UNIVERSITY RESIDENCY PROGRAM -2019 LOG BOOK FOR OTORHINOLARYNGOLOGY RAWALPINDI MEDICAL UNIVERSITY RAWALPINDI

“Wherever the art of Medicine is loved, there is also a love of Humanity.” — Hippocrates

PREFACE

The horizons of Medical Education are widening & there has been a steady rise of global interest in Post Graduate Medical Education, an increased awareness of the necessity for experience in education skills for all healthcare professionals and the need for some formal recognition of postgraduate training in Internal Medicine. We are seeing a rise in the uptake of places on postgraduate courses in medical education, more frequent issues of medical education journals and the further development of e-journals and other new online resources. There is therefore a need to provide active support in Post Graduate Medical Education for a larger, national group of colleagues in all specialties and at all stages of their personal professional development. If we were to formulate a statement of intent to explain the purpose of this log book, we might simply say that our aim is to help clinical colleagues to teach and to help students to learn in a better and advanced way. This book is a state of the art log book with representation of all activities of the MD Internal Medicine program at RMU.A summary of the curriculum is incorporated in the logbook for convenience of supervisors and residents. MD curriculum is based on six Core Competencies of ACGME (Accreditation Council for Graduate Medical Education) including Patient Care, Medical Knowledge, System Based Practice, Practice Based Learning, Professionalism, Interpersonal and Communication Skills. A perfect monitoring system of a training program including monitoring of teaching and learning strategies, assessment and Research Activities cannot be denied so we at RMU have incorporated evaluation by Quality Assurance Cell and its comments in the logbook in addition to evaluation by University Training Monitoring Cell (URTMC). Reflection of the supervisor in each and every section of the logbook has been made sure to ensure transparency in the training program. The mission of Rawalpindi Medical University is to improve the health of the communities and we serve through education, biomedical research and health care. As an integral part of this mission, importance of research culture and establishment of a comprehensive research structure and research curriculum for the residents has been formulated and a separate journal for research publications of residents is available.

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(Sitara-e-Imtiaz)

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Vice Chancellor Rawalpindi Medical University & Allied Hospitals

CONTRIBUTIONS

ENROLMENT DETAILS

Program of Admission _____

Session _____

Registration / Training Number _____

Name of Candidate _____

Father's Name _____

Date of Birth _____ / _____ / _____ CNIC No. _____

Present Address _____

_____

Permanent Address _____

_____

E-mail Address _____

Cell Phone _____

Date of Start of Training _____

Date of Completion of Training _____

Name of Supervisor _____

Designation of Supervisor _____

Qualification of Supervisor _____

Title of department / Unit _____

Name of Training Institute / Hospital _____

Sr. No	Discipline
1.	EAR
2.	NOSE
3.	Throat
4.	Head and neck
5.	General surgery
6.	Plastic surgery
7.	Neurosurgery
	Please write your discipline on the line below:

INTRODUCTION

It is a structured book in which certain types of educational activities and patient related information is recorded, usually by hand. Logbooks are used all over the world from undergraduate to postgraduate training, in human, veterinary and dental medicine, nursing schools and pharmacy, either in paper or electronic format .

Logbooks provide a clear setting of learning objectives and give trainees and clinical teachers a quick overview of the requirements of training and an idea of the learning progress. Logbooks are especially useful if different sites are involved in the training to set a (minimum) standard of training. Logbooks assist supervisors and trainees to see at one glance which learning objectives have not yet been accomplished and to set a learning plan. The analysis of logbooks can reveal weak points of training and can evaluate whether trainees have fulfilled the minimum requirements of training.

Logbooks facilitate communication between the trainee and clinical teacher. Logbooks help to structure and standardize learning in clinical settings. In contrast to portfolios, which focus on students' documentation and self-reflection of their learning activities, logbooks set clear learning objectives and help to structure the learning process in clinical settings and to ease communication between trainee and clinical teacher. To implement logbooks in clinical training successfully, logbooks have to be an integrated part of the curriculum and the daily routine on the ward. Continuous measures of quality management are necessary.

Reference

Brauns KS,Narciss E, Schneyinck C, Böhme K, Brüstle P, Holzmann UM, etal. Twelve tips for successfully implementing logbooks in

clinical training. Med Teach. 2016 Jun 2; 38(6): 564–569.

INDEX OF LOG:

MINIMUM LOG BOOK ENTERIES PER MONTH IN GENERAL

(This minimum number is being provided for uniformity of the training and convenience for monitoring of the resident's performance by Quality Assurance Cell & University Research Training & Monitoring Cell of RMU but resident is encouraged to show performance above this minimum required number)

SR.NO	ENTRY	Minimum cases /Time duration
01	Case presentation	01 per month
02	Topic presentation	01 per month
03	Journal club	01 per month
04	Bed side teaching	10 per month
05	Large group teaching	06 per month
06	Emergency cases	10 per month
07	OPD	50 per month
08	Indoor (patients allotted)	8 per month plus participation in daily Morning & Evening rounds
09	Directly observed procedures	6-10 per month
10	CPC	02 per month
11	Mortality & Morbidity meetings	02 per month

MISSION STATEMENT

The mission of Otorhinolaryngology Residency Program of Rawalpindi Medical University is:

1. To provide exemplary medical care, treating all patients who come before us with uncompromising dedication and skill.
2. To set and pursue the highest goals for ourselves as we learn the science, craft, and art of surgical skills.
3. To passionately teach our junior colleagues and students as we have been taught by those who preceded us.
4. To treat our colleagues and hospital staff with kindness, respect, generosity of spirit, and patience.
5. To foster the excellence and well-being of our residency program by generously offering our time, talent, and energy on its behalf.
6. To support and contribute to the research mission of our medical center, nation, and the world by pursuing new knowledge, whether at the bench or bedside.
7. To promote the translation of the latest scientific knowledge to the bedside to improve our understanding of disease pathogenesis and ensure that all patients receive the most scientifically appropriate and up to date care.
8. To promote responsible stewardship of medical resources by wisely selecting diagnostic tests and treatments, recognizing that our individual decisions impact not just our own patients, but patients everywhere.
9. To promote social justice by advocating for equitable health care, without regard to race, gender, sexual orientation, social status, or ability to pay.
10. To extend our talents outside the walls of our hospitals and clinics, to promote the health and well-being of communities, locally, nationally, and internationally.
11. To serve as proud ambassadors for the mission of the Rawalpindi Medical University MS Otorhinolaryngology Residency Program for the remainder of our professional lives.

CLINICAL COMPETENCIES FOR 1ST, 2ND, 3RD AND 4TH YEAR MD TRAINEES OTORHINOLARYNGOLOGY

CLINICAL COMPETENCIES\SKILL\PROCEDURE

The clinical competencies, a specialist must have, are varied and complex. A complete list of the skills necessary for trainees and trainers is given below. The level of competence to be achieved each year is specified according to the key, as follows:

1. Observer status
2. Assistant status
3. Performed under supervision
4. Performed under indirect supervision
5. Performed independently

Note: Levels 4 and 5 for practical purposes are almost synonymous

INTRODUCTION

Curriculum of MS at Rawalpindi Medical University is an important document that defines the educational goals of Residency Training Program and is intended to clarify the learning objectives for all inpatient and outpatient rotations. Program requirements are based on the ACGME (Accreditation Council for Graduate Medical Education) standards for categorical training in Otorhinolaryngology. Curriculum is based on 6 core competencies. Detail of these competencies is as follows

CORE COMPETENCIES

Details of the Six Core Competencies of Curriculum of MS OTORHINOLARNGOLOGY.

COMPETENCY NO. 1 PATIENT CARE (PC)

Gathers and synthesizes essential and accurate information to define each patient's clinical problem(s). (PC1)

- Collects accurate historical data
- o Uses physical exam to confirm history
- Does not relies exclusively on documentation of others to generate own database or differential diagnosis
- Consistently acquires accurate and relevant histories from patients
- Seeks and obtains data from secondary sources when needed
- Consistently performs accurate and appropriately thorough physical exams
- Uses collected data to define a patient's central clinical problem(s)
- Acquires accurate histories from patients in an efficient, prioritized, and hypothesis- driven fashion
- Performs accurate physical exams that are targeted to the patient's complaints
- Synthesizes data to generate a prioritized differential diagnosis and problem list
- Effectively uses history and physical examination skills to minimize the need for further diagnostic testing
- Obtains relevant historical subtleties, including sensitive information that informs the differential diagnosis
- Identifies subtle or unusual physical exam findings
- Efficiently utilizes all sources of secondary data to inform differential diagnosis
- Role models and teaches the effective use of history and physical examination skills to minimize the need for further diagnostic testing

Develops and achieves comprehensive management plan for each patient. (PC2)

- Care plans are consistently inappropriate or inaccurate
- Does not react to situations that require urgent or emergent care
- Does not seek additional guidance when needed Inconsistently develops an appropriate care plan
- Inconsistently seeks additional guidance when needed
- Consistently develops appropriate care plan
- Recognizes situations requiring urgent or emergent care
- Seeks additional guidance and/or consultation as appropriate
- Appropriately modifies care plans based on patient's clinical course, additional data, and patient preferences

- Recognizes disease presentations that deviate from common patterns and require complex decision- making
- Manages complex acute and chronic diseases
- Role models and teaches complex and patient-centered care
- Develops customized, prioritized care plans for the most complex patients, incorporating diagnostic uncertainty and cost effectiveness principles

Manages patients with progressive responsibility and independence. (PC3)

- Assume responsibility for patient management decisions
- Consistently manages simple ambulatory complaints or common chronic diseases
- Consistently manages patients with straightforward diagnoses in the inpatient setting
- Unable to manage complex inpatients or patients requiring intensive care
- Requires indirect supervision to ensure patient safety and quality care
- Provides appropriate preventive care and chronic disease management in the ambulatory setting
- Provides comprehensive care for single or multiple diagnoses in the inpatient setting
- Under supervision, provides appropriate care in the intensive care unit Initiates management plan for urgent or emergent care
- Independently supervise care provided by junior members of the physician-led team
- Independently manages patients across inpatient and ambulatory clinical settings who have a broad spectrum of clinical disorders including undifferentiated syndromes
- Seeks additional guidance and/or consultation as appropriate
- Appropriately manages situations requiring urgent or emergent care
- Effectively supervises the management decisions of the team
- Manages unusual, rare, or complex disorders

Skill in performing procedures. (PC4)

- Does not attempts to perform procedures without sufficient technical skill or supervision
- Willing to perform procedures when qualified and necessary for patient care
- Possesses basic technical skill for the completion of some common procedures
- Possesses technical skill and has successfully performed all procedures required for certification
- Maximizes patient comfort and safety when performing procedures
- Seeks to independently perform additional procedures (beyond those required for certification) that are anticipated for future practice
- Teaches and supervises the performance of procedures by junior members of the team

Requests and provides consultative care. (PC5)

- Is responsive to questions or concerns of others when acting as a consultant or utilizing consultant services
- Willing to utilize consultant services when appropriate for patient care

- Consistently manages patients as a consultant to other physicians/health care teams
- Consistently applies risk assessment principles to patients while acting as a consultant
- Consistently formulates a clinical question for a consultant to address
- Provides consultation services for patients with clinical problems requiring basic risk assessment
- Asks meaningful clinical questions that guide the input of consultants
- Provides consultation services for patients with basic and complex clinical problems requiring detailed risk assessment
- Appropriately weighs recommendations from consultants in order to effectively manage patient care
- Switches between the role of consultant and primary physician with ease
- Provides consultation services for patients with very complex clinical problems requiring extensive risk assessment
- Manages discordant recommendations from multiple consultants

Patient Care PC-1

How To Teach

- Discussions in ward rounds to teach history taking.
- Discussions in ward rounds to teach physical examination.
- Demonstration in ward rounds to teach history taking.
- Demonstration in ward rounds to teach physical examination.
- Discussions in wards of short cases
- Discussions in wards of long cases
- Simulated patient (in order to simulate a set of symptoms or problems.)
- Should write a summary (synthesize a differential diagnosis).

How To Assess

- Discussions in ward rounds to assess history taking
- Discussions in ward rounds to assess physical examination
- Short cases assessment through long cases
- Confirmation of physical findings by supervisor
- Confirmation of history by supervisor.

OSPE

Patient Care PC-2

How To Teach

- Resident should write management plan on history sheet and supervisor should discuss management plan.
- Resident should write investigational plans, should be able to interpret with help of supervisor
- Should be taught prioritization of care plans in complex patient by discussion.

How To Assess

- Long cases and short cases to assess the clear concepts of management by the trainee.

Patient Care PC-3

How To Teach

- Discuss thoroughly the management side effects /interactions/dosage/therapeutic procedures and intervention

How To Assess

- Long case
- Short case

OSPE

- Simulated patient
- Stimulated chart recall
- Log book
- Portfolio
- Internal assessment record

Patient Care PC-4

How To Teach

- Supervisor should ensure that the resident has complete knowledge about the procedures.
- Trainee should observe procedures
- Should perform procedures under supervision
- Should be able to perform procedures independently
- Videos regarding different procedures.

How To Assess

- OSPE
- Logbook/ portfolio
- Direct observation

Patient Care PC-5

How to Teach

- All consultations by the trainees should be discussed by the supervisor.

How to Assess

- Consultation record of the log book
- Feedback by other department regarding consultation

COMPETENCY NO. 2 MEDICAL KNOWLEDGE (MK)

Clinical knowledge (MK1)

- Possesses sufficient scientific, socioeconomic and behavioral knowledge required to provide care for common medical conditions and basic preventive care.
- Possesses the scientific, socioeconomic and behavioral knowledge required to provide care for complex medical conditions and comprehensive preventive care
- Possesses the scientific, socioeconomic and behavioral knowledge required to successfully diagnose and treat medically uncommon, ambiguous and complex conditions
- Knowledge of diagnostic testing and procedures. (MK2)

- Consistently interprets basic diagnostic tests accurately
- Does not need assistance to understand the concepts of pre-test probability and test performance Characteristics
- Fully understands the rationale and risks associated with common procedures
- Interprets complex diagnostic tests accurately
- Understands the concepts of pre-test probability and test performance characteristics
- Teaches the rationale and risks associated with common procedures and anticipates potential complications when performing procedures
- Anticipates and accounts for pitfalls and biases when interpreting diagnostic tests and procedures
- Pursues knowledge of new and emerging diagnostic tests and procedures

Medical Knowledge (MK-1, MK-2)

How to Teach

- Books etc
- Articles
- CPC(Clinic Pathological Conference)
- Lecture
- Videos
- SDL(Self Directed Learning)
- PBL(Problem Based Learning)
- Teaching experience with medical student
- Read procedural knowledge.

How To Assess

- MCQs
- SEQs
- Viva
- Videos
- Internal assessment

COMPETENCY NO. 3 SYSTEM BASED PRACTICE (SBP)

Works effectively within an inter professional team (e.g. peers, consultants, nursing, Ancillary professionals and other support personnel). (SBP1).

