the Department as per the timetable.		
5.	Participated in training sessions in diagnostics, medical/ surgical training, in basic/ applied medical and allied clinical specialties and Medical Camps as per the timetable		
6.	The Performance of the PG students in 12 CIAs (Conducted quarterly) are		

	satisfactory as per appraisal proforma as per MCI Regulations.	
7.	Presented one research poster and one research article (oral) in a Seminar/ Symposia/ Workshop/ Conference (National/State). The certificates for presentation of paper/ poster are enclosed.	
8.	Published one research article in a scientific journal as per norms. The copy of the published research article is enclosed.	
9.	Submitted a Dissertation entitled _____ _____ _____ _____ under the guidance of Dr. _____	
10.	Paid all the fees (tution fees and other fees) vide receipt No._____ for all 3 years.	
11.	Produced NOC from all the sections of PMT PIMS-DU concerned about "NO DUES"	
12.	Paid Examination fees of Rs. _____ vide Challan/ Receipt No. _____ dated _____ issued by Finance Officer PIMS-DU.	

It is hereby declared that the all the duly certified and verified documents, related to the aspects mentioned above, are in the custody of department concerned and student section of Rural Medical College with due authentication and signature of concerned HOD/ Dean/ Principal/ Dean of Faculty) and will be made available for any MCI inspection as per norms and Regulations.
Accordingly He/She is eligible/ not eligible for appearing in final year PG examination as per the MCI Regulations governing PG Programmes.

PG Guide
Dr. _____

Seal

Head of the Department
Dr. _____

Verified and certified that all types of prescribed fees and fines PMT, PIMS-DU, College, Hostel & Others mentioned at sl.no. 10, 11, 12 are paid by the student and credited to the accounts of PMT & PIMS-DU.

Seal

Finance Officer
PIMS-DU

Verified the relevant documents and certify that the candidate is eligible to appear for final year PG Examination as per MCI Regulations and rules of PIMS-DU.

Dean
Faculty of Medicine

Seal

Dean
Rural Medical College

Ref_____ **For Officer Use Only** Date: _____

The HOD, HOI and Dean have certified that the

a. Candidate is eligible to appear for PG Theory and Practical/ Clinical Examination as per MCI Regulations. F.O. has certified that all the fees has been credited to PMT, PIMS-DU Accounts.
b. The Dissertation submitted has been evaluated by external examiners and then have approved the same for acceptance as per MCI Regulations.
c. Hence the candidate be permitted to appear for the PG examinations (Theory & Practical/ Clinical) scheduled in the month of _____ year _____.

Controller of Examinations

Seal

Submitted for perusal and approval

Vice Chancellor

Annexure – VII

PRAVARA INSTITUTE OF MEDICAL SCIENCES
(Deemed to be University)

Post Graduate Degree in Otorhinolaryngology (ENT) (MD)

Examination _____ 20__

Paper – I/ II/ II/ IV

Paper Title : _____ Date: / /20

Marks : 100 Time:

Instructions to candidate:

1) All questions are compulsory
2) Answer written in illegible handwriting will not be assessed.
3) Write answers on both sides of answer paper.
4) Neat diagrams must be drawn wherever necessary.
5) Write prescription where indicated, and in the use of drugs their doses should be given.

Que. 1 Marks 20

Que. 2 Marks 20

Que. 3 Write Short notes on Marks 60 (10x6)

a

b

c

d

e

f

Annexure – VIII

Table 1: Showing BLUEPRINTING for theory paper setting

The number of Questions & their distribution of marks shall be as per MCI model Question Paper [only Illustration]

LAQ/ SAQ and their Marks

LEVEL	Q	Q	Q	Q	Q	Q	Q	Total
	Mark	Mark	Mark	Mark	Mark	Mark	Mark	
Knowledge								
Comprehension								
Application								
Analysis								
synthesis								
Evaluation								
TOTAL								**1000**

The Questions (Whether LAQ or SAQ) Must aim at assessing all the 6 domains

Note: This is only an illustration. Actual Number of Questions and their distribution of marks shall be as per model Question Paper of MCI. (i.e. regarding the number of LAQ / SAQ and their marks distribution)

Table 2: Showing appropriate verbs suitable to level of knowledge for theory paper setting

