Goals and Objectives

OTO2 (junior) and OTO5 (chief) **Otology Rotations**, Johns Hopkins University

In addition to the OTO2 (junior) and OTO5 (chief) residents, the Otology team consists of 9 board certified otolaryngologists who predominantly practice otology and neurotology (Drs. John Niparko MD, Lloyd Minor MD, Michael Holliday MD, Howard Francis MD, John Carey MD, Charles Della Santina MD PhD, Charles Limb MD, Frank Lin MD PhD, and Matthew Stewart MD PhD). The Otology/Neurotology team also includes two fellows in the ACGME accredited Johns Hopkins Neurotology Residency program, one vestibular rehab physiologist (Michael Schubert PhD), one nurse practitioner (Barbara Gottschalk NP), and one physician assistant (Irina Klimova, MD PA). Every Otology patient has both a responsible, supervising faculty member and resident involvement; there is no "private" or "resident" service.

Facilities

Outpatient Clinic. Otology outpatients are seen in the general outpatient clinic. The outpatient clinic consists of 4 bays with a total of 20 exam rooms. Each room has a computer with access to the online electronic patient record. Two rooms are treatment rooms with microscopes. Six examination rooms have microscopes. Five rooms have video fiberoptic capability for rigid or flexible oto-, naso- and/or laryngoscopy. A portable videonystamography unit can transit between exam rooms. These facilities are supplemented by complete Audiology and speech therapy services located in the same area. Electronystagmography (ENG), vestibular evoked myogenic potential (VEMP) recording, and rotary chair testing are performed daily in a vestibular clinical testing laboratory housed in the same facility. A high-torque rotary chair with integrated scleral search coil system for 3D eye movement measurements is housed in the same facility. All tertiary care medical and surgical consultation services are available during all clinics.

***Operating Rooms*.** Outpatient surgical procedures are performed in the Johns Hopkins Outpatient Center operating suite (8 rooms). Inpatient surgical procedures are mainly performed in the General Operating Room suite, which has 21 total rooms, with a minority performed in the Weinberg Cancer Center OR.

***Inpatient*.** The Johns Hopkins Hospital has 1,017 licensed patient beds. Inpatients on the otology/neurotology service typically stay in the Neurocritical Care Unit (NCCU) or one of two units devoted to care of patients with neurosurgical and otologic/neurotologic pathology

Each OTO2 resident will spend 3 months on the JHH Otology rotation. Each OTO5 resident will spend 3 months on the JHH Otology rotation. Although otology patients are also seen at both affiliate hospitals (GBMC and Bayview) and in the department's Greenspring outpatient center, these two rotations form the main resident exposure to Otology patients. Residents on this assignment receive concentrated training in congenital, inflammatory, infectious and neoplastic diseases of the ear, including a staged and supervised transition to surgical competence and independence.

Goals Common to Both JHH Otology OTO2 (junior) and OTO5 (chief) resident rotations

Goals of the OTO2 and OTO5 rotations are centered on development and refinement (at the OTO2 level) and mastery (at the OTO5 level) of the following core competencies as they pertain to evaluation and management of patients with otologic disorders. Residents shall develop, refine and master:

1. Technical skills needed to provide effective, appropriate, efficient compassionate care of patients with disorders of the ear.

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2. The medical knowledge base, clinical acumen and self-education skills necessary for effective otologic practice and continued life-long learning.
3. An understanding of and experience with quantitative methods of outcomes assessment and practice-based optimization of care.
4. Interpersonal and communication skills necessary for effective participation in a multidisciplinary care team. Residents shall learn to employ clear, concise, accurate and precise verbal communication with colleagues, other staff, patients and patients' family members. Residents will develop an appreciation for the importance and impact of nonverbal communication, compassion and cultural sensitivity in all interpersonal interactions.
5. Tenets of professional behavior, including honesty, compassion, level-headedness, decorum, and respect for others. All residents will have a detailed understanding of ethical issues in clinical and research settings, and all will develop skills needed for critical analysis of ethical issues.
6. Organizational, managerial and technical skills required for application and refinement of systems designed to optimal clinical practice and patient safety.

Because otologic training occurs along a continuum of growing knowledge, skill, experience and transition toward independence, the OTO2 and OTO5 otology resident rotations share the common goals listed below. Generally, the focus in the OTO2 otology rotation is on acquisition of knowledge and skills, whereas the focus in the OTO5 otology rotation is on consolidation of knowledge and skills, a supervised transition toward independence in assessment and management of otologic disease, and development of teaching and leadership skills.