- Recognizes the contributions of other inter professional team members
- Does not frustrates team members with inefficiency and errors
- Identifies roles of other team members and recognize how/when to utilize them as resources.
- Does not requires frequent reminders from team to complete physician responsibilities (e.g. talk to family, enter orders)
- Understands the roles and responsibilities of all team members and uses them effectively
- Participates in team discussions when required and actively seek input from other team members

Understands the roles and responsibilities of and effectively partners with, all members of the team

- Actively engages in team meetings and collaborative decision-making
- Integrates all members of the team into the care of patients, such that each is able to maximize their skills in the care of the patient
- Efficiently coordinates activities of other team members to optimize care
- Viewed by other team members as a leader in the delivery of high quality care

Recognizes system error and advocates for system improvement. (SBP2)

- Does not ignore a risk for error within the system that may impact the care of a patient.
- Does not make decisions that could lead to error which are otherwise corrected by the system or supervision.
- Does not resistant to feedback about decisions that may lead to error or otherwise cause harm.
- Recognizes the potential for error within the system.
- Identifies obvious or critical causes of error and notifies supervisor accordingly.
- Recognizes the potential risk for error in the immediate system and takes necessary steps to mitigate that risk.
- Willing to receive feedback about decisions that may lead to error or otherwise cause harm.
- Identifies systemic causes of medical error and navigates them to provide safe patient care.
- Advocates for safe patient care and optimal patient care systems
- Activates formal system resources to investigate and mitigate real or potential medical error.
- Reflects upon and learns from own critical incidents that may lead to medical error.
- Advocates for system leadership to formally engage in quality assurance and quality improvement activities.
- Viewed as a leader in identifying and advocating for the prevention of medical error.
- Teaches others regarding the importance of recognizing and mitigating system error.

Identifies forces that impact the cost of health care, and advocates for, and practices cost-effective care. (SBP3).

- Does not ignores cost issues in the provision of care
- Demonstrates effort to overcome barriers to cost- effective care
- Has full awareness of external factors (e.g. socio- economic, cultural, literacy, insurance status) that impact the cost of health care and the role that external stakeholders (e.g. providers, suppliers, financers, purchasers) have on the cost of care
- Consider limited health care resources when ordering diagnostic or therapeutic interventions

- Recognizes that external factors influence a patient's utilization of health care and Does not act as barriers to cost- effective care
- Minimizes unnecessary diagnostic and therapeutic tests
- Possesses an incomplete understanding of cost- awareness principles for a population of patients (e.g. screening tests)
- Consistently works to address patient specific barriers to cost-effective care
- Advocates for cost-conscious utilization of resources (i.e. emergency department visits, hospital readmissions)
- Incorporates cost-awareness principles into standard clinical judgments and decision-making, including screening tests

Teaches patients and healthcare team members to recognize and address common barriers to cost- effective care and appropriate utilization of resources

- Actively participates in initiatives and care delivery models designed to overcome or mitigate barriers to cost-effective high quality care

| Transitions patients effectively within and across health delivery systems. (SBP4)

- Regards need for communication at time of transition
- Responds to requests of caregivers in other delivery systems
- Inconsistently utilizes available resources to coordinate and ensure safe and effective patient care within and across delivery systems
- Written and verbal care plans during times of transition are complete
- Efficient transitions of care lead to only necessary expense or less risk to a patient (e.g. avoids duplication of tests readmission)
- Recognizes the importance of communication during times of transition
- Communication with future caregivers is present but with lapses in pertinent or timely information
- Appropriately utilizes available resources to coordinate care and ensures safe and effective patient care within and across delivery systems
- Proactively communicates with past and future care givers to ensure continuity of care
- Coordinates care within and across health delivery systems to optimize patient safety, increase efficiency and ensure high quality patient outcomes
- Anticipates needs of patient, caregivers and future care providers and takes appropriate steps to address those needs
- Role models and teaches effective transitions of care

| How to Teach

- Lecture/ orientation session
- Various system/policies should be identified and discussed with the residents.
- Examples:
- Zakaat
- Admission procedure
- Bait-ul-Mall
- Discharge procedure

- Consultation procedure
- Shifting of patients according to SOPS
- Preferably a manual should be designed regarding various systems existing in the Hospital for the resident.
- Cost effectiveness/availability of medicine
- Avoidance of unnecessary tests because of limited health resources.
- Direct observation by the supervisor during ward rounds
- Feed back
- Assessment during case discussion

COMPETENCY NO. 4 PRACTICE BASED LEARNING (PBL)

Monitors practice with a goal for improvement. (PBLI1)

- Willing to self-reflect upon one's practice or performance
- Concerned with opportunities for learning and self-improvement
- Unable to self-reflect upon one's practice or performance
- Avails opportunities for learning and self-improvement
- Consistently acts upon opportunities for learning and self-improvement
- Regularly self-reflects upon one's practice or performance and consistently acts upon those reflections to improve practice
- Recognizes sub-optimal practice or performance as an opportunity for learning and self-improvement
- Regularly self-reflects and seeks external validation regarding this reflection to maximize practice improvement
- Actively engages in self- improvement efforts and reflects upon the experience

Learns and improves via performance audit. (PBLI2)

- Regards own clinical performance data
- Demonstrates inclination to participate in or even consider the results of quality improvement efforts
- Adequate awareness of or desire to analyze own clinical performance data
- Participates in a quality improvement projects
- Familiar with the principles, techniques or importance of quality improvement
- Analyzes own clinical performance data and identifies opportunities for improvement
- Effectively participates in a quality improvement project
- Understands common principles and techniques of quality improvement and appreciates the responsibility to assess and improve care for a panel of patients Analyzes own clinical performance data and actively works to improve performance
- Actively engages in quality improvement initiatives
- Demonstrates the ability to apply common principles and techniques of quality improvement to improve care for a panel of patients
- Actively monitors clinical performance through various data sources
- Is able to lead a quality improvement project
- Utilizes common principles and techniques of quality improvement to continuously improve care for a panel of patients

- **Learns and improves via feedback. (PBLI3)**
  - Does not resists feedback from others
  - Often seeks feedback
  - Never responds to unsolicited feedback in a defensive fashion
  - Temporarily or superficially adjusts performance based on feedback

Does not solicits feedback only from supervisors

  - Is open to unsolicited feedback
  - Solicits feedback from all members of the inter professional team and patients
  - Consistently incorporates feedback
  - Performance continuously reflects incorporation of solicited and unsolicited feedback
  - Able to reconcile disparate or conflicting feedback
- **Learns and improves at the point of care. (PBLI4)**
  - Acknowledges uncertainly and does not revert to reflexive patterned response when inaccurate
  - Seeks or applies evidence when necessary
  - Familiar with strengths and weaknesses of the medical literature
  - Has adequate awareness of or ability to use information technology
  - Does not accepts the findings of clinical research studies without critical appraisal Can translate medical information needs into well- formed clinical questions independently
  - Aware of the strengths and weaknesses of medical information resources and utilizes information technology with sophistication
  - Appraises clinical research reports, based on accepted criteria
  - Does not “slows down” to reconsider an approach to a problem, ask for help, or seek new information
  - Routinely translates new medical information needs into well-formed clinical questions
  - Utilizes information technology with sophistication
  - Independently appraises clinical research reports based on accepted criteria
  - Searches medical information resources efficiently, guided by the characteristics of clinical questions
  - Role models how to appraise clinical research reports based on accepted criteria
  - Has a systematic approach to track and pursue emerging clinical question
- **Practice Based Learning (PBL1, PBL2, PBL3, PBL4)**
- **How to Teach**
  - Discussions about problem cases
  - Should discuss errors and omissions
- **How to Assess**
  - Feed back
  - 360 evaluation
  - Research article presentation
  - Journal club presentation

- CPC presentation
- Ward presentation
- Quality improvement of projects

COMPETENCY NO. 5 PROFESSIONALISM(PROF)

- Has professional and respectful interactions with patients, caregivers and members of the interprofessional team (e.g. peers, consultants, nursing, ancillary professionals and support personnel). (PROF1)
- Consistently respectful in interactions with patients, caregivers and members of the interprofessional team, even in challenging situations
- Is available and responsive to needs and concerns of patients, caregivers and members of the interprofessional team to ensure safe and effective care Emphasizes patient privacy and autonomy in all interactions
- Demonstrates empathy, compassion and respect to patients and caregivers in all situations
- Anticipates, advocates for, and proactively works to meet the needs of patients and caregivers
- Demonstrates a responsiveness to patient needs that supersedes self-interest
- Positively acknowledges input of members of the interprofessional team and incorporates that input into plan of care as appropriate
- Role models compassion, empathy and respect for patients and caregivers
- Role models appropriate anticipation and advocacy for patient and caregiver needs
- Fosters collegiality that promotes a high-functioning interprofessional team

Teaches others regarding maintaining patient privacy and respecting patient autonomy Accepts responsibility and follows through on tasks. (PROF2)

- Demonstrates responsibilities expected of a physician professional
- Accepts professional responsibility even when not assigned or not mandatory
- Completes administrative and patient care tasks in a timely manner in accordance with local practice and/or policy
- Completes assigned professional responsibilities without questioning or the need for reminders
- Prioritizes multiple competing demands in order to complete tasks and responsibilities in a timely and effective manner
- Willingness to assume professional responsibility regardless of the situation
- Role models prioritizing multiple competing demands in order to complete tasks and responsibilities in a timely and effective manner
- Assists others to improve their ability to prioritize multiple, competing tasks

Responds to each patient's unique characteristics and needs. (PROF3)

- Willing to modify care plan to account for a patient's unique characteristics and needs
- Is sensitive to and has basic awareness of differences related to culture, ethnicity, gender, race, age and religion in the patient/caregiver encounter
- Seeks to fully understand each patient's unique characteristics and needs based upon culture, ethnicity, gender, religion, and personal preference

- Modifies care plan to account for a patient's unique characteristics and needs with complete success
- Recognizes and accounts for the unique characteristics and needs of the patient/ caregiver
- Appropriately modifies care plan to account for a patient's unique characteristics and needs
- Role models professional interactions to negotiate differences related to a patient's unique characteristics or needs
- Role models consistent respect for patient's unique characteristics and needs

Exhibits integrity and ethical behavior in professional conduct. (PROF4)

- Has a basic understanding of ethical principles, formal policies and procedures, and does not intentionally disregard them
- Honest and forthright in clinical interactions, documentation, research, and scholarly activity
- Demonstrates accountability for the care of patients
- Adheres to ethical principles for documentation, follows formal policies and procedures, acknowledges and limits conflict of interest, and upholds ethical expectations of research and scholarly activity
- Demonstrates integrity, honesty, and accountability to patients, society and the profession
- Actively manages challenging ethical dilemmas and conflicts of interest
- Identifies and responds appropriately to lapses of professional conduct among peer group
- Assists others in adhering to ethical principles and behaviors including integrity, honesty, and professional responsibility
- Role models integrity, honesty, accountability and professional conduct in all aspects of professional life
- Regularly reflects on personal professional conduct

Professionalism (PROF1, PROF2, PROF3 AND PROF4)

How To Teach

1. Should be taught during ward rounds.
2. By supervisor
3. Through workshop

How To Assess

1. Punctuality
2. Behavior
3. Direct observation during ward rounds
4. Feed back
5. 360 degree evaluation

Competency No. 6 INTERPERSONAL AND COMMUNICATION SKILL (ICS)

- Communicates effectively with patients and caregivers. (ICS1)
- Does not ignores patient preferences for plan of care
- Makes attempt to engage patient in shared decision-making

- Does not engages in antagonistic or counter-therapeutic relationships with patients and caregivers
- Engages patients in discussions of care plans and respects patient preferences when offered by the patient, and also actively solicit preferences.
- Attempts to develop therapeutic relationships with patients and caregivers which is often successful
- Defers difficult or ambiguous conversations to others
- Engages patients in shared decision making in uncomplicated conversations
- Requires assistance facilitating discussions in difficult or ambiguous conversations
- Requires guidance or assistance to engage in communication with persons of different socioeconomic and cultural backgrounds
- Identifies and incorporates patient preference in shared decision making across a wide variety of patient care conversations
- Quickly establishes a therapeutic relationship with patients and caregivers, including persons of different socioeconomic and cultural backgrounds
- Incorporates patient-specific preferences into plan of care
- Role models effective communication and development of therapeutic relationships in both routine and challenging situations
- Models cross-cultural communication and establishes therapeutic relationships with persons of diverse socioeconomic backgrounds

Communicates effectively in inter professional teams (e.g. peers, consultants, nursing, ancillary professionals and other support personnel). (ICS2)

- Does not uses unidirectional communication that fails to utilize the wisdom of the team
- Does not resists offers of collaborative input
- Consistently and actively engages in collaborative communication with all members of the team
- Verbal, non-verbal and written communication consistently acts to facilitate collaboration with the team to enhance patient care
- Role models and teaches collaborative communication with the team to enhance patient care, even in challenging settings and with conflicting team member opinions

Appropriate utilization and completion of health records. (ICS3)

- Health records are organized and accurate and are not superficial and does not miss key data or fails to communicate clinical reasoning
- Health records are organized, accurate, comprehensive, and effectively communicate clinical reasoning
- Health records are succinct, relevant, and patient specific
- Role models and teaches importance of organized, accurate and comprehensive health records that are succinct and patient specific

Interpersonal and Communication Skill (ISC1, ICS2 AND ICS3)

How to Teach

- Teaching through communication skills by supervisor
- Through workshop

How to Assess

1. Direct observation
2. Feed back
3. 360 degree evaluation
4. History taking
5. CPC presentation
6. Journal club presentation
7. Article presentation
8. Consultation
9. OPD working
10. Counseling sessions
11. OSPE
12. VIVA

***FOR EXAMPLE*: In OTORHINOLARYNGOLOGY the competencies other than Medical knowledge should be monitored/supervised /evaluated as follows**