Level	Suggested Verbs
Knowledge	Define, Describe, Draw, Find, Enumerate, Cite, Name, Identify, List, label, Match, Sequence, Write, State
Comprehension	Discuss, Conclude, Articulate, Associate, Estimate, Rearrange, Demonstrate understanding, Explain, Generalize, Identify, Illustrate, Interpret, Review, Summarize
Application	Apply, Choose, Compute, Modify, Solve, Prepare, Produce, Select, Show, Transfer, Use
Analysis	Analyze, Characterize, Classify, Compare, Contrast, Debate, Diagram, Differentiate, Distinguish, Relate, Categorize
Synthesis	Compose, Construct, Create, Verify, Determine, Design, Develop, Integrate, Organize, Plan, Produce, Propose, rewrite
Evaluation	Appraise, Assess, Conclude, Critic, Decide, Evaluate, judge, Justify, Predict, Prioritize, Prove, Rank

Table 3: Showing examples of theory questions

Sr. No.	Type	Explanation	Examples
1	**Long essay question**	✓ Question should pose clinical problem that will require student to apply knowledge along with integration with disciplines ✓ Avoid one liner as question ✓ Question stem should be structured ✓ Marking distribution should be provided ✓ Use of proper verbs from higher domains as given in this document ✓ Avoid recall based questions	
2	**Short notes**	✓ Sample a wider content ✓ Questions should be task oriented ✓ Reasoning questions provide opportunity for testing integration, clinical reasoning and analytical ability of the student	

Table 4: Showing Objective structured clinical examination [OSCE] typical station

Sr. No.	Type of station	Time allotted	Example	Evaluation
1	Procedure			
2	Response			

Annexure – IX

University Examination
Model Marks Sheet
For Practical / Clinical Examination and Viva voce

Duration _____ **Max Mark – 400**

Illustration only

No.	Type of Examination	Marks Allotted	Scored
1	Long Cases		
2	a) Short cases (No. of small cases and Marks for each cases) 1/2/3/4-------- b) Ward Round c) Any other		
3	Spotter / OSPE/ Oral / Vivavoce Sub Divisions i) iv) ii) v) iii) vi)		
	Ground Total	400	

PG Examiners		Name	Signature
1	Chairman Name		
2	Internal Examiner		
3	External Examiner		
4	External Examiner		

Date:-
Place :-

Note:- 1) The Number of cases, type of cases and type of practical and orals / vivavoce and their distributions of marks shall be as per MCI Regulations / Syllabi.

2) The HOD / Chairman / Co Chairman BOS shall ensure at this proforma is prepared as per the MCI Regulations / Syllabi.

Annexure – X

Syllabus[19]

As recommended by Medical Council of India

Course contents:

1. Anatomy and Physiology of Ear, Nose and Throat, Trachea and esophagus.
2. The generation and reception of speech
3. Radiographic anatomy of the ear, nose, throat and imaging.
4. Bacteriology in relation to Otorhinolaryngology
5. Allergy and rhinitis
6. Haematology in relation to Otolaryngology
7. Anaesthesia for Otolaryngology
8. Pharmacology of drugs used in ENT
9. Electrolyte, fluid balance/shock conditions
10. Use of teaching aids
11. Routine blood, urine testing
12. Preparation of slides
13. Facial nerve stimulation test
14. Audiometric tests like pure tone Audiometry, Impedance Audiometry, Free field Audiometry, Specialized tests of hearing including SISI, Tone decay, ABLB, Speech discrimination score etc.
15. Vestibular tests like caloric testing (Water and Air) stopping test, Fukuda's test,
16. Evoked response audiometry.

Ear:

1. The physical and functional examination of the ear
2. The functional and physical examination of the vestibular system.
3. Tinnitus
4. Affections of external ear
5. Repair of deformities of the external ear.
6. Congenital conditions of the middle ear cleft
7. Traumatic conductive deafness
8. Acute inflammation of the middle ear cleft
9. Non-suppurative otitis media
10. Chronic suppurative otitis media
11. Management of chronic suppurative otitis media
12. Complications of infections of middle ear.
13. Tumors of the middle ear cleft and temporal bone
14. Diseases of the otic capsule-otosclerosis
15. Diseases of the otic capsule-other diseases
16. The deaf child
17. Acoustic neuroma
18. Ototoxicity
19. Presbycusis
20. Diagnosis and management of sudden and fluctuant sensorineural hearing loss

21. Meniere's disease
22. Neurologic aspects of vertigo
23. Facial paralysis
24. Rehabilitation of adults with acquired Hearing loss-Hearing aids
25. The cochlear Implants
26. Nystagmus
27. Otoacoustic emissions

Nose:

1. Examination of the nose
2. Conditions of the external nose
3. Injuries of the facial skeleton
4. Congenital diseases of the nose
5. The nasal septum
6. Foreign bodies in the nose, rhinolith
7. Epistaxis
8. Acute chronic inflammations of the nasal cavities
9. Vasomotor rhinitis-allergic and non-allergic
10. Nasal polyposis
11. Abnormalities of smell
12. Acute sinusitis
13. Chronic sinusitis
14. Nasal Allergy/Fungal allergic sinusitis
15. Complications of acute and chronic sinusitis
16. Tumors of nose and sinuses
17. Facial pains
18. Trans-ethmoidal hypophysectomy
19. Functional endoscopic sinus surgery (FESS)