Goals for OTO2 Otology Residents

Competency	Educational Method Used	How Assessed
Patient Care 1. Develop competency in completing an efficient yet comprehensive otologic and neurotologic history. 2. Develop competence with physical examination of the ear and related structures. 3. Apply judicious use of prioritization when less comprehensive historical review and/or focused exam are appropriate 4. Develop competence in specific physical exam skills required for evaluation of the peripheral vestibular system, including head thrust test, head heave test, Frenzel lens examination for nystagmus (spontaneous, gaze-evoked, headshake, hyperventilation, Valsalva, Dix-Hallpike, positional), oculomotor exam, ophthalmoscopy, posture/gait assessment and dynamic visual acuity.	• Supervised and progressive patient care responsibility: in-patient, out-patient clinic, emergency department • Supervised and progressive intra-operative experience • Surgical laboratories and workshops: 6 week long temporal bone didactic & dissection course covering mastoidectomy, tympanoplasty, ossiculoplasty, cochleostomy, facial nerve decompression, endolymphatic sac exposure, labyrinthectomy,	• Structured operative skills assessment • Case numbers and distribution • Documented evaluations by faculty, peers, nursing • Mid- and end-of-rotation preceptor feedback • Attendance of workshops; formative feedback provided during laboratory teaching exercises • Attendance of didactic program • Feedback by moderator and

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OTO2 (junior) and OTO5 (chief) <u>Otology Rotations</u>, Johns Hopkins University

5. Develop facility with tools routinely employed in physical examination of patients with disorders of the ear, including: tuning forks; handheld otoscope with pneumatic insufflation; binocular microscope; Shea, Lempert and Siegel specula; head mirror; mirrors for examination of nasopharynx, oropharynx and larynx; Frenzel lensesand IR goggles audiometer;; nasal specula; rigid and flexible fiber optic endoscopes; and biopsy instruments. 6. Develop competence in Epley and related canalith repositioning maneuvers. 7. Develop competence in use of microsurgical instruments for clinic management of cerumen impaction, foreign bodies in the ear canal, mastoid debridement, intratympanic injections, myringotomy and PETube placement, ear canal biopsy. 8. Develop competence in the interpretation of audiologic and vestibular tests including - Pure tone audiometry - Speech audiometry - Evoked auditory brainstem responses - Otoacoustic emissions - Tympanometry (admittance and reflexes) - ENG - VEMPs – cervical and ocular 9. Interpret plain X-ray, CT and MRI imaging of the temporal bone and related structures 10. Refine and exercise ability to perform comprehensive preoperative examination for medical clearance of patients with concomitant multi-system disease, including obtaining appropriate preoperative testing, consultations and informed consent. 11. Learn indications for surgical intervention in the Otology patient, including knowledge of the risks and alternative treatments important in obtaining informed consent. 12. Understand and demonstrate proper positioning of	and exposure to middle fossa and posterior fossa approaches to the internal auditory canal • Resident-specific one-on-one temporal bone dissection sessions as needed to review skills identified as underdeveloped in the OR • Didactic and patient-care conferences: Division journal club and teaching rounds, weekly resident didactic conference (approximately 1/5 of topics are otologic/neurotologic, presented weekly during 2.5 months of each year), grand rounds, morbidity and mortality conference • Assigned reading: Each OTO2 resident receives a binder of selected readings on surgical technique and classic papers regarding otology topics • Faculty-mentored research projects, manuscript preparation and lecture presentation • Attendance at multidisciplinary cochlear implant weekly case review meeting • Directed, standardized feedback at the end of each OR day	faculty of morbidity and mortality rounds • Faculty advisor semiannual review • Program director semiannual review

patients and room/microscope/staff arrangement for otologic surgery 13. Understand and demonstrate proper placement, testing, debugging and monitoring of nerve integrity monitoring systems for intraoperative monitoring the facial cranial nerve during ear surgery. Understand indications for monitoring. 14. Proper use of microsurgical instruments and drills for otologic surgery 15. Proper use of saucerization and landmark-based approach to dissection in the temporal bone 16. Familiarity with multiple brands/makes of otologic drill and burs, including familiarity with equipment debugging. 17. Use of Fiber-optic lasers for otologic surgery; associated safety precautions *18. Achieve competence in the following operative procedures:* - myringotomy and placement of PE Tubes (awake and anesthetized patients) - chemical labyrinthotomy (transtympanic injection) - canal-wall up mastoidectomy - canal-wall down (modified radical) mastoidectomy - radical mastoidectomy - tympanoplasty (via canal and via mastoid) - mastoidotomy for placement of osseointegrated fixtures (e.g., BAHA®) *Understanding of concepts and development of skills towards competency in:* - posterior approach to the mesotympanum (via facial recess) - posterior approach to the epitympanum (via aditus) - ossiculoplasty - canalplasty - cochlear implantation - resection of glomus tympanicum		