Practice and Procedural Skills	**Attitudes, Values and Habits**	**Professionalism**	**Interpersonal and Communication Skills**	**Practice Based Learning Improvement**	**Evaluation of Medical Knowledge**
• Development of proficiency in examination of the cardiovascular system, in general and cardiac auscultation, in particular • Preoperative evaluation of cardiac risk in-patients undergoing non-cardiac surgery • Preoperative evaluation of cardiac risk in-patients undergoing non-cardiac surgery • The appropriate way to answer cardiac consultations • The appropriate follow-up, including use of substantive progress notes, of patients who have been seen in consultation. Out-patient cardiac care. • Differential diagnosis of chest pain	• Keeping the patient and family informed on the clinical status of the patient, results of tests, etc. • Frequent, direct communication with the physician who requested the consultation. • Review of previous medical records and extraction of information relevant to the patient's cardiovascular status. Other sources of information may be used, when pertinent • Understanding that patients have the right to either accepts or decline recommendations made by the physician • Education of the patient	• The PGT should continue to develop his/her ethical behavior and the humanistic qualities of respect, compassion, integrity, and honesty. • The PGT must be willing to acknowledge errors and determine how to avoid future similar mistakes. • The PGT must be responsible and reliable at all times. • The PGT must always consider the needs of patients, families, colleagues, and support staff. • The PGT must maintain a professional appearance at all times	• The PGT should learn when to call a subspecialist for evaluation and management of a patient with a cardiovascular disease. • The PGT should be able to clearly present the consultation cases to the staff in an organized and thorough manner • The PGT must be able to establish a rapport with the patients and listens to the patient's complaints to promote the patient's welfare. • The PGT should provide effective education and counseling for patients. • The PGT must write organized and legible notes • The PGT must communicate any patient problems to the staff in a timely fashion	• The PGT should use feedback and self-evaluation in order to improve performance • The PGT should read the required material and articles provided to enhance learning • The PGT should use the medical literature search tools in the library to find appropriate articles related to interesting cases.	• The PGT's ability to answer directed questions and to participate in the didactic sessions. • The PGT's presentation of assigned short topics. These will be examined for their completeness, accuracy, organization, and the PGTs' understanding of the topic. • The PGT's ability to apply the information learned in the didactic sessions to the patient care setting. • The PGT's interest level in learning

Similar competencies should be applied for other domains of medicine & allied. Please see curriculum of MS OTORHINOLARYNGOLOGY for details

METHODS OF TEACHING & LEARNING DURING COURSE CONDUCTION

1.Inpatient Services: All residents will have rotations in intensive care, coronary care, emergency medicine, general medical wards, general medicine, ambulatory experiences etc. The required knowledge and skills pertaining to the ambulatory based training in following areas shall be demonstrated;

- Ear
- Nose
- Throat
- Head & Neck
- Basic Air Way Management
- Emergency Of ENT
- Head And Neck Trauma
- Basics Of General Surgery
- Plastic Surgery
- Neurosurgery

2. *Outpatient Experiences:* Residents should demonstrate expertise in diagnosis and management of patients in acute care clinics and longitudinal clinic and gain experience in ENT Head & Neck surgeries,General surgery,Neurosurgery,Plastic Surgery etc.

3. *Emergency services:* Our residents take an early and active role in patient care and obtain decision-making roles quickly. Within the Emergency Department, residents direct the initial stabilization of all critical patients, manage airway interventions, and oversee all critical care.

4. *Electives/ Specialty Rotations**:*** In addition, the resident will elect rotations in a variety of electives including ,General surgery,Neurosurgery,Plastic Surgery etc . Residents may also select electives at other institutions if the parent department does not offer the experiences they want

5. **Interdisciplinary Otorhinolaryngology:**Otolgy,rhinology,larngology,head and neck,oncology ,radiology,plastic surgery,neurosurgery,General Surgery, Rehabilitation

6. **Community Practice:** Residents experience the practice of otorhinolaryngology in a non-academic, non-teaching hospital setting. The rotation may be used to try out a practice that the resident later joins, to learn the needs of referring surgeon or to decide on a future career path.

7. **Mandatory Workshops:** Residents achieve hands on training while participating in mandatory workshops of Research Methodology, Advanced Life Support, Communication Skills, Computer & Internet and Clinical Audit. Specific objectives are given in detail in the relevant section of Mandatory Workshops.

8. **Core Faculty Lectures (CFL):** The core faculty lecture's focus on monthly themes of the various specialty Otorhinolaryngology.

9. **Introductory Lecture Series (ILS):** Various introductory topics are presented by Otorhinolaryngology faculty to introduce interns to basic and essential topics in ENT.

10. Long and short case presentations:– Giving an oral presentation on ward rounds is an important skill for medical student to learn. It is medical reporting which is terse and rapidly moving. After collecting the data, you must then be able both to document it in a written format and transmit it clearly to other health care providers. In order to do this successfully, you need to understand the patient's medical illnesses, the psychosocial contributions to their History of Presenting Illness and their physical diagnosis findings. You then need to compress them into a concise, organized recitation of the most essential facts. The listener needs to be given all of the relevant information without the extraneous details and should be able to construct his/her own differential diagnosis as the story unfolds. Consider yourself an advocate who is attempting to persuade an informed, interested judge the merits of your argument, without distorting any of the facts. An oral case presentation is NOT a simple recitation of your write-up. It is a concise, edited presentation of the most essential information. Basic structure for oral case presentations includes Identifying information/chief complaint (ID/CC) , History of present illness (HPI) including relevant ROS (Review of systems) questions only ,Other active medical problems , Medications/allergies/substance use (note: e. The complete ROS should not be presented in oral presentations , Brief social history (current situation and major issues only) . Physical examination (pertinent findings only) , One line summary & Assessment and plan

11. **Seminar Presentation:** Seminar is held in a noon conference format. Upper level residents present an in-depth review of a medical topic as well as their own research. Residents are formally critiqued by both the associate program director and their resident colleagues.

12. **Journal Club Meeting (JC):**A resident will be assigned to present, in depth, a research article or topic of his/her choice of actual or potential broad interest and/or application. Two hours per month should be allocated to discussion of any current articles or topics introduced by any participant. Faculty or outside researchers will be invited to present outlines or results of current research activities. The article should be critically evaluated and its applicable results should be highlighted, which can be incorporated in clinical practice. Record of all such articles should be maintained in the relevant department

13. **Small Group Discussions/ Problem based learning/ Case based learning:** Traditionally small groups consist of 8-12 participants. Small groups can take on a variety of different tasks, including problem solving, role play, discussion, brainstorming, debate, workshops and presentations. Generally students prefer small group learning to other instructional methods. From the study of a problem students develop principles and rules and generalize their applicability to a variety of situations PBL is said to develop problem solving skills and an integrated body of knowledge. It is a student-centered approach to learning, in which students determine what and how they learn. Case studies help learners identify problems and solutions, compare options and decide how to handle a real situation

14. **Discussion/Debate**: There are several types of discussion tasks which would be used as learning method for residents including: guided discussion, in which the facilitator poses a discussion question to the group and learners offer responses or questions to each other's contributions as a means of broadening the discussion's scope; inquiry-based discussion, in which learners are guided through a series of questions to discover some relationship or principle; exploratory discussion, in which learners examine their personal opinions, suppositions or assumptions and then visualize alternatives to these assumptions; and debate in which students argue opposing sides of a controversial topic. With thoughtful and well-designed discussion tasks, learners can practice critical inquiry and reflection, developing their individual thinking, considering alternatives and negotiating meaning with other discussants to arrive at a shared understanding of the issues at hand.

15. **Case Conference (CC):** These sessions are held three days each week; the focus of the discussion is selected by the presenting resident. For example, some cases may be presented to discuss a differential diagnosis, while others are presented to discuss specific management issues.

16. **Noon Conference (NC):** The noon conferences focus on monthly themes of the various ENT topics for eleven months of the year.

17. **Grand Rounds (GR):** The Department of Medicine hosts Grand Rounds on weekly basis. Speakers from local, regional and national otorhinolaryngology training programs are invited to present topics from the broad spectrum of otorhinolaryngology. All residents on inpatient floor teams, as well as those on ambulatory block rotations and electives are expected to attend.

18. **Professionalism Curriculum (PC):** This is an organized series of recurring large and small group discussions focusing upon current issues and dilemmas in medical professionalism and ethics presented primarily by an associate program director. Lectures are usually presented in a noon conference format.

19. **Evening Teaching Rounds:** During these sign-out rounds, the inpatient Chief Resident makes a brief educational presentation on a topic related to a patient currently on service, often related to the discussion from morning report. Serious cases are mainly focused during evening rounds.

20. **Clinico-pathological Conferences:** The clinico pathological conference, popularly known as CPC primarily relies on case method of teaching medicine. It is a teaching tool that illustrates the logical, measured consideration of a differential diagnosis used to evaluate patients. The process involves case presentation, diagnostic data, discussion of differential diagnosis, logically narrowing the list to few selected probable diagnoses and eventually reaching a final diagnosis and its brief discussion. The idea was first practiced in Boston, back in 1900 by a Harvard internist, Dr. Richard C. Cabot who practiced this as an informal discussion session in his private office. Dr. Cabot incepted this from a resident, who in turn had received the idea from a roommate, primarily a law student.

21. **Evidence Based Medicine (EBM):** Residents are presented a series of noon monthly lectures presented to allow residents to learn how to critically appraise journal articles, stay current on statistics, etc. The lectures are presented by the program director.

22. **Clinical Audit based learning:** "Clinical audit is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria…Where indicated, changes are implemented…and further monitoring is used to confirm improvement in healthcare delivery." Principles for Best Practice in Clinical Audit (2002, NICE/CHI)

23. **Peer Assisted Learning:** Any situation where people learn from, or with, others of a similar level of training, background or other shared characteristic. Provides opportunities to reinforce and revise their learning. Encourages responsibility and increased self-confidence. Develops teaching and verbalization skills. Enhances communication skills, and empathy. Develops appraisal skills (of self and others) including the ability to give and receive appropriate feedback. Enhance organizational and team-working skills.

24. **Morbidity and Mortality Conference (MM):** The M&M Conference is held occasionally at noon throughout the year. A case, with an adverse outcome, though not necessarily resulting in death, is discussed and thoroughly reviewed. Faculty members from various disciplines are invited to attend, especially if they were involved in the care of the patient. The discussion focuses on how care could have been improved.

25. **Clinical Case Conference:** Each resident, except when on vacation, will be responsible for at least one clinical case conference each month. The cases discussed may be those seen on either the consultation or clinic service or during rotations in specialty areas. The resident, with the advice of the Attending Physician on the Consultation Service, will prepare and present the case(s) and review the relevant literature

26. **SEQ as assignments on the content areas:** SEQs assignments are given to the residents on regular basis to enhance their performance during written examinations.

27. **Skill teaching in ICU, emergency, ward settings& skill laboratory:** Two hours twice a month should be assigned for learning and practicing clinical skills. List of skills to be learnt during these sessions is as follows:

- Residents must develop a comprehensive understanding of the indications, contraindications, limitations, complications, techniques, and interpretation of results of those technical procedures integral to the discipline (mentioned in the Course outlines)
- Residents must acquire knowledge of and skill in educating patients about the technique, rationale and ramifications of procedures and in obtaining procedure-specific informed consent. Faculty supervision of residents in their performance is required, and each resident's experience in such procedures must be documented by the program director

Residents must have instruction in the evaluation of otorhinolaryngology literature, clinical epidemiology, clinical study design, relative and absolute risks of disease, statistics and decision-making

Training must include cultural, social, family, behavioral and economic issues, such as confidentiality of information, indications for life support systems, and allocation of limited resources

- Residents must be taught the social and economic impact of their decisions on patients, the primary care physician and society. This can be achieved by attending the bioethics lectures and becoming Residents should have instruction and experience with patient counseling skills and community education
- This training should emphasize effective communication techniques for diverse populations, as well as organizational resources useful for patient and community education

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28. Bedside teaching rounds in ward: "To study the phenomenon of disease without a book is to sail an uncharted sea whilst to study books without patients is not to go to sea at all" Sir William Osler 1849-1919.Bedside teaching is regularly included in the ward rounds. Learning activities include the physical exam, a discussion of particular medical diseases, psychosocial and ethical themes, and management issues

***29. Directly Supervised Procedures - (DSP)*:** Residents learn procedures under the direct supervision of an attending or fellow during some rotations. For example, in the Surgical Intensive Care Unit the , the SICU attending, observe the placement of central venous and arterial lines ad purcutaneaous tracheostomy. Specific procedures used in patient care vary by rotation.

30. Self-directed learning self-directed learning residents have primary responsibility for planning, implementing, and evaluating their effort. It is an adult learning technique that assumes that the learner knows best what their educational needs are. The facilitator's role in self-directed learning is to support learners in identifying their needs and goals for the program, to contribute to clarifying the learners' directions and objectives and to provide timely feedback. Self-directed learning can be highly motivating, especially if the learner is focusing on problems of the immediate present, a potential positive outcome is anticipated and obtained and they are not threatened by taking responsibility for their own learning.

31. Follow up clinics: The main aims of our clinic for patients and relatives include (a) Explanation of patient's stay in ICU or Ward settings: Many patients do not remember their ICU stay, and this lack of recall can lead to misconceptions, frustration and having unrealistic expectations of themselves during their recovery. It is therefore preferable for patients to be aware of how ill they have been and then

they can understand why it is taking some time to recover.(b)Rehabilitation information and support: We discuss with patients and relatives their individualized recovery from critical illness. This includes expectations, realistic goals, change in family dynamics and coming to terms with life style changes.(c)Identifying physical,

psychological or social problems Some of our patients have problems either as a result of their critical illness or because of other underlying conditions. The follow-up team will refer patients to various specialties, if appropriate. (d)Promoting a quality service: By highlighting areas which require change in nursing and medical practice, we can improve the quality of patient and relatives care. Feedback from patients and relatives about their ICU & ward experience is invaluable. It has initiated various audits and changes in clinical practice, for the benefit of patients and relatives in the future.

32. Core curriculum meeting*:* All the core topics of Medicine should be thoroughly discussed during these sessions. The duration of each session should be at least two hours once a month. It should be chaired by the chief resident (elected by the residents of the relevant discipline). Each resident should be given an opportunity to brainstorm all topics included in the course and to generate new ideas regarding the improvement of the course structure

33. Annual Grand Meeting Once a year all residents enrolled for MD Internal Medicine should be invited to the annual meeting at RMU. One full day will be allocated to this event. All the chief residents from affiliated institutes will present their annual reports. Issues and concerns related to their relevant courses will be discussed. Feedback should be collected and suggestions should be sought in order to involve residents in decision making. The research work done by residents and their literary work may be displayed. In the evening an informal gathering and dinner can be arranged. This will help in creating a sense of belonging and ownership among students and the faculty.

34. ***Learning through maintaining log book:*** *it is* used to list the core clinical problems to be seen during the attachment and to document the student activity and learning achieved with each patient contact.

35. Learning through maintaining portfolio*:* Personal Reflection is one of the most important adult educational tools available. Many theorists have argued that without reflection, knowledge translation and thus genuine "deep" learning cannot occur. One of the Individual reflection tools maintaining portfolios, Personal Reflection allows students to take inventory of their current knowledge skills and attitudes, to integrate concepts from various experiences, to transform current ideas and experiences into new knowledge and actions and to complete the experiential learning cycle.

36. ***Task-based-learning:*** A list of tasks is given to the students: participate in consultation with the attending staff, interview and examine patients, review a number of new radiographs with the radiologist.

