Educational Curriculum for Fellows in Pediatric Otolaryngology

Division of Otolaryngology

Sponsoring Institution: The Children’s Hospital of Philadelphia
Participating Institution: Department of Otorhinolaryngology: Head & Neck Surgery
University of Pennsylvania School of Medicine
ACGME Accredited Program ID#: 2884113006

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General Goals and Objectives

The Pediatric Otolaryngology Fellowship Training Program of The Children’s Hospital of Philadelphia provides fellows with complete education in the field of pediatric otolaryngology. The educational program combines basic science knowledge of otolaryngology and the communication sciences in conjunction with clinical aspects of diagnosis and the medical and surgical treatment of diseases of the head and neck in children. Inherent in the training program is exposure to children of all ages ranging from the newborn to adolescence and increasing familiarity with genetic and non-genetic dysmorphic children. As part of the on-going training, the fellow is expected to review the complex anatomy, embryology and physiology of the head and neck and be familiar with the epidemiology, pathology and microbiology of disorders of the head and neck in children.

The first year of the Pediatric Otolaryngology Fellowship is accredited by the ACGME. During the course of the first year, the fellow will be expected to master the curriculum (outlined below). Feedback will be provided to the fellow at various points throughout the year in order to insure that goals are being met. The fellow and faculty will also have the opportunity to formally evaluate the program quarterly. Informal, bilateral feedback between the fellow and program director is always highly encouraged.

The second year of fellowship is non-accredited and geared towards the enhancement of specific clinical and leadership goals determined by the fellow and program director. The fellow will be encouraged to attend courses and enhancement rotations, both at CHOP and at peer institutions. During this year, the fellow will also transition into the role of junior attending, allowing the individual to progress into a role of independence under the guidance of our experienced faculty. Limited clinical and surgical privileges will be granted to the fellow and there will be no attending call or weekend duties.
Accredited Year in Pediatric Otolaryngology (PGY-6)

Educational Curriculum

All topics pertain specifically to children of all ages ranging from fetal development/newborn to adolescence.

1. Medical Knowledge

**Goal:** The fellow/s should demonstrate extensive medical knowledge in the field of pediatrics, pediatric OHNS, and be able to apply this knowledge to patient care.

**Objectives:** Fellow/s should have an understanding of the following topics:

1. Normal growth
2. Disorders of growth
3. Normal development
4. Disorders of development
5. Behavioral disorders
6. Crying
7. Temper tantrums
8. Attention-deficit/hyperactivity disorder (ADHD)
9. Control of elimination
10. Normal sleep and pediatric sleep disorders
11. Failure to thrive
12. Child abuse and neglect
13. Pediatric nutrition and nutritional disorders
14. Diet of the normal infant, normal child and adolescent
15. Obesity
16. Pediatric undernutrition
17. Fetal and neonatal medicine
18. Maternal diseases affecting the newborn (including drug and alcohol abuse)
   a. Respiratory diseases of the newborn
   b. Anemia and hyperbilirubinemia
   c. Hypoxic-ischemic encephalopathy
   d. Congenital infections
   e. Short- and long-term sequelae of prematurity.
   f. Neonatal resuscitation
19. Routine immunizations of childhood
20. Indications, routine schedules, contraindications
21. Diseases of childhood
22. Kawasaki disease
23. Kikuchi disease
24. Cat-scratch disease
25. Cystic fibrosis
26. Congenital heart disease
   a. Acyanotic vs. Cyanotic
27. Diabetes mellitus
28. Short stature
29. Thyroid disease
30. Headache and migraine
31. Weakness and hypotonia
32. Neurodegenerative disorders
33. Sickle cell anemia
34. Paradoxical vocal fold motion disorder
35. Oncologic disorders
   a. Leukemia
   b. Lymphoma
   c. CNS tumors
   d. Neuroblastoma
   e. Wilms tumors
   f. Sarcomas
   g. OHNS disorders which can occur in patients who have undergone organ transplantation
      i. i.e. Post-transplant lymphoproliferative disorder (PTLD)
36. Human genetics and dysmorphology
   a. Chromosomal disorders
   b. Autosomal trisomies
   c. Microdeletion syndromes
   d. Sex chromosome disorders
   e. Chromosomal breakage syndromes
   f. Malformation syndromes
   g. x-linked disorders
   h. y-linked disorders
   i. Mitochondrial disorders
   j. Syndromes associated with imprinting
37. Metabolic disorders
   a. Carbohydrate disorders
   b. Amino acid disorders
   c. Organic acid disorders
38. Fat metabolic disorders
39. Lysosomal and peroxisomal disorders
40. Mitochondrial disorders
   a. Mucopolysaccharidoses
   b. Infectious disorders
   c. Fever without a focus
      i. PFAPA
      ii. PANDAS (Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections)
      iii. Human papilloma virus
      iv. Cutaneous infections
      v. Lymphadenopathy
      vi. Pharyngitis
41. Sinusitis
42. Adenoiditis
43. Tonsillitis
44. Otitis media and Eustachian tube dysfunction
45. Otitis externa
46. Mastoiditis
47. Croup (laryngotracheobronchitis)
48. Supraglottitis
49. Pertussis
50. Bronchiolitis
51. Ocular infections
52. Periorbital cellulitis/periorbital abscess
53. HIV & AIDS
54. Cervical adenitis/ deep neck space abscesses
55. Tuberculosis
56. Non-tuberculosis mycobacterial infections
57. Complications of above infectious diseases
58. Disorders of communication & vestibular dysfunction
59. Newborn hearing assessment
60. Pediatric hearing assessment
61. Conductive hearing loss
62. Sensorineural hearing loss
63. Vestibular abnormalities
64. Aural habilitation in children
65. Syndromic disorders
   a. Pendred’s Syndrome
   b. Branchial-Oto-Renal Syndrome
   c. Usher’s Syndrome
   d. Enlarged vestibular aqueduct
66. Disorders of speech production
67. Delayed speech
68. Dysphonia
69. Hyponasal vs. hypernasal speech
70. Velopharyngeal insufficiency
71. Ankyloglossia
72. Disorders of swallowing/ pharynx
73. Chronic aspiration
74. Laryngopharyngeal and gastroesophageal reflux
75. Caustic ingestion
76. Sialorrhea
77. Salivary gland disorders
78. Disorders of sleep
79. Obstructive sleep apnea
80. Behavioral insomnia of childhood
81. Limit-setting disorder
82. Night terrors
83. Delayed sleep phase syndrome
84. Restless leg syndrome
85. Disorders causing airway obstruction
86. Chaos (congenital high airway obstruction syndrome)
87. Nasal obstruction
   a. Allergic
   b. Non-allergic
88. Pharyngeal obstruction
89. Laryngeal obstruction
90. Tracheal obstruction
91. Benign and malignant lesions of the airway
92. Disorders of the neck
   a. Masses in childhood
   b. Pediatric thyroid disorders
93. Traumatic disorders
   a. Facial trauma
   b. Temporal bone