- stapedotomy and stapedectomy - approaches to the endolymphatic sac - facial nerve decompression - labyrinthectomy - transmastoid repair of tegmen dehiscence - trans-sphenoid approach to pituitary for hypophysectomy 19. Achieve competency in the prudent application and performance of OHNS diagnostic procedures in the uncooperative pediatric or adult patient (i.e. binocular microscopy, pneumatic otoscopy, rigid and flexible fiberoptic endoscopy, and headlight illumination). 20. Achieve competency in the prevention, diagnosis, and treatment of common otologic disorders (i.e. otitis media, cholesteatoma, sensorineural and conductive hearing loss, vertigo, vestibular sensory loss, pulsatile and nonpulsatile tinnitus, etc.) through clinical experience, educational conferences, and textbook/journal readings. 21. Develop skills for intensive care unit and floor care of the postoperative otologic surgery patient. 22. Develop competence in the assessment of emergency department and inpatient consultations regarding otologic disorders. 23. Develop competence in determining which patients require immediate vs nonurgent intervention. 24. Gain exposure to diagnosis and management of complex otologic and neurotologic disease processes, including skull base tumors and lesions and superior semicircular canal dehiscence. 25. Develop competence in identification and management of surgical complications 26. Develop an understanding of the indications, risks, likely outcomes and alternatives for otologic and neurotologic interventions, and learn to present these clearly while obtaining informed consent.		

Goals and Objectives

OTO2 (junior) and OTO5 (chief) Otology Rotations, Johns Hopkins University

27. Develop competence in efficient communication of clinical findings		
Medical Knowledge 1. Biomedical, clinical, epidemiological and social-behavioral sciences and their application to the care of patients with otologic disorders 2. Basic sciences relevant to the ear and related structures, including related anatomy, embryology, physiology, pharmacology, pathology, microbiology, biochemistry, genetics, cell biology, immunology, the communication sciences; 3. Develop an understanding of the normal developmental changes that occur during ear development, identifying pathologic abnormalities in these growth patterns. 4. Develop an understanding of the pathophysiology and management of inflammatory, congenital, infectious, neoplastic, vascular, and traumatic processes affecting the ear and related structures. 5. Develop understanding of otopathology including correlation between gross and microscopic pathology findings 6. Develop competence in critical review of literature through required and independent reading on otologic and neurotologic topics 7. Develop competence in research skills and learn methods of scientific design and investigation through ongoing research and completion of faculty mentored research program. 8. Develop competence in research project presentation at local/regional/national conferences and publication in peer-reviewed journals.	• Division journal club and teaching rounds, weekly resident didactic conference, grand rounds, morbidity and mortality conference • Assigned reading • Faculty-mentored research projects, manuscript preparation and lecture presentation • Temporal bone course as described above	• In-training examinations • In-house testing • Attendance of conferences and didactic program • Faculty evaluation • Mid- and end-of-rotation preceptor feedback • Program director semiannual review
Practice-based Learning and Improvement 1. Monitor and review patient outcomes throughout and after the rotation; adjustment of technique/management based on observed outcomes.	• Operative skills assessment and standardized, directed feedback	• Documented faculty evaluations • Mid- and end-of-rotation

Goals and Objectives

OTO2 (junior) and OTO5 (chief) <u>Otology Rotations</u>, Johns Hopkins University

2. Locate, appraise, and assimilate evidence from scientific studies related to patients' health problems; use information technology to optimize learning 3. Be candid in presenting and critically analyzing one's outcomes and errors 4. Participate in quality improvement and safety efforts 5. Take the initiative in self improvement: a) Identify strengths, deficiencies and limits in one's knowledge and expertise; b) set learning and improvement goals; c) identify and perform appropriate learning activities 6. Incorporate formative evaluation feedback into daily practice 7. Participate in the education of patients, families, students, residents and other health professionals	• Presentation of cases at M&M conference including summary of literature and evidence-based practice • Other presentations in department and at meetings • Journal club and ward rounds • Self-directed reading and study • Chart review for retrospective study • Self-assessment during semi-annual review	preceptor feedback • Program director semiannual evaluation: self assessment, longitudinal assessment of skill development, list of conference presentations and publications, review of learning goals
<u>Interpersonal and Communication Skills</u> 1. Effective listening and communication with patients and family members from a broad range of socioeconomic and cultural backgrounds; 2. Discussion of risks, expected benefits, likely outcomes, and alternatives of different treatment modalities, as part of a discussion leading to informed consent. 3. Communicate effectively with physicians, other health professionals, and health related agencies; 4. Clearly written, complete and timely communication and documentation of clinical findings, recommendations and plan. 5. Work effectively as a member or leader of a health care team or other professional group; 6. Act in a consultative role to other physicians and health professionals; 7. Develop communication skills through experience in group presentations and lectures. 8. Teaching medical students and fellow residents in the clinic and inpatient setting.	• Supervised and progressive patient care responsibility: in-patient, out-patient, operating room and on-call • Multi-disciplinary cochlear implant case review conference • Lectures and discussions: Grand Rounds, M&M and resident research presentations (each resident presents in some fashion multiple times/year) • Book reviews and discussions • Multidisciplinary airway emergency simulations • Self-assessment during semi-annual review • Attend family meetings and counseling sessions with	• Documented evaluation by faculty, other health care providers, peers • Mid- and end-of-rotation feedback by preceptor • Grand rounds and M&M presentations: Faculty and resident evaluations • Program director semiannual evaluation: list of conference presentations and publications, review of documented evaluations, resident self assessment