37. ***Teaching in the ambulatory care setting:*** A wide range of clinical conditions may be seen. There are large numbers of new and return patients. Students have the opportunity to experience a multi-professional approach to patient care. Unlike ward teaching, increased numbers of students can be accommodated without exhausting the limited No. of suitable patients.

38. ***Community Based Medical Education:*** CBME refers to medical education that is based outside a tertiary or large secondary level hospital. Learning in the fields of epidemiology, preventive health, public health principles, community development, and the social impact of illness and understanding how patients interact with the health care system. Also used for learning basic clinical skills, especially communication skills.

39. ***Audio visual laboratory:*** audio visual material for teaching skills to the residents is used specifically in teaching gastroenterology procedure details.

40. E-learning/web-based medical education/computer-assisted instruction: **Computer** technologies, including the Internet, can support a wide range of learning activities from dissemination of lectures and materials, access to live or recorded presentations, real-time discussions, self-instruction modules and virtual patient simulations. distance-independence, flexible scheduling, the creation of reusable learning materials that are easily shared and updated, the ability to individualize instruction through adaptive instruction technologies and automated record keeping for assessment purposes.

41. ***Research based learning:*** All residents in the categorical program are required to complete an academic outcomes-based research project during their training. This project can consist of original bench top laboratory research, clinical research or a combination of both. The research work shall be compiled in the form of a thesis which is to be submitted for evaluation by each resident before end of the training. The designated Faculty will organize and mentor the residents through the process, as well as journal clubs to teach critical appraisal of the literature.

42. ***Other teaching strategies specific for different specialties as mentioned in the relevant parts of the curriculum***

Some of the other teaching strategies which are specific for certain domains of internal medicine are given along with relevant modules

CURRICULUM OF MS OTORHINOLARYNGOLOGY

Acknowledgement

This curriculum has been adopted from UHS Lahore with some modifications.

RAWALPINDI MEDICAL UNIVERSITY
RAWALPINDI

STATUTES

Nomenclature Of The Proposed Course

The name of degree programme shall be MS Otolaryngology. This name is well recognized and established for the last many decades worldwide***.***

Course Title:

MS Otolaryngology

Training Centers

Departments of Otolaryngology (accredited by RMU) in affiliated institutes/ Hospitals of Rawalpindi Medical University, Rawalpindi.

Duration of Course

The duration of MS Otolaryngology course shall be four (4) years with structured training in a recognized department under the guidance of an approved supervisor. After admission in M.S. Otolaryngology Programme the resident will spend first 6 Months in the relevant Department of Otolaryngology as **Induction period** during which resident will get orientation about the chosen discipline and will also undertake the **mandatory workshops** (Appendix E). The research project will be designed and the **synopsis** be prepared during this period.

On completion of the induction period the resident will start formal training in the Basic Principles of General Surgery for 06 Months. At the end of one calendar year the candidate will take up the Abridged Examination.

During 2nd, 3rd & 4th years, of the Programme there shall be two components of the Programme. The Research Synopsis must be got approved by AS&RB of the University within first two years of the Programme.

1. Clinical Training in Otolaryngology

2. Research and Thesis writing

The candidate shall undertake clinical training to achieve educational objectives of M.S. Otolaryngology (knowledge & Skills) along with rotations in the 3rd year of the programme as follows:

a) 3 months is Plastic Surgery
b) 3 months in Neurosurgery

Research Component and thesis writing shall be completed over the four years duration of the course. Candidates will spend total time equivalent on calendar for research during the training. Research can be done as one block or it can be done in the form of regular periodic rotationsp over four years as long as total research time is equivalent to one calendar year.

Admission Criteria

Applications for admission to MS Training Programs of University will be invited through advertisement in print and electronic media mentioning closing date of applications and date of Entry Examination.

Eligibility: The applicant on the last date of submission of applications for admission must possess the:

i) Basic Medical Qualification of MBBS or equivalent medical qualification recognized by Pakistan Medical & Dental Council.

ii) Certificate of one year's House Job experience in institutions recognized by Pakistan Medical & Dental Council Is essential at the time of interview. The

applicant is required to submit Hope Certificate from the concerned Medical Superintendent that the House Job shall be completed before the Interview.

iii) Valid certificate of permanent or provisional registration with Pakistan Medical & Dental Council.

Registration and Enrollment

- As per policy of Pakistan Medical & Dental Council the number of PG Trainees/ Students per supervisor shall be maximum 05 per annum for all PG programmes including minor programmes (if any).

- Beds to trainee ratio at the approved teaching site shall be at least 5 beds per trainee.

- The University will approve supervisors for MS courses.

- Candidates selected for the courses after their enrollment at the relevant institutions shall be registered with UHS as per prescribed Registration Regulation.

Accreditation Related Issues of The Institution

A). Faculty

Properly qualified teaching staff in accordance with the requirements of Pakistan Medical and Dental Council (PMDC)

B). Adequate Space

Including class-rooms (with audiovisual aids), demonstration rooms, computer lab and clinical pathology lab etc.

C). Library

Departmental library should have latest editions of recommended books, reference books and latest journals (National and International).

- Accreditation of Otolaryngology training program can be suspended on temporary or permanent basis by the University, if the program does not comply with requirements for residents training as laid out in this curriculum.

- Program should be presented to the University along with a plan for implementation of curriculum for training of residents.

- Programs should have documentation of residents training activities and evaluation on monthly basis.

- To ensure a uniform and standardized quality of training and availability of the training facilities, the University reserves the right to make surprise visits of the training program for monitoring purposes and may take appropriate action if deemed necessary.

AIMS AND OBJECTIVES OF THE COURSE

AIM

The aim of four years MS programme in Otolaryngology is to train residents to acquire the competency of a specialist in the field so that they can become good teachers, researchers and clinicians in their specialty after completion of their training.

GENERAL OBJECTIVES

MS Otolaryngology training should enable a student to:

1. Access and apply relevant knowledge to clinical practice:
    - Maintain currency of knowledge
    - Apply scientific knowledge in practice
    - Appropriate to patient need and context
    - Critically evaluate new technology
2. Safely and effectively performs appropriate surgical procedures:
    - Consistently demonstrate sound surgical skills
    - Demonstrate procedural knowledge and technical skill at a level appropriate to the level of training
    - Demonstrate manual dexterity required to carry out procedures
    - Adapt their skills in the context of each patient and procedure
    - Maintain and acquire new skills
    - Approach and carries out procedures with due attention to safety of patient, self and others
    - Critically analyze their own clinical performance for continuous improvement
3. Design and implement effective management plans:
    - Recognize the clinical features, accurately diagnose and manage neurological problems
    - Formulate a well-reasoned provisional diagnosis and management plan based on a thorough history and examination
    - Formulate a differential diagnosis based on investigative findings
    - Manage patients in ways that demonstrate sensitivity to their physical, social, cultural and psychological needs
    - Recognize disorders of the nervous system and differentiate those amenable to surgical treatment

- Effectively manage the care of patients with ENT trauma including multiple system trauma
- Effectively recognize and manage complications
- Accurately identify the benefits, risks and mechanisms of action of current and evolving treatment modalities
- Indicate alternatives in the process of interpreting investigations and in decision-making
- Manage complexity and uncertainty
- Consider all issues relevant to the patient
- Identify risk
- Assess and implement a risk management plan
- Critically evaluate and integrate new technologies and techniques.

4. Organize diagnostic testing, imaging and consultation as needed:
   - Select medically appropriate investigative tools and monitoring techniques in a cost-effective and useful manner
   - Appraise and interpret appropriate diagnostic imaging and investigations according to patients' needs
   - Critically evaluates the advantages and disadvantages of different investigative modalities

5. Communicate effectively:
   - Communicate appropriate information to patients (and their family) about procedures, potentialities and risks associated with surgery in ways that encourage their participation in informed decision making
   - Communicate with the patient (and their family) the treatment options including benefits and risks of each
   - Communicate with and co-ordinate health management teams to achieve an optimal surgical environment
   - Initiate the resolution of misunderstandings or disputes
   - Modify communication to accommodate cultural and linguistic sensitivities of the patient

6. Recognize the value of knowledge and research and its application to clinical practice:

- Assume responsibility for self-directed learning
- Critically appraise new trends in Otolaryngology
- Facilitate the learning of others.

7. Appreciate ethical issues associated with Otolaryngology:

- Consistently apply ethical principles
- Identify ethical expectations that impact on medico-legal issues
- Recognize the current legal aspects of informed consent and confidentiality
- Be accountable for the management of their patients.

8. Professionalism by:

- Employing a critically reflective approach to Otolaryngology
- Adhering with current regulations concerning workplace harassment
- Regularly carrying out self and peer reviewed audit
- Acknowledging and have insight into their own limitations
- Acknowledging and learning from mistakes

9. Work in collaboration with members of an interdisciplinary team where appropriate:

- Collaborate with other professionals in the selection and use of various types of treatments assessing and weighing the indications and contraindications associated with each type
- Develop a care plan for a patient in collaboration with members of an interdisciplinary team
- Employ a consultative approach with colleagues and other professionals
- Recognize the need to refer patients to other professionals.

10. Management and Leadership

- Effective use of resources to balance patient care and system resources
- Identify and differentiate between system resources and patient needs

- Prioritize needs and demands dealing with limited system resources.
- Manage and lead clinical teams
- Recognize the importance of different types of expertise which contribute to the effective functioning of clinical team.
- Maintain clinically relevant and accurate contemporaneous records

11. Health advocacy:
    - Promote health maintenance of patients
    - Advocate for appropriate health resource allocation
    - Promote health maintenance of colleagues and self scholar and teacher

SPECIFIC LEARNING OUTCOMES

On completion of the training program, Otolaryngology trainees pursuing an academic pathway will be expected to have demonstrated competence in all aspects of the published syllabus. The specific training component would be targeted for establishing clearly defined standards of knowledge and skills required to practice Otolaryngology at secondary and tertiary care level with proficiency in the Basic and applied clinical sciences, Basic Otolaryngologic care, ENT intensive care, Emergency (A&E) medicine and Complementary surgical disciplines.

1. **Cognitive knowledge:** Describe embryology, applied anatomy, physiology, pathology, clinical features, diagnostic procedures and the therapeutics including preventive methods, (medical/surgical) pertaining to Otolaryngology and Head & Neck Surgery.
2. **Clinical Decision Making Ability & Management Expertise:** Diagnose conditions from history taking, clinical evaluation and investigations and develop expertise to manage medically as well as surgically the commonly encountered, disorders and diseases in different areas as follows:

   Otology, Neurology & Skull-base Surgery: External, middle and internal ear diseases, deafness including the common complications associated with middle ear inner facial Nerve palsy, tinnitus, vertigo and other conditions such as acoustic neuroma, malignant tumours, glomus tumor and petrous apex cholesteatoma etc. and to be capable of doing early diagnosis of these conditions and also to acquire adequate knowledge about principles of therapy of these diseases.
3. **Rhinology:** Able to diagnose and manage nasal and paranasal sinus conditions such as infection, polyps and allergy. Acquire some surgical skills to do septorhinoplasty, septoplasty, functional endoscopic sinus surgery (FESS). Develop capability to do oncologic diagnosis and therapy planning for proper management of such patients in collaboration with radiotherapists and medical oncologists.

4. **Laryngology:** Able to diagnose and manage benign lesions of the larynx including voice-disorders and pharyngeal and nasopharyngeal diseases, viz-adenoids and angiofibroma. Capable to diagnose oncologic conditions such as laryngeal carcinoma and plan its therapy strategies.
5. **Oral cavity/salivary glands:** Learn about Oral cavity and salivary gland diseases, their diagnosis and therapy planning with referral strategies for cancer patients to advanced cancer centers/ Hospital.
6. **Head/Neck conditions/diseases:** Learn about head and neck diseases including Parotid gland and thyroid diseases, neurogenic tumours and neck space infections/and their management.
7. **Broncho-esophageal region:** Learn about broncho-esophageal diseases/disorders such as congenital disorders, diagnosis of Foreign bodies in wind/food pipes with their management policies. Capable to perform panendoscopies for oncologic evaluation in the head-neck region, including oesophageal malignancy.
8. **Plastic reconstruction following major head neck surgery & trauma:** Acquire general principles of reconstructive surgery and its referral needs.
9. **Advanced Surgical methods:** Acquire knowledge about phonosurgery like microlaryngoscopic surgery, palatopharyngoplasty for VPI & Cleft palate, and thyroplasty for voice-disorders.
10. **General principles of newer therapy/Surgery:** Newer knowledge about ENT diseases in general, including technological (Laser) and pharmacologic advances (medicines) and newer method of therapy for certain conditions such as Obstructive sleep apnoea syndrome and asthma.
11. **Traumatology & Facio-maxillary Injury:** Acquire knowledge in the management of Traumatology in general and facio-maxillary injury in particular, including nasal fractures. Be capable of doing screening in the community, of the audiological & speech related disabilities, and also to do early identification of malignancies and create its awareness in the community/ society to eventually get better cooperation from people in health management.
12. **Radiology:** Acquire knowledge about radiology/imaging and to interpret different radiological procedures and imaging in Otolaryngology – Head and

Neck and skull base regions. There should be collaboration with Radiology department for such activities.

13. **Audiology & Rehabilitation:** Perform different audiological and neuro-otological tests for diagnosis of audiologic/vestibular disorders/diseases and become capable to interpret these findings and to incorporate their implication in diagnosis and their treatment including the rehabilitative methods in Audiology and speech pathology including hearing aids and other assistive and implantable devices.
14. **Psychologic and social aspect:** Some elementary knowledge in clinical Psychology and social, work management is to be acquired for management of patients, especially those terminally ill and disable-persons and interacting with their relatives.
15. **Preventive Otolaryngology:** Acquire knowledge about prevention of some conditions especially in children such as middle ear and sinus infection, hereditary deafness and early diagnosis of head-neck malignancy. Hence he/she should know about the preventive Otorhinolaryngology (ENT).
16. **Identification of a special areas within the subject:** To further develop higher skills within the specialty in a specialized are such as Otology, Neurology, Rhinology, head and neck oncology, skull base surgery and Audiological medicine, Resident may identify some area of interest, during the Residency Programme in one of such areas like Otology.
17. **Research Experience:**

All residents in the categorical program are required to complete an academic outcomes-based research project during their training. This project can consist of original bench top laboratory research, clinical research or a combination of both. The research work shall be compiled in the form of a thesis which is to be submitted for evaluation by each resident before end of the training. The designated Faculty will organize and mentor the residents through the process, as well as journal clubs to teach critical appraisal of the literature.