Throat:

1. Methods of examination of the mouth and pharynx
2. Diseases of the mouth
3. Diseases of the salivary glands
4. Pharyngeal lesions associated with general diseases
5. Diseases of the tonsils and adenoids (excluding neoplasms)
6. Tumors of the pharynx
7. Hypopharyngeal diverticulum (Pharyngeal Pouch)
8. Methods of examining and larynx and tracheobronchial tree
9. Congenital diseases of the larynx
10. Laryngeal disorders in singers and other voice users
11. Neurological affections of larynx and pharynx
12. Intubation of the larynx, laryngotomy and tracheostomy
13. Cervical node dissection
14. Skin grafts in Otolaryngology and reconstructive methods including regional and distant flaps for repair of defects after excision of tumors or trauma.
15. Micro laryngeal surgery/thyroplasty

Miscellaneous and head and neck:

1. Cranial nerves
2. Raised intracranial tension-causes, diagnosis, management with particular reference to otitis hydrocephalus
3. Head injuries and I.C. Haemorrhage
4. Pituitary gland, anatomy, physiology hypo - and hyper - pituitarism, new growths.
5. Intracranial venous sinuses and their affections
6. Osteology: skull, mandible cervical and thoracic vertebral sternum
7. Cervical fascia, facial spaces in neck, retro-pharyngeal and parapharyngeal Abscesses
8. Anatomy and physiology of thyroid gland, goitre, diseases of the thyroid and carcinoma of thyroid
9. Large blood vessels in neck, thoracic duck development of major cervical and thoracic blood vessels.
10. Head and neck reconstructive surgery

Drugs used in ENT:

1. Antibiotics Antihistaminic
2. Nasal vasoconstrictors
3. Local anaesthetics
4. Corticosteroids Cyto-toxic agents
5. Antibiotics
6. Radioactive isotopes
7. Antifungal agents
8. Vasopressive and other agents used in shock like states.

General:

1. Physiology of circulation, regulation of blood pressure, reactions of body to haemorrhage, patho-physiology of shock, fluid balance, blood transfusion and its hazards, fluid replacement therapy, burns
2. Agents used in shock like states

Desirable

1. The ears and nasal sinuses in the aerospace environment
2. Physiological consideration of pressure effects on the ear and sinuses in deep water diving
3. The principles of cancer immunology with particular reference to head and neck cancer
4. Principles of chemotherapy in head and neck cancer
5. Recording of nystagmus by ENG and its interpretation

Ear:

1. Traumatic lesions of the inner ear
2. Inflammatory lesions of the vestibular and auditory nerve
3. Vascular lesions of the inner ear
4. Electronystagmography
5. Skull base/Neurologic surgery

Nose:

1. Cosmetic surgery of the nose
2. Non-healing granuloma of the nose

3. Surgery of the pterygopalatine fossa
4. LASER Surgery

Throat:

1. Oesophageal conditions in the practice of ear, nose and throat surgery
2. Disorders of speech
3. Lower respiratory conditions in Otolaryngology

Miscellaneous and head and neck

1. Functional Anatomy of cerebellum and brainstem
2. Anatomy of mediastinum
3. Pleura, plural cavity, broncho-pulmonary segments and their clinical importance
4. Facial plastic surgery

RECOMMENDATIONS

MCI has recommended subspeciality postings in rotations for less than 06 months which is very important for the students to learn not only speciality but also make them competent to learn orverall management of patient and all types of emergencies.

Training should be focused on competency based including all the domains hence student should be promoted to be trained through

- Surgical skill labs
- Cadivaric dissections
- Bed side learning and group discussion
- Attending CME, workshop, Guest lectures,[24]
- Feedback from the paramedical staff and patients and relatives
- Inter departmental integrated teaching is also very important
- Monitoring surgical and medical skills
- Also training in overall medicolegal aspects

Also training should be focused on attending rural health camps for interactive sessions with the group of community/society in relation to awareness of various preventable disease and promoting health care, awareness and knowledge and importance of national health program and early diagnosis of diseases.

Also non-medical people gradually can be trained through camps in approach to medical emergencies when immediately medical aid is not available.

The above parameters along with any upcoming parameters related to the training of post graduated students can be properly discussed, planned and implemented after recommendations in the Board of Studies and Academic Council of University.