Goals and Objectives

OTO2 (junior) and OTO5 (chief) Otology Rotations, Johns Hopkins University

	attending physicians	
Professionalism 1. Honesty, compassion, level-headedness, decorum, selflessness, integrity and respect for others. 2. Acceptance of accountability and commitment to self-improvement. 3. Maintenance of patient confidentiality; knowledge of HIPAA regulations 4. Sensitivity to issues involving gender, religion, race, sexual orientation, disability and age. 5. Understanding of ethical issues in clinical and research settings, and critical analysis of novel ethical issues. 6. Skills necessary for a specialist consultant providing inpatient and emergency department consultations in a professional manner. 7. Ability to work as a member of a team. 8. Development of leadership skills. 9. Habits of continual learning.	• Lectures and discussions: Grand Rounds • Book reviews and discussions • Web-based sleep deprivation module • Web-based HIPAA modules • Web-based Course on Research Ethics • Self-assessment during semi-annual review	• Documented evaluation by faculty, other health care providers, peers • Mid- and end-of-rotation feedback by preceptor • >80% score for web-based modules required • Program director semiannual evaluation: review of documented evaluations, resident self assessment
Systems-based Practice 1. Understanding of the organization of the otology division and service, including expected responsibilities in the coordination of care, the different roles of team members, and mechanisms of supervision and communication. 2. Organizational and time-management skills required for efficient running of the inpatient pediatric service 3. Effective participation in multidisciplinary teams to enhance patient safety and improve patient care quality 4. Familiarization and utilization of the Patient Safety Net for identification and prevention of potential adverse events. 5. Understanding of the systems approach to analysis of sentinel events signifying a potential risk to patient safety. 6. Understanding of the complex multidisciplinary approach to the preoperative, intraoperative and postoperative	• Supervised and progressive clinical team responsibilities • Ward Rounds • Multi-disciplinary airway team (a) Rounds (b) Training (c) Debriefing • Morbidity and Mortality Conference (a) Database entry (b) Presentation (c) System error analysis • Lectures and discussions: Grand Rounds • Quality Improvement Efforts	• Documented evaluation by faculty • Mid- and end-of-rotation feedback by preceptor • Attendance of M&M, Grand Round conferences, multidisciplinary workshops • Physician Advisor and faculty evaluation/feedback of M&M presentation and proposed system improvements • Program director semiannual evaluation of above and resident self assessment

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care of the pediatric patient. 7. Familiarity with the outpatient, inpatient, operating room, and emergency room facilities at JHH and resources available 8. Identification of opportunities to systematically improve care delivery. 9. Understanding of macro- and microeconomic forces impacting health care delivery to different populations and to single individuals. 10. Cost-effective use of diagnostic tests and treatment modalities 11. Understanding the medico-legal issues that affect the provision of health care		

Goals for OTO5 Otology Residents

Competency	Educational Method Used	How Assessed
<u>Patient Care</u> 1. Develop competency in completing an efficient yet comprehensive otologic and neurotologic history. 2. Develop competency with physical examination of the ear and related structures. 3. Apply judicious use of prioritization when less comprehensive historical review and/or focused exam are appropriate 4. Master specific physical exam skills required for evaluation of the peripheral vestibular system, including head thrust test, head heave test, Frenzel lens examination for nystagmus (spontaneous, gaze-evoked, headshake, hyperventilation, Valsalva, Dix-Hallpike, positional), oculomotor exam, ophthalmoscopy, posture/gait assessment and dynamic visual acuity. 5. Develop facility with tools routinely employed in physical examination of patients with disorders of the ear, including: tuning forks; handheld otoscope with pneumatic insufflation; binocular microscope; Shea,	• Supervised and progressive patient care responsibility: in-patient, out-patient clinic, emergency department • Supervised and progressive intra-operative experience • Surgical laboratories and workshops: 6 week long temporal bone didactic & dissection course covering mastoidectomy, tympanoplasty, ossiculoplasty, cochleostomy, facial nerve decompression, endolymphatic sac exposure, labyrinthectomy, and exposure to middle fossa and posterior fossa approaches to the internal	• Structured operative skills assessment • Case numbers and distribution • Documented evaluations by faculty, peers, nursing • Mid- and end-of-rotation preceptor feedback • Attendance of workshops; formative feedback provided during laboratory teaching exercises • Attendance of didactic program • Feedback by moderator and faculty of morbidity and mortality rounds