PRACTICAL TRAINING

1. A Resident doctor, pursuing MS Degree course is expected to perform major and minor surgical procedures first through observation and then under supervision of a supervisor/faculty member till he/she is proficient to perform major and minor surgical maneuvers independently such as: (Few examples only given):
   - Tracheostomy
   - Tonsillectomy
   - Adenoidectomy/grommet insertion,
   - Nasal Polypectomy
   - Incision/drainage of quinsy/other abscesses,
   - S.M.R. & Septoplasty
   - Cortical mastoidectomy
   - Modified radical Mastoidectomy.
2. Be able to manage common emergencies like, fracture nasal bone, stridor requiring a tracheostomy, epistaxis, subperiosteal abscess, and Peritonsillar abscess.
3. He/she should be capable to do minor operations independently (Few examples only given)
   - Myringotomy and myringoplasty
   - Antral washout and nasal biopsy
   - Sub-mandibular salivary gland removal
   - Biopsy from a neck mass, such as a node
   - Direct Laryngoscopy
   - Nasophayrngoscopy
   - Flexible Bronchoscopy and Oesophagoscopy
   - Aural polypectomy
   - Fibre-optic rigid endoscopy of oesophagus
   - He/she should be able to do the following operations under supervision/guidance of senior colleagues/ faculty member (Few examples only given):
   - Maxillectomy (Partial and Total)

- Superficial Parotidectomy
- Radical block dissection of the neck for metastatic nodes.
- Total Laryngectomy for cancer.
- Laryngofissure
- Repair of laryngotracheal trauma.
- Ligation external carotid artery

4. He/she should be able to do under guidance/supervision the following specialized operative procedures (Few examples only given):
   - Facial nerve decompression
   - Pinna-Repair (Post-traumatic)
   - Surgery of choanal atresia,
   - External canal atresia-surgery,
   - Functional endoscopic/sinus surgery,
   - Stapedectomy
   - Tympanoplasty with mastoid surgery
   - Rhinoplasty for cosmetic purposes.
   - Fibre-optic bronchoscopy and oesophagoscopy including foreign body removal
   - Cryo/Laser surgery in ENT
   - Micorlaryngoscopic voice-surgery for vocal nodules, polyps/ cyst etc
   - Phonosurgery for cord palsy including type I thyroplasty.
   - Skull base/parapharyngeal space surgery
   - Thyroid surgery,
   - Laryngo-tracheal stenosis – surgical correction,
   - Facio-maxillary injury etc.

REGULATIONS

Scheme of the Course

A summary of four year course in MS Otolaryngology is presented as under:

Course Structure	**Components**	**Examination**
At the end of 02nd year of Programme	• Principles of general surgery • Relevant Basic Sciences (Anatomy, Physiology, Pharmacology, Pathology) • General Principles of ORL • Infective Pathologies of ORL • Trauma related to ORL • Principles of Nutrition, • Radiotherapy and Chemotherapy • Preop and postop management of patients undergoing surgery • Audiology	**Intermediate module Examination** at the end of 02nd year of M.S MCQs TOACS
At the end of final year of Programme	**Clinical Component** • **Professional Education in Otolaryngology** **Clinical Component** Training in Otolaryngology during 02nd, 03rd & 04th Years of the M.S Programme. Rotations in the related fields **Research Component of final Examination** Research work/ thesis writing must be completed and submitted atleast 6months before the end of training.	**Final Examination** at the end of 4th year of M.S Otolaryngology **Written:** Paper 1 & 2 of problem based MCQs and SEQs in the subject: **Clinical, TOACS/ OCSE & ORAL:** **Examination:** • Short Cases • Long Cases • TOACS/OCSE & ORAL • Continuous Internal Assessment Thesis evaluation and defence at the end of 4th year of M.S Otolaryngology Programme

Intermediate Module M.S. Otolaryngology Examination

Eligibility Criteria: To appear in the Final Examination the candidate shall be required:

i) To have submitted the result of passing Abridged Examination.

ii) To have submitted the certificate of completion of 2 years of training, issued by the Supervisor will be mandatory.

iii) To have submitted assessment proforma from the supervisor on 03 monthly basis achieving a cumulative score of **75%** (in 2nd year)

iv) To have submitted certificate of ongoing research by supervisor.

v) To have submitted evidence of payment of examination fee.

Intermediate Module Examination Schedule and Fee

I. Intermediate module Examination at completion of two years of training, will be held twice a year.

II. II. There will be a minimum period of 30 days between submission of applications for the examination and the conduction of examination.

III. Examination fee will be determined periodically by the university.

IV. The examination fee once deposited cannot be refunded / carried over to the next examination under any circumstances.

V. The Controller of Examination will issue Roll Number Slips on receipt of prescribed application form, documents satisfying eligibility criteria and evidence of payment of examination fee.

Written Exam

There will be 100 Single best answer type MCQs with a total of 200 marks as follows:-

I. Each correct answer to MCQ will carry 2 marks. Incorrect response will result in deductions of 0.5. Duration of this exam will be 100 minutes.

II. The candidates scoring 50% marks will pass the written examination and will then be eligible to appear in the TOACS.

TOACS part of Intermediate Module Exam

There will be 15 TOACS station covering the syllabus of 2nd year of training. Marks for each station will be 10 with a total of 150. Candidate securing 70% marks will pass the examination.

Declaration of Result

The Candidate will have to score 50% marks in written and 70% in TOACS to be declared successful.

A maximum total of four consecutive attempts (availed or unavail) will be allowed in the IMM during which the candidate will be allowed to continue his training program. If the candidate fails to pass his IMM within the above mentioned limit of four attempts, the candidate shall be removed from the training program, and the seat would fall vacant, stipend/ scholarship if any would be stopped.

Final Examination M.S. Otolaryngology

Eligibility Criteria: To appear in the Final Examination the candidate shall be required:

i) To have submitted the result of passing Abridged and intermediate module Examination.

ii) To have submitted the certificate of completion of training, issued by the Supervisor will be mandatory.

iii) To have achieved a cumulative score of 75% in Continuous Internal assessments of all training years.

iv) To have got the thesis accepted and will then be eligible to appear in Final Examination.

v) To have submitted no dues certificate from all relevant departments including library, hostel, cashier etc.

vi) To have submitted evidence of submission of examination fee.

Final Examination Schedule and Fee

a) Final examination will be held twice a year.

b) The candidates have to satisfy eligibility criteria before permission is granted to take the examination.

c) Examination fee will be determined and varied at periodic intervals by the University.

d) The examination fee once deposited cannot be refunded / carried over to the next examination under any circumstances.

e) The Controller of Examinations will issue an Admittance Card with a photograph of the candidate on receipt of prescribed application form, documents satisfying eligibility criteria and evidence of payment of examination fee. This card will also show the Roll Number, date / time and venue of examination.

Components of Final Examination

Written Part of Final Examination Total marks 500

Clinical, TOACS/OSCE & ORAL Total marks 500

Contribution of CIS to the Final Examination Total marks 100

Thesis Evaluation Total marks 400

Total 1500 Marks

Written Part of Final Examination

a) There will be two written papers which will cover the whole syllabus of the specialty of training with total marks of 500.

b) The written examination will consist of 200 single best answer type Multiple Choice Questions (MCQs) and 10 Short Essay Questions (SEQs). Each correct answer in the Multiple Choice Question paper will carry 02 marks, but an incorrect response will result in deduction of 0.5 mark. Each Short Essay Question will carry 10 marks.

c) The Total Marks of the Written Examination will be 500 and to be divided as follows:

- Multiple Choice Question paper Total Marks = 400
- Short Essay Question paper Total Marks = 100

Total **500 Marks**

d) The candidates scoring a score of 50% marks in multiple choice question paper and short essay question paper will pass the written part of the final examination and will become eligible to appear in the clinical and oral examination.

e) The written part result will be valid for three consecutive attempts for appearing in the Clinical and Oral Part of the Final Examination. After that the candidate have to re-sit the written part of the Final Examination.

Clinical, TOACS/OSCE & ORAL:

a) The Clinical and Toacs/OSCE & Oral will consist of 04 short cases, 01 long case and Oral Examination with 01 station for a pair of Internal and External Examiner Each short case will be of 07 minutes duration, 05 minute will be for examining the patient and 02 minutes for discussion. The Oral Examination will consist of laboratory data assessment, interpretation of Radiology images, ECG and others.

b) The Total Marks of Clinical & Oral Examination will be 500 and to be divided as follows:

Short Cases Total Marks	= 200
Long Case Total Marks	= 100
TOACS/OSCE & ORAL Total Marks	= 200
Total	**Marks 500**

c) A panel of four examiners will be appointed by the Vice Chancellor and of these two will be from RMU whilst the other two will be the external examiners. Internal examiner will act as a coordinator. In case of difficulty in finding an Internal Examiner in a given subject, the Vice Chancellor would, in consultation with the concerned Deans, appoint any relevant person with appropriate qualification and experience, outside the University as an examiner.

d) The internal examiners will not examine the candidates for whom they have acted as Supervisor and will be substituted by other internal examiner.

e) The candidates scoring 50% marks in each component of the Clinical & Oral Examination will pass this part of the Final Examination.

f) The candidates will have two attempts to pass the final examination with normal fee. A special administration fee of Rs.10,000 in addition to normal fee or the amount determined by the University from time to time shall be charged for further attempts.

Final Examination M.S. Otolaryngology

Eligibility Criteria: To appear in the Final Examination the candidate shall be required:

i) To have submitted the result of passing Abridged Examination.

ii) To have submitted the certificate of completion of training, issued by the Supervisor will be mandatory.

iii) To have achieved a cumulative score of 75% in Continuous Internal assessments of all training years.

iv) To have got the thesis accepted and will then be eligible to appear in Final Examination.

v) To have submitted no dues certificate from all relevant departments including library, hostel, cashier etc.

vi) To have submitted evidence of submission of examination fee.

Final Examination Schedule and Fee

a) Final examination will be held twice a year.

b) The candidates have to satisfy eligibility criteria before permission is granted to take the examination.

c) Examination fee will be determined and varied at periodic intervals by the University.

d) The examination fee once deposited cannot be refunded / carried over to the next examination under any circumstances.

e) The Controller of Examinations will issue an Admittance Card with a photograph of the candidate on receipt of prescribed application form, documents satisfying eligibility criteria and evidence of payment of examination fee. This card will also show the Roll Number, date / time and venue of examination.

Components of Final Examination

Written Part of Final Examination Total marks 500
Clinical, TOACS/OSCE & ORAL Total marks 500
Contribution of CIS to the Final Examination Total marks 100
Thesis Evaluation Total marks 400
Total 1500 Marks

Written Part of Final Examination

a) There will be two written papers which will cover the whole syllabus of the specialty of training with total marks of 500.

b) The written examination will consist of 200 single best answer type Multiple Choice Questions (MCQs) and 10 Short Essay Questions (SEQs). Each correct answer in the Multiple Choice Question paper will carry 02 marks, but an incorrect response will result in deduction of 0.5 mark. Each Short Essay Question will carry 10 marks.

c) The Total Marks of the Written Examination will be 500 and to be divided as follows:

- Multiple Choice Question paper Total Marks = 400
- Short Essay Question paper Total Marks = 100

Total 500 Marks

d) The candidates scoring a score of 50% marks in multiple choice question paper and short essay question paper will pass the written part of the final examination and will become eligible to appear in the clinical and oral examination.

e) The written part result will be valid for three consecutive attempts for appearing in the Clinical and Oral Part of the Final Examination. After that the candidate have to re-sit the written part of the Final Examination.

Clinical, TOACS/OSCE & ORAL:

a) The Clinical and Toacs/OSCE & Oral will consist of 04 short cases, 01 long case and Oral Examination with 01 station for a pair of Internal and External Examiner Each short case will be of 07 minutes duration, 05 minute will be for examining the patient and 02 minutes for discussion. The Oral Examination will consist of laboratory data assessment, interpretation of Radiology images, ECG and others.

b) The Total Marks of Clinical & Oral Examination will be 500 and to be divided as follows:

Short Cases Total Marks = 200
Long Case Total Marks = 100
TOACS/OSCE & ORAL Total Marks = 200

Total Marks 500

c) A panel of four examiners will be appointed by the Vice Chancellor and of these two will be from UHS whilst the other two will be the external examiners. Internal examiner will act as a coordinator. In case of difficulty in finding an Internal Examiner in a given subject, the Vice Chancellor would, in consultation with the concerned Deans, appoint any relevant person with appropriate qualification and experience, outside the University as an examiner.

d) The internal examiners will not examine the candidates for whom they have acted as Supervisor and will be substituted by other internal examiner.

e) The candidates scoring 50% marks in each component of the Clinical & Oral Examination will pass this part of the Final Examination.

f) The candidates will have two attempts to pass the final examination with normal fee. A special administration fee of Rs.10,000 in addition to normal fee or the amount determined by the University from time to time shall be charged for further attempts.

Declaration of Result

For the declaration of result

I. The candidate must get his/ her Thesis accepted.

II. The candidate must have passed the final written examination with 50% marks and the clinical & oral examination securing 50% marks. The cumulative passing score from the written and clinical/ oral examination shall be 60%. Cumulative score of 60% marks to be calculated by adding up secured marks of each component of the examination i.e written and clinical/ oral and then calculating its percentage.

III. The MS degree shall be awarded after acceptance of thesis and success in the final examination.

IV. On completion of stipulated training period, irrespective of the result (pass or fail) the training slot of the candidate shall be declared vacant.

Submission / Evaluation of Synopsis

1. The candidates shall prepare their synopsis as per guidelines provided by the Advanced Studies & Research Board, available on university website.
2. The research topic in clinical subject should have 30% component related to basic sciences and 70% component related to applied clinical sciences. The research topic must consist of a reasonable sample size and sufficient numbers of variables to give training to the candidate to conduct research, to collect & analyze the data.
3. Synopsis of research project shall be submitted by the end of the 2nd year of MS program. The synopsis after review by an Institutional Review Committee shall be submitted to the University for consideration by the Advanced Studies & Research Board, through the Principal / Dean /Head of the institution.

Submission of Thesis

1. Thesis shall be submitted by the candidate duly recommended by the Supervisor.
2. The minimum duration between approval of synopsis and submission of thesis shall be one year.
3. The research thesis must be compiled and bound in accordance with the Thesis Format Guidelines approved by the University and available on website.
4. The research thesis will be submitted along with the fee prescribed by the University.

Thesis Examination

a) The candidate will submit his/her thesis at least 06 months prior to completion of training.

b) The Thesis along with a certificate of approval from the supervisory will be submitted to the Registrar's office, who would record the date / time etc. and get received from the Controller of Examinations within 05 working days of receiving.

c) The Controller of Examinations will submit a panel of eight examiners within 07 days for selection of four examiners by the Vice Chancellor. The Vice Chancellor shall return the final panel within 05 working days to the Controller of Examinations for processing and assessment. In case of any delay the Controller of Examinations would bring the case personally to the Vice Chancellor.

d) The Supervisor shall not act as an examiner of the candidate and will not take part in evaluation of thesis.

e) The Controller of Examinations will make sure that the Thesis is submitted to examiners in appropriate fashion and a reminder is sent after every ten days.

f) The thesis will be evaluated by the examiners within a period of 06 weeks.

g) In case the examiners fail to complete the task within 06 weeks with 02 fortnightly reminders by the Controller of Examinations, the Controller of Examinations will bring it to the notice of Vice Chancellor in person.

h) In case of difficulty in find an internal examiner for thesis evaluation, the Vice Chancellor would, in consultation with the concerned Deans, appoint any relevant person as examiner in supersession of the relevant Clause of the University Regulations.

i) There will be two internal and two external examiners. In case of difficulty in finding examiners, the Vice Chancellor would, in

consultation with the concerned Deans, appoint minimum of three, one internal and two external examiners.

j) The total marks of thesis evaluation will be 400 and 60% marks will be required to pass the evaluation.

k) The thesis will be considered / accepted, if the cumulative score of all the examiners is 60%.

l) The clinical training will end at completion of stipulated training period but the candidate will become eligible to appear in the Final

Examination at completion of clinical training and after acceptance of thesis. In case clinical training ends earlier, the slot will fall vacant after stipulated training period.

Award of MS Otolaryngology Degree

After successful completion of the structured courses of MS Otolaryngology and qualifying Abridged. Intermediate module and Final examinations (Written, Clinical, TOACS/OSCE & ORAL and Thesis) the degree with title MS Otolaryngology shall be awarded.

CONTENT OUTLINE

MS Otolaryngology

Basic Sciences:

Student is expected to acquire comprehensive knowledge of Anatomy, Physiology, Pathology, and Pharmacology relevant to surgical practice appropriate for Otolaryngology

1. Anatomy

- *Clinical and functional anatomy with pathological and operative relevance*
- *Surgical approaches to the ear, nose, larynx and head & neck structures*
- *Histology and embryology of ear, nose, larynx and head & neck structures*
- Cell Biology: Cytoplasm – Cytoplasmic matrix, cell membrane, cell organelles, cytoskeleton, cell inclusions, cilia and flagella.
- Nucleus – nuclear envelope, nuclear matrix, DNA and other components of chromatin, protein synthesis, nucleolus, nuclear changes indicating cell death.
- Cell cycle, mitosis, meiosis, cell renewal.
- Cellular differentiation and proliferation.
- Tissues of Body: Light and electron microscopic details and structural basis of function, regeneration and degeneration. Confocal microscopy.
- The systems/organs of body – Cellular organization, light and electron microscopic features, structure function correlations, and cellular organization.

Embryology

- General Features of Human Development
- Features of mitotic and meiotic modes of cell division. Genetic consequences of meiotic division.
- Abnormal miototic and meiotic divisions of clinical importance.
- Gametogenesis: origin of germ cells.
- Oogenesis: prenatal and postnatal development of ova.
- Spermatogenesis: proliferation and maturation of male germ cells. Abnormal gametes, their clinical significance.
- Ovulation, fertilization and the consequences of fertilization.

Early Embryonic Development:

- Cleavage, morula and blastocyst formation and implantation.
- Formation of the three primary germ layers.
- List of the derivatives of the respective germ layers.

Period of the Growing Fetus:

- Various stages and salient features of the fetus development

Extraembryonic Membranes:

- Development, functions and anomalies of yolk sac, amnion, chorion, allantois, umbilical cord and placenta.

Development of the External Body Form:

- Shaping of the head and neck. Common developmental anomalies associated.

The Branchial Apparatus:

- Development and fate of the bronchial grooves, arches and pouches. Their derivatives and anomalies.

Teratogenesis:

- Factors known to be involved in the development of congenital anomalies especially related to the otolaryngological system.
- Concept of critical periods.

Histology:

Structural and Functional Organization of the Tissues of Body

- Classification of tissues and identification of various tissues particularly those related to the musculoskeletal system, in routine histological preparations under the light microscope.

The Epithelial Tissue

- General structure, functions and classification of epithelia
- Their location in the body
- General characters of serous and mucous membranes
- General structural features of exocrine and endocrine glands

The Connective Tissue

- Cartilage
- Structure of bone marrow. Cell lines seen in haemopoiesis.
- Factors required for bone growth.

The Muscular Tissue

- Structural and functional differences between the smooth skeletal and cardiac types of muscle.
- Fine structure of skeletal and cardiac muscle fibers, and its relationship to the mechanism of contraction.
- Specialized conducting tissue of the heart.

The Neural Tissue

- The neuron, morphology of the perikaryon and its processes.
- Coverings of the axons in the peripheral nerves and the central nervous system.
- Types of neuroglia and their functions.
- Process of myelination in the peripheral nerves and the central nervous system.
- Axon terminals and synapses. Nerve fiber degeneration and regeneration.

Surface and Imaging Anatomy

Upper respiratory system including

- Ear (sense of hearing enters via cranial nerve)
- Nose.
- Paranasal Sinuses.
- Oral Cavity
- Pharynx.
- Larynx
- Salivary Glands
- Head and neck

- Blood supply, Nerve supply and the Lymphatic drainage of the ear, nose, Throat and trachea, larynx and accessory sinuses
- Anatomy of the Central Nervous System with particular reference to ear, nose and throat
- Gross Anatomy of neck and chest in relation to trachea and oesophagus
- Comparative study of Anatomy of the ear, nose and throat in relation to lower animals.

2. Physiology

- Physiology of ear, nose, throat and oesophagus
- ¯Sound Transmission
- Functions of the nose
- Physiology of olfaction
- Physiology of hearing
- Middle ear impedance transformer mechanism
- Vestibular function in maintaining equilibrium
- Auditory pathway
- Physiology of swallowing
- Speech generation
- Endocrine glandular function, particularly thyroid, parathyroid and pituitary glands
- Shock and circulatory support
- Exocrine glands, particularly salivary glands
- Special senses, particularly hearing, balance and olfaction

3. Pharmacology

- The Evolution of Medical Drugs
- British Pharmacopia
- Introduction to Pharmacology
- Receptors
- Mechanisms of Drug Action
- Pharmacokinetics
- Pharmacokinetic Process
- Absorption
- Distribution
- Metabolism
- Desired Plasma Concentration

- Volume of Distribution
- Elimination
- Elimination rate constant and half life
- Creatinine Clearance
- Drug Effect
- Beneficial Responses
- Harmful Responses
- Allergic Responses
- Drug Dependence, Addiction, Abuse and Tolerance
- Drug Interactions
- Dialysis
- Drug use in pregnancy and in children
- Ototoxicity and medication

4. Pathology

Pathological alterations at cellular and structural level in infection, inflammation, ischaemia, neoplasia and trauma affecting the ear, nose and upper respiratory tract

Cell Injury and adaptation

- Reversible and Irreversible Injury
- Fatty change, Pathologic calcification
- ¯Necrosis and Gangrene
- Cellular adaptation
- Atrophy, Hypertrophy,
- Hyperplasia, Metaplasia, Aplasia

Inflammation

- Acute inflammation
- Cellular components and chemical mediators of acute inflammation
- Exudates and transudate
- Sequelae of acute inflammation
- Chronic inflammation
- Etiological factors and pathogenesis
- Distinction between acute and chronic (duration) inflammation
- Histologic hallmarks
- Types and causes of chronic inflammation, non-granulomatous & granulomatous,

Haemodynamic disorders

- Etiology, pathogenesis, classification and morphological and clinical manifestations of Edema, Haemorrhage, Thrombosis, Embolism, Infarction & Hyperaemia

- Shock; classification etiology, and pathogenesis, manifestations.
- Compensatory mechanisms involved in shock
- Pathogenesis and possible consequences of thrombosis
- Difference between arterial and venous emboli

Neoplasia

- Dysplasia and Neoplasia
- Benign and malignant neoplasms
- Etiological factors for neoplasia
- Different modes of metastasis
- Tumor staging system and tumor grade

Immunity and Hypersensitivity

- Immunity
- Immune response
- Diagnostic procedures in a clinical Immunology laboratory
- Protective immunity to microbial diseases
- Tumour immunology
- Immunological tolerance, autoimmunity and autoimmune diseases.
- Transplantation immunology
- Hypersensitivity
- Immunodeficiency disorders
- Immunoprophylaxis & Immunotherapy

Related Microbiology

- Role of microbes in various otolaryngological disorders
- Infection source
- Nosocomial infections
- Bacterial growth and death
- Pathogenic bacteria
- Vegetative organisms
- Spores
- Important viruses
- Important parasites
- Surgically important microorganisms
- Sources of infection
- Asepsis and antisepsis
- Sterilization and disinfection
- Infection prevention
- Immunization
- Personnel protection from communicable diseases
- Use of investigation and procedures in laboratory
- Basics in allergy and immunology

Special Pathology

- Foreign body in Ear, Nose & Throat
- Otitis media
- Otitis externa
- Mastoiditis
- Rupture of tympanic membrane
- Meniere's disease
- Nasal allergy
- Nasal Polyp
- Epistaxis
- Sinusitis
- Hearing Loss
- Tonsillitis and peritonsillar abscess
- Pharyngitis
- Ludwig's Angina
- Hoarseness of voice
- Laryngotracheitis
- Laryngeal obstruction
- Diphtheria
- Indication of tracheostomy
- Carcinoma of Larynx
- Wax in ear, Haematoma auris, Furunculosis
- Indications for and interpretation of results of common biochemical and haematological tests
- Macroscopic and microscopic appearances of common or important diseases found in otolaryngology

MS Otolaryngology

Principles of General Surgery for Abridged Examination

- History of surgery
- Preparing a patient for surgery
- Principles of operative surgery: asepsis, sterilization and antiseptics
- Surgical infections and antibiotics
- Basic principles of anaesthesia and pain management
- Acute life support and critical care:
- Pathophysiology and management of shock
- Fluids and electrolyte balance/ acid base metabolism
- Haemostasis, blood transfusion
- Trauma: assessment of polytrauma, triage, basic and advanced trauma
- Accident and emergency surgery
- Wound healing and wound management
- Nutrition and metabolism
- Principles of burn management
- Principles of surgical oncology
- Principles of laparoscopy and endoscopy
- Organ transplantation
- Informed consent and medicolegal issues
- Molecular biology and genetics
- Operative procedures for common surgical manifestations e.g. cysts, sinuses, fistula, abscess, nodules, basic plastic and reconstructive surgery

Common surgical skill

Incision of skin and subcutaneous tissue:

- Langer's lines
- Healing mechanism
- Choice of instrument
- Safe practice

Closure of skin and subcutaneous tissue:

- Options for closure
- Suture and needle choice
- Safe practice

Knot tying:

- Choice of material
- Single handed
- Double handed
- Superficial
- Deep

Tissue retraction:

- Choice of instruments
- Placement of wound retractors
- Tissue forceps

Use of drains:

- Indications
- Types
- Insertion
- Fixation
- Management/removal

Incision of skin and subcutaneous tissue:

- Ability to use scalpel, diathermy and scissors

Closure of skin and subcutaneous tissue:

- Accurate and tension free apposition of wound edges

Haemostasis:

- Control of bleeding vessel (superficial)
- Diathermy
- Suture ligation
- Tie ligation
- Clip application
- Plan investigations
- Clinical decision making
- Case work up and evaluation; risk management

Pre-operative assessment and management:

- Cardiorespiratory physiology
- Diabetes mellitus
- Renal failure
- Pathophysiology of blood loss
- Pathophysiology of sepsis
- Risk factors for surgery
- Principles of day surgery
- Management of comorbidity

Intraoperative care:

- Safety in theatre
- Sharps safety
- Diathermy, laser use
- Infection risks
- Radiation use and risks
- Tourniquets
- Principles of local, regional and general anaesthesia

Post-operative care:

- Monitoring of postoperative patient
- Postoperative analgesia
- Fluid and electrolyte management
- Detection of impending organ failure
- Initial management of organ failure
- Complications specific to particular operation
- Critical care

Blood products:

- Components of blood
- Alternatives to use of blood products
- Management of the complications of blood product transfusion including children

Antibiotics:

- Common pathogens in surgical patients
- Antibiotic sensitivities
- Antibiotic side-effects
- Principles of prophylaxis and treatment

Safely assess the multiply injured patient:

- History and examination
- Investigation
- Resuscitation and early management
- Referral to appropriate surgical subspecialties

Technical Skills

- Central venous line insertion
- Chest drain insertion
- Bleeding diathesis & corrective measures, e.g. warming, packing
- Clotting mechanism; Effect of surgery and trauma on coagulation
- Tests for thrombophilia and other disorders of coagulation

- Methods of investigation for suspected thromboembolic disease
- Anticoagulation, heparin and warfarin
- Role of V/Q scanning, CT angiography and thrombolysis
- Place of pulmonary embolectomy
- Awareness of symptoms and signs associated with pulmonary embolism and DVT
- Role of duplex scanning, venography and d-dimmer measurement
- Initiate and monitor treatment

Diagnosis and Management of Common Surgical Conditions:

- Abdominal pain
- Vomiting
- Trauma
- Urological conditions (Urinary retention)
- Constipation
- Head / neck swellings
- Abscess

In terms of general experience it is expected that trainees would have gained exposure to the following procedures and to be able to perform those marked (*) under direct supervision.

- Lymph node biopsy*
- Insertion of CV lines
- Excision of skin lesions*
- Incision and drainage of abscess*
- Insertion of pleural drain*
- Insertion of suprapubic catheter*

Specialty Component for Final Examination

Students should be familiar with typical clinical presentation, key physical findings, radiological findings and differential diagnosis, initial treatment, and referral indications for common otolaryngological diseases

1. Otology

- Examination of Ear.
- Aetiopathology of Inflammatory Conditions of External & Middle Ear
- Pathology of Cochlea.
- Pathology of Vestibular System.
- Diseases of External Ear.
- Ear Trauma.
- Plastic Surgery of the Ear.
- Acute Suppurative Otitis Media.
- Management of Acute Suppurative Otitis Media
- Chronic Suppurative Otitis Media.
- Management of Chronic Suppurative Otitis Media.
- Reconstruction of the Ear.
- Complication of Suppurative Otitis Media.
- Otalgia.
- Otosclerosis.
- Diseases of Temporal Bone.
- Sensorineural Hearing Loss.
- Sudden & Fluctuant Sensorineural Hearing Loss.
- Vertigo.
- Meniere's disease.
- Ototoxicity.
- Vestibular Schwannoma.
- Epithelial Tumours of External Auditory Meatus.
- Glomus & Other Tumours of the Ear.
- Disorders of Facial Nerve.
- Surgery of the Vestibular System.
- Cochlear Implants.
- Presbycusis.
- Implantable Hearing Devices.

2.Rhinology

- Examination of Nose.
- Conditions of the External Nose.
- Congenital Anomalies of the Nose.
- Evaluation of the Nasal Airway & Nasal Challenge.