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Lempert and Siegel specula; head mirror; mirrors for examination of nasopharynx, oropharynx and larynx; Frenzel lensesand IR goggles audiometer;; nasal specula; rigid and flexible fiber optic endoscopes; and biopsy instruments. 6. Master Epley and related canalith repositioning maneuvers. 7. Master use of microsurgical instruments for clinic management of cerumen impaction, foreign bodies in the ear canal, mastoid debridement, intratympanic injections, myringotomy and PE tube placement, ear canal biopsy. 8. Master interpretation of audiologic and vestibular tests including - Pure tone audiometry - Speech audiometry - Evoked auditory brainstem responses - Otoacoustic emissions - Tympanometry (admittance and reflexes) - ENG - VEMPs – cervical and ocular 9. Interpret plain X-ray, CT and MRI imaging of the temporal bone and related structures 10. Develop competency in performing middle ear endoscopy 11. Refine and exercise ability to perform comprehensive preoperative examination for medical clearance of patients with concomitant multi-system disease, including obtaining appropriate preoperative testing, consultations and informed consent. 12. Learn indications for surgical intervention in the Otology patient, including knowledge of the risks and alternative treatments important in obtaining informed consent. 13. Understand and demonstrate proper positioning of patients and room/microscope/staff arrangement for otologic surgery	auditory canal • Resident-specific one-on-one temporal bone dissection sessions as needed to review skills identified as underdeveloped in the OR • Didactic and patient care conferences: Division journal club and teaching rounds, weekly resident didactic conference (approximately 1/5 of topics are otologic/neurotologic, presented weekly during 2.5 months of each year), grand rounds, morbidity and mortality conference • Assigned reading: Each OTO2 resident receives a binder of selected readings on surgical technique and classic papers regarding otology topics • Faculty-mentored research projects, manuscript preparation and lecture presentation • Attendance at multidisciplinary cochlear implant weekly case review meeting • Directed, standardized feedback at the end of each OR day	• Faculty advisor semiannual review • Program director semiannual review

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14. Understand and demonstrate proper placement, testing, debugging and monitoring of nerve integrity monitoring systems for intraoperative monitoring the facial cranial nerve during ear surgery. Understand indications for monitoring. 15. Proper use of microsurgical instruments and drills for otologic surgery 16. Proper use of saucerization and landmark-based approach to dissection in the temporal bone 17. Familiarity with multiple brands/makes of otologic drill and burs, including familiarity with equipment debugging. 18. Use of Fiber-optic lasers for otologic surgery; associated safety precautions 19. Achieve competency in the following operative procedures: - myringotomy and placement of PE Tubes (awake and anesthetized patients) - chemical labyrinthotomy (transtympanic injection) - canal-wall up mastoidectomy - canal-wall down (modified radical) mastoidectomy - radical mastoidectomy - tympanoplasty (via canal and via mastoid) - posterior approach to the mesotympanum (via facial recess) - posterior approach to the epitympanum (via aditus) - ossiculoplasty - canalplasty - cochlear implantation - resection of glomus tympanicum - mastoidotomy for placement of osseointegrated fixtures (e.g., BAHA®) - stapedotomy and stapedectomy - approaches to the endolymphatic sac - facial nerve decompression - labyrinthectomy		

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- transmastoid repair of tegmen dehiscence - trans-sphenoid approach to pituitary for hypophysectomy 20. Achieve competency in the prudent application and performance of OHNS diagnostic procedures in the uncooperative pediatric or adult patient (i.e. binocular microscopy, pneumatic otoscopy, rigid and flexible fiberoptic endoscopy, and headlight illumination). 21. Achieve competency in the prevention, diagnosis, and treatment of common otologic disorders (ie otitis media, cholesteatoma, sensorineural and conductive hearing loss, vertigo, vestibular sensory loss, pulsatile and nonpulsatile tinnitus, etc.) through clinical experience, educational conferences, and textbook/journal readings. 22. Develop skills for intensive care unit and floor care of the postoperative otologic surgery patient. 23. Develop competence in the assessment of emergency department and inpatient consultations regarding otologic disorders. 24. Develop competence in determining which patients require immediate vs nonurgent intervention. 25. Gain exposure to diagnosis and management of complex otologic and neurotologic disease processes, including skull base tumors and lesions and superior semicircular canal dehiscence. 26. Develop an understanding of the indications, risks, likely outcomes and alternatives for otologic and neurotologic interventions, and learn to present these clearly while obtaining informed consent. 27. Develop competence in efficient communication of clinical findings		
<u>Medical Knowledge</u> 1. Biomedical, clinical, epidemiological and social-behavioral sciences and their application to the care of patients with otologic disorders 2. Basic sciences relevant to the ear and related	• Division journal club and teaching rounds, weekly resident didactic conference, grand rounds, morbidity and	• In-training examinations • In-house testing • Attendance of conferences and didactic program