- Abnormalities of Smell.
- Mechanism & Treatment of Allergic Rhinitis.
- Food Allergy & Intolerance.
- Infective Rhinitis & Sinusitis.
- Intrinsic Rhinitis.
- Nasal Polyps.
- The Nasal Septum.
- Surgical Management of Sinusitis.
- Complications of Sinusitis.
- Cerebrospinal Fluid Rhinorrhoea.
- The Upper Airways & their relation to the respiratory System.
- Fracture of Facial Skeleton.
- Rhinoplasty.
- Epistaxis.
- Snoring & Sleep Apnoea.
- Non-Healing Granulomas.
- Facial pain & Headache.
- Aspects of Dental Surgery for Otorhinolaryngology.
- Trans-Sphenoidal Hypophysectomy.
- The Orbit.
- Neoplasms of Nose & Paranasal sinuses.

3. Laryngology & Head, Neck

- Examination & endoscopy of the upper aerodigestive tract.
- Oral cavity.
- Acute & chronic infections of pharynx & tonsils.
- Acute & chronic laryngitis.
- Sleep apnoea.
- Adenoidal and tonsillar pathology
- Disorders of voice.

- Management of obstructed airway & tracheostomy.
- Trauma & stenosis of larynx.
- Neurological affections of larynx & pharynx.
- Pharyngeal pouches.
- Tumours of the larynx.
- Angiofibroma.
- Nasopharynx (the postnasal space).
- Tumours of oropharynx & lymphomas of the head & neck
- Benign diseases of neck.
- Malignant neck diseases;
- The thyroid & parathyroid gland.
- Non-neoplastic salivary gland diseases.
- Benign salivary gland tumours.
- Malignant salivary gland tumours.
- Tumours of infratemporal fossa & parapharyngeal space.
- Cysts, granulomas & tumours of the jaw, nose & sinuses.
- The esophagus in otolaryngology.
- Facial plastic surgery.
- Plastic & reconstructive surgery of the head & neck.
- Terminal Care of Patients with head & neck Cancer.

4.Audiology

- Acoustics
- Computers in Audiology.
- Epidemiology.
- Otological Symptoms & Emotional Disturbances.
- Clinical tests of Hearing & Balance.
- Pharmacological Treatment of Hearing & Balance Disorders.
- Legal & Ethical Matters.
- Prevention of Hearing & Balance Disorders.

- Hearing Overview.
- Causes of Hearing Disorders.
- Noise & the Ear.
- Diagnostic Audiometry.
- Audiological Rehabilitation.
- Hearing Aids.
- Cochlear Implants.
- Tactile Aids.
- Central Auditory Dysfunction
- Tinnitus
- Overview of Balance
- Causes of Balance Disorders.
- Diagnostic Testing of Vestibular System
- Rehabilitation of Balance Disorders.

5.Paediatric Otolaryngology

- Improving Paediatric Otolaryngological Consultation.
- Genetic Factors & Deafness.
- The Causes of Deafness.
- Testing Hearing in Children.
- Screening & Surveillance for Hearing Impairment in Preschool Children.
- Otitis Media with Effusion.
- Acute Suppurative Otitis Media in Children.
- Chronic Suppurative Otitis Media in Children.
- Surgery of Congenital Abnormalities of the External & Middle Ear.
- Management of Hearing Impaired Child.
- Cochlear Implantation in Children.
- Vestibular Disorders in Children.
- Speech & Language.
- Foreign Bodies in the Ear & Nose.

- Congenital Anomalies of the Nose.
- Craniofacial Anomalies.
- Nasal Obstruction & Rhinorrhoea in Infants & Children.
- Tonsils & Adenoids.
- Dental development, Orthodontics, Cleft lip& Cleft palate.
- Sleep Apnoea.
- Stertor & Stridor.
- Congenital Disorders of Larynx, Trachea & Bronchi.
- Stenosis of Larynx.
- Acute Laryngeal Infections.
- Foreign Bodies in Larynx & Trachea.
- Tracheostomy & Decannulation.
- Home care of Tracheostomised Child.
- Neonatal Pulmonary Disorders.
- Diseases of the Esophagus in Children.
- Branchial cleft Anomalies, Thyroglossal cysts & Fistulae.
- Tumours of the Head & Neck in Children.
- Salivary Glands Disorders in Children.
- The Drooling Child.
- Recurrent Respiratory Papillomatosis.
- Paediatric Anesthesia.

1. **Emergencies in Otolaryngology-Head and Neck Surgery**

- Airway Obstruction.
- Inspired or Ingested Foreign Bodies.
- Sore Throat or Difficulty Swallowing.
- Epistaxis.
- Ear Complaints.
- Head and Neck Infections.
- Laryngeal and Tracheal Trauma.
- Facial Trauma

2. **Rehabilitation**

- Speech rehabilitation following laryngectomy
- Rehabilitation following maxillectomy – obturator
- Management of hearing loss
- Hearing aids
- Bone anchored hearing aids
- Cochlear implants
- Radiotherapy, Brachytherapy, Chemotherapy, Palliative Care

Recent Advances:

- Advances in laser in ENT applications
- Ultrasonic scalpel
- Gamma Knife
- Computer assisted surgeries
- Intra -Arterial Local Chemotherapy
- Powered instruments

Common Otolaryngological Skills and Procedures

- On completion of the initial training in Part I, the trainees will be competent in all aspects of the basic, operative and non operative care of surgical patients
- During Part II training, they will understand the importance of Otolaryngological care and management with particular reference to common Otolaryngological presentations recognizing and preventing secondary. They will be capable of resuscitating, assessing and initiating the surgical management of patients deteriorating as a result of local and systemic complications. They will demonstrate sound judgment when seeking more senior support, prioritizing medical interventions and escalating the level of medical care.
- Administration of antibiotics in the surgical patient
- Use of blood and its products

- The role/complications of diathermy
- Pain relief in surgery
- Thrombo-embolic
- Prevention and management
- Wound care and nosocomial infection
- Suture techniques and materials
- Initial assessment and management of airway problems
- Initial management of foreign bodies in ENT
- Initial epistaxis and its management
- Initial management of facial fractures

Radiological Interpretations:

- Plain films of the head, neck, sinuses and chest.
- CT scans of the sinuses, petrous bone, neck, chest and brain
- MRI scans of the sinuses, brain, neck, chest, head
- Contrast radiology of swallowing, sialography
- Ultrasound of the neck

Audiology and vestibular testing

- Interpretation of report from an Audiologist
- Simple tests for hearing including a pure tone audiogram, loudness discomfort levels and a tympanogram
- Brain stem evoked response audiometry
- Otoacoustic emissions
- Cortical evoked audiometry
- Electronystagmograph
- Equitest
- Rotating chair test

- Familiarity with different types of hearing aids
- Technique of mould impression
- Clinical neurological examination
- Ophthalmoscopy
- Lumbar puncture
- Electromyograph
- Electroneuronograph
- Electroencephalograph

Otology

- Examination of the ear – Auriscope
- Examination under the microscope – de wax
- External meatus and mastoid cavity
- Suction clearance for otitis externa and insertion of wick
- Removal of simple foreign bodies
- Myringotomy and Grommet insertion
- Incision for mastoid surgery
- Clinical examination of hearing
- Clinical examination of vestibular function

Rhinology

- Examination of the nose and sinuses – anterior
- Rhinoscopy
- Examination of smell
- Rigid endoscopy
- Flexible nasendoscopy
- Examination of the post nasal space
- Suction under endoscopic control of surgical cavity
- Insertion and removal of nasal pack and or balloon for epistaxis
- Simple polypectomy
- Biopsy of the nose and nasopharynx

- Antral washout in the management of acute sinusitis
- Removal of simple foreign bodies
- Drainage of septal haematoma
- Reduction of fractured nose
- Submucous resection
- Reduction of turbinates

Laryngology

- Examination of the larynx – indirect
- Laryngoscopy
- Flexible laryngoscopy
- Direct laryngoscopy
- Biopsy of the larynx, pharynx and oral cavity
- (including tongue)
- Adenoidectomy and tonsillectomy
- Removal of simple foreign bodies from the oropharynx and hyper pharynx
- Incision/drainage of Quinsy

Neck

- Examination of the neck
- Emergency and elective tracheostomy
- Fine needle aspiration biopsy of a neck lump

Thesis Component

(4th year of MS Otolaryngology Programme)

RESEARCH/ THESIS WRITING

Total of one year will be allocated for work on a research project with thesis writing. Project must be completed and thesis be submitted before the end of training. Research can be done as one block in 5th year of training or it can be stretched over five years of training in the form of regular periodic rotations during the course as long as total research time is equivalent to one calendar year.

Research Experience

The active research component program must ensure meaningful, supervised research experience with appropriate protected time for each resident while maintaining the essential clinical experience. Recent productivity by the program faculty and by the residents will be required, including publications in peer-reviewed journals. Residents must learn the design and interpretation of research studies, responsible use of informed consent, and research methodology and interpretation of data. The program must provide instruction in the critical assessment of new therapies and of the surgical literature. Resident should be advised and supervised by qualified staff members in the conduct of research.

Clinical Research

Each resident will participate in at least one clinical research study to become familiar with:

1. Research design.
2. Research involving human subjects including informed consent and operations of the Institutional Review Board and ethics of human experimentation.
3. Data collection and data analysis
4. Research ethics and honesty
5. Peer review process

This usually is done during the consultation and outpatient clinic rotations.

Case Studies or Literature Reviews

Each resident will write, and submit for publication in a peer-reviewed journal, a case study or literature review on a topic of his/her choice.

Laboratory Research

Bench Research

Participation in laboratory research is at the option of the resident and may be arranged through any faculty member of the Division. When appropriate, the research may be done at other institutions.

Research involving animals

Each resident participating in research involving animals is required to:

1. Become familiar with the pertinent Rules and Regulations of the RMU Rawalpindi i.e. those relating to "Health and Medical Surveillance Program for Laboratory Animal Care Personnel" and "Care and Use of Vertebrate Animals as Subjects in Research and Teaching"
2. Read the "Guide for the Care and Use of Laboratory Animals"
3. View the videotape of the symposium on Humane Animal Care

Research involving Radioactivity

Each resident participating in research involving radioactive material is required to

1. Attend a Radiation Review session.

2. Work with an Authorized User and receive appropriate instruction from him/her.

METHODS OF INSTRUCTION/COURSE CONDUCTION

As a policy, active participation of students at all levels will be encouraged.

Following teaching modalities will be employed:

1. Lectures
2. Seminar Presentation and Journal Club Presentations
3. Group Discussions
4. Grand Rounds
5. Clinico-pathological Conferences
6. SEQ as assignments on the content areas
7. Skill teaching in ICU, Operation theatres, emergency and ward settings
8. Attend genetic clinics and rounds for at least one month.
9. Self study, assignments and use of internet
10. Bedside teaching rounds in ward
11. OPD & Follow up clinics
12. Long and short case presentations

In addition to the conventional teaching methodologies interactive strategies like conferences will also be introduced to improve both communication and clinical skills in the upcoming consultants. Conferences must be conducted regularly as scheduled and attended by all available faculty and residents. Residents must actively request autopsies and participate in formal review of gross and microscopic pathological material from patients who have been under their care. It is essential that residents participate in planning and in conducting conferences.

1. Clinical Case Conference

Each resident will be responsible for at least one clinical case conference each month. The cases discussed may be those seen on either the consultation or clinic service or during rotations in specialty areas. The resident, with the advice of the attending Surgeon on the Consultation Service, will prepare and present the case(s) and review the relevant literature.

2. Monthly Student Meetings

Each affiliated medical college approved to conduct training for MS Otolaryngology will provide a room for student meetings/discussions such as:

a. Journal Club Meeting

b. Core Curriculum Meetings

c. Skill Development

a. Journal Club Meeting

A resident will be assigned to present, in depth, a research article or topic of his/her choice of actual or potential broad interest and/or application. Two hours per month should be allocated to discussion of any current articles or topics introduced by any participant. Faculty or outside researchers will be invited to present outlines or results of current research activities. The article should be critically evaluated and its applicable results should be highlighted, which can be incorporated in clinical practice. Record of all such articles should be maintained in the relevant department.

b. Core Curriculum Meetings

All the core topics of Otolaryngology should be thoroughly discussed during these sessions. The duration of each session should be at least two hours once a month. It should be chaired by the chief resident (elected by the residents of the relevant discipline). Each resident should be given an opportunity to brainstorm all topics included in the course and to generate new ideas regarding the improvement of the course structure

c. Skill Development

Two hours twice a month should be assigned for learning and practicing clinical skills.

List of skills to be learnt during these sessions is as follows:

1. Residents must develop a comprehensive understanding of the indications, contraindications, limitations, complications, techniques, and interpretation of results of those technical procedures integral to the discipline.

2. Residents must acquire knowledge of and skill in educating patients about the technique, rationale and ramifications of procedures and in obtaining procedure-specific informed consent. Faculty supervision of residents in their performance is required, and each resident's experience in such procedures must be documented by the program director.
3. Residents must have instruction in the evaluation of medical literature, clinical epidemiology, clinical study design, relative and absolute risks of disease, medical statistics and medical decision-making.
4. Training must include cultural, social, family, behavioral and economic issues, such as confidentiality of information, indications for life support systems, and allocation of limited resources.
5. Residents must be taught the social and economic impact of their decisions on patients, the primary care physician and society. This can be achieved by attending the bioethics lectures
6. Residents should have instruction and experience with patient counseling skills and community education.
7. This training should emphasize effective communication techniques for diverse populations, as well as organizational resources useful for patient and community education.
8. Residents should have experience in the performance of Otolaryngology related clinical laboratory and radionuclide studies and basic laboratory techniques, including quality control, quality assurance and proficiency standards
9. Each resident will manage at least the following essential Otolaryngological cases and observe and participate in each of the following procedures, preferably done on patients under supervision initially and then independently. (pg. 33-35)

LOG BOOK

The residents must maintain a log book and get it signed regularly by the supervisor. A complete and duly certified log book should be part of the requirement to sit for MS examination. Log book should include adequate number of diagnostic and therapeutic procedures observed and performed, the indications for the procedure, any complications and the interpretation of the results, routine and emergency management of patients, case presentations in CPCs, journal club meetings and literature review.

Proposed Format of Log Book is as follows:

Candidate's Name: _____

Roll No. _____

The above mentioned procedures shall be entered in the log book as per format:

Procedures Performed

Sr.#	Date	Name of Patient, Age, Sex & Admission No.	Diagnosis	Procedure Performed	Supervisor's Signature
1					
2					
3					
4					

Emergencies Handled

Sr.#	Date	Name of Patient, Age, Sex & Admission No.	Diagnosis	Procedure/ Management	Supervisor's Signature
1					
2					
3					
4					

Case Presented

Sr.#	Date	Name of Patient, Age, Sex & Admission No.	Case Presented	Supervisor's Signature
1				
2				
3				
4				

Seminar/Journal Club Presentation

Sr.#	Date	Topic	Supervisor's signature
1			
2			
3			
4			

Evaluation Record
(Excellent, Good, Adequate, Inadequate, Poor)

At the end of the rotation, each faculty member will provide an evaluation of the clinical performance of the fellow.

Sr.#	**Date**	**Method of Evaluation (Oral, Practical, Theory)**	**Rating**	**Supervisor's Signature**
1				
2				
3				
4				

EVALUATION & ASSESSMENT STRATEGIES

Assessment

It will consist of action and professional growth oriented ***student-centered integrated assessment*** with an additional component of ***informal internal assessment***, ***formative assessment*** and measurement-based ***summative assessment.***

Student-Centered Integrated Assessment

It views students as decision makers in need of information about their own performance. Integrated Assessment is meant to give students responsibility for deciding what to evaluate, as well as how to evaluate it, encourages students to **"own"** the evaluation and to use it as a basis for self-improvement. Therefore, it tend to be growth-oriented, student-controlled, collaborative, dynamic, contextualized, informal, flexible and action-oriented.

In the proposed curriculum, it will be based on:

- Self Assessment by the student
- Peer Assessment
- Informal Internal Assessment by the Faculty

Self Assessment by the Student

Each student will be provided with a pre-designed self-assessment form to evaluate his/her level of comfort and competency in dealing with different relevant clinical situations. It will be the responsibility of the student to correctly identify his/her areas of weakness and to take appropriate measures to address those weaknesses.

Peer Assessment

The students will also be expected to evaluate their peers after the monthly small group meeting. These should be followed by a constructive feedback according to the prescribed guidelines and should be non-judgmental in nature. This will enable students to become good mentors in future.

Informal Internal Assessment by the Faculty

There will be no formal allocation of marks for the component of Internal Assessment so that students are willing to confront their weaknesses rather than hiding them from their instructors.

It will include:

a. Punctuality

b. Ward work

c. Monthly assessment (written tests to indicate particular areas of weaknesses)

d. Participation in interactive sessions

Formative Assessment

Will help to improve the existing instructional methods and the curriculum in use

Feedback to the faculty by the students:

After every three months students will be providing a written feedback regarding their course components and teaching methods. This will help to identify strengths and weaknesses of the relevant course, faculty members and to ascertain areas for further improvement.

Summative Assessment

It will be carried out at the end of the programme to empirically evaluate cognitive, psychomotor and affective domains in order to award diplomas for successful completion of courses.

Intermediate Module Examination
TOTAL MARKS: 350

All candidates will have to appear in intermediate examination at the end of second calendar year.

Written Exam:

There will be 100 single best answer type MCQs with a total of 200 marks as follows

Anatomy	05
Physiology	05
Pathology	05
Pharmacology	05
Principal of general surgery	25
General ENT	45
Trauma related to ORL	05
Audiology	05

Each correct answer to MCQ will carry 2 marks. Incorrect response will result in deductions of 0.5. Duration of this exam will be 150 minutes.

TOACS

- 15 stations covering all the sallybus
- 5 minutes on each station
- 10 marks for each station

The candidates scoring 50% marks in written and 70% marks in TOACS will pass the examination.

Four attempts (availed or unavailed) will be allowed to pass the written examination on three consecutive subsequent occasions.

MS Otolaryngology
Total Marks: 1500

All candidates admitted in MS Otolaryngology course shall appear in Final examination at the end of structured training programme (end of 4th calendar year and after clearing Abridged examinations)

There shall be two written papers of 250 marks each, Clinical, TOACS/OSCE & ORAL of 500 marks, log book assessment of 100 marks and thesis examination of 400 marks.

MS Otolaryngology

Clinical Examination

Total Marks: 1500

Topics included in paper 1

1. Otology	(25 MCQs) (1 SEQs)
2. Rhinology	(25 MCQs) (1 SEQs)
3. Laryngology & Head, Neck	(30 MCQs) (2 SEQs)
4. Audiology	(20 MCQs) (1 SEQs)

Topics included in paper 2

1. Paediatric Otolaryngology	(50 MCQs) (2 SEQs)
2. Emergencies in Otolaryngology	(30 MCQs) (2 SEQs)
3. Rehabilitation	(20 MCQs) (1 SEQs)

Components of final clinical examination

Theory

Paper I 250 Marks 3 hours

5 SEQs 50 Marks

100 MCQs 200 Marks

Paper II 250 Marks 3 Hours

5 SEQs 50 Marks

100 MCQs 200 Marks

Total = 500 Marks

Only those candidates who pass in theory papers, will be eligible to appear in the Clinical, TOACS/OSCE & ORAL.

Clinical, TOACS/OSCE & ORAL

Four short cases 200 Marks

One long case: 100 Marks

Toacs/OSCE & Oral 200 Marks

Continuous Internal Assessment 100 Marks

MS Otolaryngology

Thesis Examination

Total Marks: 400

All candidates admitted in MS Otolaryngology course shall appear in thesis examination at the end of 4th year of the MS programme. The examination shall include thesis evaluation with defense.

RECOMMENDED BOOKS

1. Johnson. A case Approach to Open Structure Rhinoplasty with DVD-ROM

2. Dhingra. Diseases of ENT

3. Lore. An Atlas of Head and Neck Surgery. 4th ed.

4. Glasscock. Glasscock-Shambaugh Surgery of the Ear. 5th ed.

5. Logan. Mcminn's Clor Atlas of Head and Neck Anatomy. 3rd ed.

6. Prescott. Oxford Hand Book of ENT

7. Miller. The Otolaryngolodic Clinics of North America February

8. Kerr. Scott-Brown's Otolaryngology. 6th ed.;1997

9. Watkinson. Stell and Maran's Head and Neck Surgery. 4th ed.

10. Bailey. Head and Neck Surgery –Otolaryngology. 3rd ed.

11. Masud. Text Book of ENT.

12. Wormald. Endoscopic Sinus Surgery

13. Water. Otolaryngology Basic Science and Review.

14. Grewal. Atlas of Surgery of the Facial Nerve.

15. Hazarika. Clinical and Operative Methods in ENT and Head and Neck Surgery

16. Maniglia. Surgical reconstruction of the Face and Anterior Skull Base.

17. Sheen J. H. Assymetrical Alar Base: Secodary Rhinoplasty Video.

18. Salvi-Hende. Auditory System Plasticityand Regeneration

19. Ballenger. Ballenger's Otolaryngology: Head and Neck

20. Rubin J. S. Diagnosis and Treatment of Voice Disorders. 3rd Ed.

21. Yousem M. Head and Neck Surgery: Case Review Series. 2nd ed. (PB)

22. CD-ROM – Laryngoscope 1995-96 CD-ROM

23. Aperilla

24. The British Journal of Otolaryngology

25. Journal of Academy of Otolaryngology and Head and Neck Surgery

26. Otolaryngology Clinics of North America

27. American journal of Otolaryngology

28. Scott Brown Text Book of Otolaryngology

29. Fathalla M. F. and Fathalla M. M. F. A Practical Guide

30. for Health Researcher. Cairo: World Health Organization; 2004.

31. Rana M. H., Ali S. Mustafa M. ***A Handbook of Behavioural Sciences for Medical and Dental***

APPENDIX "E"

(see Regulation 9-iii)

MANDATORY WORKSHOPS

1. Each candidate of MD/MS/MDS program would attend the 04 mandatory workshops and any other workshop as required by the University.
2. The four mandatory workshops will include the following
   a. Research Methodology and Biostatistics
   b. Synopsis/Writing
   c. Communications Skills
   d. Introduction to computer/ Information Technology and Software program
3. The workshops will be held on 03 monthly basis.
4. An appropriate fee for each workshop wi;ll be charged.
5. Each workshop will be of 02 -05 days duration.
6. Certificate of attendance will be issued upon satisfactory completion of workshops

APPENDIX "F"

(See Regulation 9xxiii,13,14 & 16)

CONTINUOUS INTERNAL ASSESSMENTS

a) Workplace Based Assessments

Workplace based assessments will consist of Generic as well as Specialty Specific competency Assessments and Multisource Feedback Evaluation.

Generic Competency Training & Assessments

The Candidates of all MD/MS/MDS programs will be trained and assessed in the following five generic competencies.

i. Patient Care.

a. Patient care competency will include skills of history taking. Examination , diagnosis, plan of investigation, clinical judgment, plan of treatment, consent, counseling, plan of follow up, communication with patient/ relatives and staff.

b. The candidate shall learn patient care through ward teaching, departmental conferences, morbidity and mortality meetings, core curriculum lectures and training in procedures and operations.

c. The candidate will be assessed by the supervisor during presentation of cases on clinical ward rounds, scenario based discussion on patient management, multisource feedback evaluation. Director observation of Procedures (DOPS) and operating room assessments.

ii. Medical Knowledge and Research

a. The candidate will learn basic factual knowledge of illnesses relevant to the specialty through lecture/ discussions on topics selected from the syllabus, small group tutorials and bed side round.

b. The medical knowledge/skill will be assessed by the teacher during case based discussions and presentations to the supervisor/Consultants/ Senior Postgraduate trainees.

c. The candidate will be trained in designing research project. Data collection, data analysis and presentation of results by the supervisor.
d. The acquisition of research skill will be assessed as per regulations governing thesis evaluation and its acceptance.

iii. Practice and System Based Learning

a. This competency will be learnt from journal club, review of literature, policies and guidelines, audit projects, medical error investigation, root cause analysis and awareness of healthcare facilities.
b. The assessment methods will include case studies, presentation in morbidity and mortality review meetings and presentation of projects if any.
c. These methods assessment shall have equal weight-age.

iv. Communication Skills

a. These will be learnt from role models, supervisor and workshop.
b. They will be assessed by direct observation of the candidate whilst interacting with the patients, relatives, colleagues and multisource feedback evaluation.

v. Professionalism as per Hippocratic Oath

a. This competency is learnt from supervisor acting as a role model, ethical case conferences and lectures on ethical issues such as confidentiality informed consent, end of life decisions, conflict of interest, harassment and use of human subjects in research.
b. The assessment of residents will be through multisource feedback evaluation according to proformas of evaluation and its scoring method.

Specialty Specific Competencies

i. The candidate will be trained in operative and procedural skills according to a quarterly based schedule.
ii. The level of procedural competence to be achieved at various levels of training will be according to a competency table to be developed by each specialty.
iii. The following key will be used for assessing operative and procedural competencies:

a. Level 1 Observer Status

The candidate physically present and observing the supervisor and senior colleagues.

b. Level 2 Assistant Status

The candidate assisting procedures and operations

c. Level 3 Performed under Supervision

The candidate operating and performing a procedure under direct supervision.

d. Level 4 Performed independently

The candidate operating and performing a procedure under without any supervision.

iv. Procedure Based Assessments (PBA)

a. Procedural competency will assess the skill of consent taking preoperative preparation and planning, intraoperative general and specific tasks and postoperative management

b. Procedure based assessments will be carried out during teaching and training of each procedure.

c. The assessors may be supervisors, consultant colleagues and senior residents.

d. The standardized forms will be filled in by the assessors after direct observation.

e. The resident's evaluation will be graded as satisfactory, deficient requiring further training and not assessed at all.

f. Assessment report will be submitted to the registrar on 03 monthly bases.

g. A satisfactory score will be required to be eligible for taking final examination.

Multisource Feedback Evaluation

1. The supervisor would ensure a multisource feedback to collect peer assessments in medical knowledge, clinical skills, communication skills, professionalism, integrity, and responsibility.
2. Satisfactory annual report will be required to become eligible for the final examination.

b) Completion of Candidate's Training Portfolio

i. The candidate's Training Portfolio (CTP) will be published (or computer based portfolio downloadable) by the university.

ii. The candidates would either purchase the CTP or download it from the KEMU web site.

iii. The portfolio will consist of the following components.

   a) Enrollment details.
   b) Candidate's credentials as submitted on the application for admission form.
   c) Timeline of scheduled activities e.g dates of commencement and completion of training, submission of synopsis and thesis, assessments and examination dates etc (Appendix H)
   d) Log Book of case presentations, operations and procedures recorded in an appropriate formate and validated by the supervisor.
   e) Record of participation and presentations in academic activities e.g lectures, workshops, journal clubs, clinical audit projects, morbidity and mortality review meetings, presentation in house as well as national and international meetings.
   f) Record of publications if any.
   g) Record of results of assessments and examinations if any.
   h) Synopsis submission proforma and IRB proforma and AS&RB approval letter.
   i) Copy of synopsis as approved by AS&RB

iv. Candidates Training Portfolio shall be assessed as per proforma given in "Appendix-G"

Supervisor's Annual Review Report

This report will consist of the following components:-

1. Verification and validation of Log Book of operations and procedures according to the expected number of operations and procedures performed (as per level of competence) determined by relevant board of studies.
2. A 90 % attendance in academic activities is expected. The academic activities will include: lectures, Workshops other than mandatory workshops, journal clubs, Morbidity & Mortality Review Meetings and Other presentations.
3. Assessment report of presentations and lectures.
4. Compliance report on Personal Development Plan.
5. Multisource Feedback Report. On relationship with colleagues, patients.
6. Supervisor will produce an annual report based on assessments as per proforma in appendix-G and submit it to the examination department.
7. 75 % score will be required to pass the continuous Internal Assessment on annual review.

APPENDIX-G

(See Regulation 9ix, 9xxiii-d, 10,11,14 & 16)

Supervisor's Evaluation

PROFORMA FOR CONTINUOUS INTERNAL ASSESSMENTS

1	**Generic Competencies**		
	(Please score from 1-100. 75% shall be the pass marks)	Component Score	Score Achieved
	i. Patient Care	20	
	ii. Medical knowledge and Research	20	
	iii. Practice and System Based Learning • Journal Clubs • Audit Projects	04	
	• Medical Error Investigation and Root Cause Analysis	04	
	• Morbidity/Mortality/Review Meetings	04	
	• Awareness of Health Care Facilities	04	
		04	
	iv. Communication Skills • Informed Consent	10	
	• End of Life Decisions	10	
	v. Professionalism • Punctuality and time keeping	04	
	• Patient Doctor relationship		
	• Relationship with Colleagues	04	
	• Awareness of ethical issues	04	
	• Honesty and integrity	04	
		04	
2	**Specialty Specific competencies**		
	(Please score from 1-100. 75% shall be the pass marks)		Score Achieved
	Operatives Skills/Procedural Skills		
3	Multisource Feedback Evaluation(Please score from 1-100. 75% shall be the pass marks)		
4	Candidates Training Portfolio(Please score from 1-100. 75% shall be the pass marks)		
	(Please score from 1-100. 75% shall be the pass marks)	Component Score	Score Achieved
	I. Log Book of Operations and Procedures	25	
	II. Record of participation and presentation in academic activities	25	
	III. Record of Publications	25	
	IV. Record of results of assessments and examinations	25	