Goals and Objectives

OTO2 (junior) and OTO5 (chief) <u>Otology Rotations</u>, Johns Hopkins University

structures, including related anatomy, embryology, physiology, pharmacology, pathology, microbiology, biochemistry, genetics, cell biology, immunology, the communication sciences; 3. Develop an understanding of the normal developmental changes that occur during ear development, identifying pathologic abnormalities in these growth patterns. 4. Develop an understanding of the pathophysiology and management of inflammatory, congenital, infectious, neoplastic, vascular, and traumatic processes affecting the ear and related structures. 5. Develop understanding of otopathology including correlation between gross and microscopic pathology findings 6. Develop competence in critical review of literature through required and independent reading on otologic and neurotologic topics 7. Develop competence in research skills and learn methods of scientific design and investigation through ongoing research and completion of faculty mentored research program. 8. Develop competence in research project presentation at local/regional/national conferences and publication in peer-reviewed journals.	mortality conference • Assigned reading • Faculty-mentored research projects, manuscript preparation and lecture presentation • Temporal bone course as described above	• Faculty evaluation • Mid- and end-of-rotation preceptor feedback • Program director semiannual review
<u>Practice-based Learning and Improvement</u> 1. Monitor and review patient outcomes throughout and after the rotation; adjustment of technique/management based on observed outcomes. 2. Locate, appraise, and assimilate evidence from scientific studies related to patients' health problems; use information technology to optimize learning 3. Be candid in presenting and critically analyzing one's outcomes and errors 4. Participate in quality improvement and safety efforts 5. Take the initiative in self improvement: a) Identify	• Operative skills assessment and standardized, directed feedback • Presentation of cases at M&M conference including summary of literature and evidence-based practice • Other presentations in department and at meetings • Journal club and ward rounds	• Documented faculty evaluations • Mid- and end-of-rotation preceptor feedback • Program director semiannual evaluation: self assessment, longitudinal assessment of skill development, list of conference presentations and publications, review of

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strengths, deficiencies and limits in one's knowledge and expertise; b) set learning and improvement goals; c) identify and perform appropriate learning activities 6. Incorporate formative evaluation feedback into daily practice 7. Participate in the education of patients, families, students, residents and other health professionals	• Self-directed reading and study • Chart review for retrospective study • Self-assessment during semi-annual review	learning goals
Interpersonal and Communication Skills 1. Effective listening and communication with patients and family members from a broad range of socioeconomic and cultural backgrounds; 2. Discussion of risks, expected benefits, likely outcomes, and alternatives of different treatment modalities, as part of a discussion leading to informed consent. 3. Communicate effectively with physicians, other health professionals, and health related agencies; 4. Clearly written, complete and timely communication and documentation of clinical findings, recommendations and plan. 5. Work effectively as a member or leader of a health care team or other professional group; 6. Act in a consultative role to other physicians and health professionals; 7. Develop communication skills through experience in group presentations and lectures. 8. Teaching medical students and fellow residents in the clinic and inpatient setting.	• Supervised and progressive patient care responsibility: in-patient, out-patient, operating room and on-call • Multi-disciplinary cochlear implant case review conference • Lectures and discussions: Grand Rounds, M&M and resident research presentations (each resident presents in some fashion multiple times/year) • Book reviews and discussions • Multidisciplinary airway emergency simulations • Self-assessment during semi-annual review • Attend family meetings and counseling sessions with attending physicians	• Documented evaluation by faculty, other health care providers, peers • Mid- and end-of-rotation feedback by preceptor • Grand rounds and M&M presentations: Faculty and resident evaluations • Program director semiannual evaluation: list of conference presentations and publications, review of documented evaluations, resident self assessment
Professionalism 1. Honesty, compassion, level-headedness, decorum, selflessness, integrity and respect for others. 2. Acceptance of accountability and commitment to self-improvement. 3. Maintenance of patient confidentiality; knowledge of	• Lectures and discussions: Grand Rounds • Book reviews and discussions • Web-based sleep deprivation	• Documented evaluation by faculty, other health care providers, peers • Mid- and end-of-rotation

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HIPAA regulations 4. Sensitivity to issues involving gender, religion, race, sexual orientation, disability and age. 5. Understanding of ethical issues in clinical and research settings, and critical analysis of novel ethical issues. 6. Skills necessary for a specialist consultant providing inpatient and emergency department consultations in a professional manner. 7. Ability to work as a member of a team. 8. Development of leadership skills. 9. Habits of continual learning.	module • Web-based HIPAA modules • Web-based Course on Research Ethics • Self-assessment during semi-annual review	feedback by preceptor • >80% score for web-based modules required • Program director semiannual evaluation: review of documented evaluations, resident self assessment
<u>Systems-based Practice</u> 1. Understanding of the organization of the otology division and service, including expected responsibilities in the coordination of care, the different roles of team members, and mechanisms of supervision and communication. 2. Organizational and time-management skills required for efficient running of the inpatient pediatric service 3. Effective participation in multidisciplinary teams to enhance patient safety and improve patient care quality 4. Familiarization and utilization of the Patient Safety Net for identification and prevention of potential adverse events. 5. Understanding of the systems approach to analysis of sentinel events signifying a potential risk to patient safety. 6. Understanding of the complex multidisciplinary approach to the preoperative, intraoperative and postoperative care of the pediatric patient. 7. Familiarity with the outpatient, inpatient, operating room, and emergency room facilities at JHH and resources available 8. Identification of opportunities to systematically improve care delivery. 9. Understanding of macro- and microeconomic forces	• Supervised and progressive clinical team responsibilities and leadership • Ward Rounds • Multi-disciplinary airway team (d) Rounds (e) Training (f) Debriefing • Morbidity and Mortality Conference (a) Database entry (b) Presentation (c) System error analysis • Lectures and discussions: Grand Rounds • Quality Improvement Efforts	• Documented evaluation by faculty • Mid- and end-of-rotation feedback by preceptor • Attendance of M&M, Grand Round conferences, multidisciplinary workshops • Physician Advisor and faculty evaluation/feedback of M&M presentation and proposed system improvements • Program director semiannual evaluation of above and resident self assessment

impacting health care delivery to different populations and to single individuals. 10. Cost-effective use of diagnostic tests and treatment modalities 11. Understanding the medico-legal issues that affect the provision of health care		

Duties:

Clinic duties: The OTO2 resident participates in faculty supervised outpatient clinics at least 2 days per week. One day is spent with program director Howard Francis, MD, whose practice spans the full range of otologic disease and also affords sufficient exposure for residents to gain familiarity with clinic manifestations and assessment of neurotologic disease. One day is spent with John Carey, MD, whose practice is similarly broad but also provides enhanced opportunity for exposure to management of patients with vestibular disorders. The resident will be given increasing supervised independence depending on individual skill level and knowledge. Typically, the OTO2 resident at the start of the rotation will perform and history and physical and report to the faculty supervisor, who then repeats the history and exam and then jointly formulates a management plan with the resident. By the end of the rotation, the OTO2 resident has typically acquired the ability to independently synthesize a management plan, which he/she then presents to the faculty member for critique and discussion. The OTO5 resident carries this transition toward independence further during 2 days of clinic/week (with John Niparko and with other division faculty on an as-available basis depending on the resident's OR schedule and adherence to work-hour limitations). Each patient is discussed with and seen by the supervising faculty member.

Surgical duties: The OTO2 and OTO5 otology residents perform routine preoperative assessment, treatment planning, surgery, perioperative management and post-operative follow-up of otologic patients in concert with the supervising faculty surgeon. The resident is expected to be familiar with the patient's history, exam, imaging and other studies, and treatment plan. Residents are expected work with the faculty member to review preoperative consultations and confirm completion of all necessary documentation (i.e. H&P, informed consent). In addition, the involved resident should have in-depth knowledge of the specific disease process and planned surgical procedure through preparative reading.

The OTO2 resident is the primary surgeon for mastoidectomy, tympanoplasty, ossiculoplasty, Baha® mastoidotomy, meatoplasty, cochlear implantation and, via graduating transition toward independence advanced on a resident-specific basis, stapedectomy/stapedotomy, as well as more complex operations. The OTO2 resident spends at least 2 days/week in the operating room, most often with Drs. Della Santina, Francis, Limb and Holliday, but with all division faculty to some degree. The OTO5 resident spends at least 2 days/week in the operating room, most often with Drs. Niparko, Minor and Carey, but with all division faculty to some degree. The focus of the OTO5 surgical experience is to consolidate mastery of otologic surgical skills and to maximize both breadth and depth of otologic operative experience. The operating resident is jointly responsible for and assists in the care of the patient from their stay in the preoperative surgery area until their return to the post-anesthesia care unit.

Goals and Objectives

OTO2 (junior) and OTO5 (chief) Otology Rotations, Johns Hopkins University

Inpatient duties: The OTO5 and OTO2 otology residents are responsible for management of otology service inpatients and patients on the consultation service under care of faculty otologists. The resident team typically rounds on otology/neurotology inpatients in concert with the supervising faculty surgeon and neurotology fellow. The OTO2 Otology resident participates in the junior/assistant resident call pool and so assumes primary management responsibility for all inpatients when on call. This includes carrying the departmental on-call resident pager and responding to inpatient and emergency department consultation requests. The OTO5 Otology resident participates in the "chief' call" pool, and so assumes second call management responsibilities for all inpatients when on call, including leading work rounds. Each inpatient's faculty otologist, at least one neurotology fellow, and the on-call faculty otolaryngologist are available as backup to the resident team.

When on call, the OTO2 otology resident assumes in-house responsibility for the adult and pediatric call pager after daytime responsibilities are complete at ~5:30 pm and relinquished the call pager to the next assigned on-call resident by 7:00 am the next day. On post-call days, the resident is freed from clinical duties to leave in time to meet continuous work hour limitations. The OTO5 residents typically cover second call from home.

Academic duties: The OTO2 and OTO5 residents on otology rotations are required to read selected journal articles and text chapters prior to beginning the rotation provided to the resident by faculty. In addition, the resident is strongly encouraged to read topics related to patients seen in consultation, the outpatient clinic or operating room. Each resident is expected to be present promptly and adequately prepared for all mandatory educational conferences, courses and workshops. Each resident is responsible for presentation of pertinent cases at the weekly M&M conference and interesting cases on a rotational basis determined by the division chief.

OTO2 and OTO5 residents on otology rotations assume teaching responsibilities, with the OTO2 resident learning to teach and supervise rotating medical students and OTO5 resident progressively graduating toward a teaching role in the clinic, operating room, and inpatient units.

Administrative duties: OTO2 and OTO5 otology residents are expected to maintain timely, complete, concise and accurate documentation of all clinical efforts (i.e. clinic progress notes, history and physicals, dictations, operative reports and discharge summaries). Each resident is also responsible for accurate documentation as necessary for residency program, ACBME, JHH, and the School of Medicine.

Progression of responsibilities:
Each otology resident closely interacts with the two neurotology fellows and the supervising faculty member. As each resident gains experience and becomes more proficient in all aspects of patient care, he/she is allowed to progress in responsibility. In the outpatient clinic, residents are initially acquainted with the history, physical exam and care decisions of an otology patient. This is initially introduced through observation of the supervising faculty in clinic, but gradually the resident interviews and examines patients independently. Through presentation to the supervising faculty, a diagnostic and management plan is developed. Focus is placed later in the rotation on exposure to increasingly more complex problems as well as increasing independence in formulating diagnostic and treatment plans. Clinic based procedures are increasingly performed rather than observed as the skill level progresses. As knowledge and experience progress, otology residents are allowed to make more independent care plan decisions on inpatients. Similarly, in the OR, after a period of first assisting the faculty, the OTO2 resident is allowed to become more independent in the performance of surgical procedures, typically at least gaining proficiency in tympanoplasty, mastoidectomy,

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Baha® mastoidotomy and meatoplasty. OTO5 residents act as primary surgeon for all cases listed in the table above, achieving mastery through increased case volume and directed feedback from supervising surgeons. Both OTO2 and OTO5 also gain exposure to neurotologic cases through assisting the neurotology fellow under faculty supervision.

Evaluation:
Each OTO2 and OTO5 resident meet with the division's education director (Dr. Limb) at the beginning, middle, and end of the rotation. Residents are strongly encouraged to develop self-study habits and assume responsibility for lifelong learning. In pre-rotation meetings, the focus in on identifying a residents' interests, concerns and perceived educational needs. Mid-rotation meetings permit time for mid-course changes in operative or clinical experience to address any perceived deficiencies. In each meeting, the resident is encouraged to identify his/her strengths, weaknesses and goals. Residents are encouraged to provide candid feedback regarding ideas for optimizing educational benefit of the rotation, along with any other concerns. The division's education director gathers, distills and relates feedback to each resident from division faculty members.

Operative skills:
Each resident is expected to become proficient in the following surgical procedures:

- myringotomy and placement of PE Tubes (awake and anesthetized patients)
- chemical labyrinthotomy (transtympanic injection)
- canal-wall up mastoidectomy
- canal-wall down (modified radical) mastoidectomy
- radical mastoidectomy
- tympanoplasty (via canal and via mastoid)
- posterior approach to the mesotympanum (via facial recess)
- posterior approach to the epitympanum (via aditus)
- ossiculoplasty
- canalplasty
- resection of glomus tympanicum
- mastoidotomy for placement of osseointegrated fixtures (e.g., BAHA®)
- approaches to the endolymphatic sac
- stapedotomy/stapedectomy
- cochlear implantation
- facial nerve decompression
- labyrinthectomy
- transmastoid repair of small tegmen dehiscence
- trans-sphenoid approach to pituitary for hypophysectomy

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Although the primary surgical role for skull base and neurotologic cases rests with the fellows (trainees in the ACGME-approved Johns Hopkins Neurotology Residency Program), each OTO resident is expected to gain familiarity with such cases and disease processes through temporal bone lab dissections, didactic sessions and observation and/or assistance in with the following surgical procedures:

- suboccipital craniotomy and internal auditory canal decompression for resection of internal auditory canal masses
- translabyrinthine resection of internal auditory canal masses
- middle fossa approach to plugging of superior semicircular canal dehiscence
- lateral or other temporal bone resection

Didactics

- Anatomy and Imaging of temporal bone and skull base
- Physiology of hearing and vestibular sensation
- Vestibular assessment (ENG, VEMP, ECOG, rotary chair)
- Vestibular disorders – (including Meniere's, migraine, SCD, BPPV, fistuale)
- Hearing assessment (audiometry, ABR, tympanometry, discrimination)
- Hearing aids – (conventional; Bone anchored and other implantable hearing aids) Congenital anomalies of ear development (inner, middle, outer ear)
- Diseases of the external ear (including neoplasm)
- Otitis media - acute and chronic; diagnosis and management
- Conductive hearing loss (including otosclerosis)
- Sensorineural hearing loss (including dx/tx in peds, adults; tinnitus)
- CPA tumors - include radiology
- Skull base surgical approaches - indications, technique, complications
- Cochlear implantation (and auditory brainstem implants)
- Facial nerve - anatomy, physiology, disorders, injury - diagnosis/testing and treatment
- Temporal bone fractures