Guidelines: Fellow/s should be knowledgeable about all pediatric-related clinical practice guidelines produced by the American Academy of Otolaryngology-Head & Neck Surgery and/or the American Academy of Pediatrics.
2. Patient Care

**Goal:** Fellow/s should be committed and able to provide compassionate, appropriate, and effective medical care for their patients.

**Objectives:**

1. Demonstrate competency in obtaining history and review of systems in pediatric patients (infant, child, adolescent)
   a. Demonstrate ability to obtain a complete history referable to a targeted problem of the head and neck including chief complaint and current illness history
   b. Demonstrate ability to obtain a past medical history including allergies, current medications, previous operations and hospitalizations and a pertinent social history
   c. Demonstrate ability to obtain a review of systems, with emphasis on symptoms that affect the head and neck
2. Demonstrate competency in physical examination of pediatric patients (infant, child, adolescent)
   a. Demonstrate ability to perform an otological examination in an infant, child and adolescent
   b. Demonstrate ability to perform a nasal examination in an infant, child and adolescent
   c. Demonstrate ability to perform an examination of the oral cavity and oropharynx in an infant, child and adolescent
   d. Demonstrate ability to perform an examination of the neck in an infant, child and adolescent
   e. Demonstrate ability to perform an examination of the nasopharynx and larynx with a flexible endoscope in an infant, child and adolescent
3. Demonstrate ability to interpret audiometric results
   a. Tympanometry
   b. Behavioral audiometry
   c. Otoacoustic emissions
   d. Evoked response audiometry
4. Demonstrate ability to interpret head and neck radiologic images and/or reports
   a. Standard radiography of the head and neck
   b. Computed tomography of the head and neck
   c. Magnetic resonance imaging of the head and neck
   d. Ultrasonography of the head and neck
   e. Interventional radiography of the head and neck
5. Demonstrate ability to reach diagnosis and establish management of clinical problems in pediatric patients
6. Demonstrate ability to present new and established pediatric patients in a clear and concise manner
7. Demonstrate ability to evaluate pediatric patients in the ambulatory setting (infant, child, adolescent)

**Specific Medical Concepts:** Fellows should be knowledgeable about the following:

1. Fluids and electrolytes
   a. Maintenance fluid therapy, dehydration and replacement therapy in infants and children
2. Pediatric medications:
   a. Safety profile of antibiotics, antiemetics, antihistamines, steroids (inhaled, nasal, oral and intravenous), and beta-blockers in infants and children
3. Anesthesia considerations in pediatric otolaryngology
4. Medical treatment of the diseases listed under “Medical Knowledge”
Specific Surgical Concepts: Fellow/s should have an advanced understanding of the indications, perioperative management, surgical steps, potential complications and their treatment for the following procedures in children less than age 18 (unless otherwise specified):

1. Congenital anomalies domain
   a. Branchial cleft anomaly excision
   b. Thyroglossal duct cyst excision
   c. Dermoid cyst/glioma/encephalocele excision
   d. Hemangioma, lymphatic or vascular malformation excision
   e. Ranula excision
2. Head & neck surgery domain
   a. Tonsillectomy and/or adenoidectomy (age < 2 or ASA > II)
   b. Drainage deep neck abscess (age < 2 years or ASA > II)
   c. Excision angiofibroma or other nasopharyngeal tumor
   d. Parotidectomy
   e. Submandibular gland excision
   f. Thyroidectomy
3. Otology domain
   a. Tympanostomy tube placement in stenotic ears
   b. Tympanoplasty
   c. Mastoidectomy (age < 2 years or ASA > II)
   d. Ossicular reconstruction
   e. Cochlear implant
   f. Osseo-integrated implant
4. Closed airway procedures domain
   a. Exit procedure including the child with CHAOS
   b. Tracheotomy (age < 2 years)
5. Open airway procedures domain
   a. Thyrotomy (laryngofissure)
   b. Laryngoplasty/laryngotracheoplasty
   c. Cricotracheal/tracheal resection and repair
   d. Repair of laryngeal clefts
   e. Procedures for treatment of vocal fold paralysis
6. Endoscopy domain
   a. Flexible fiberoptic laryngoscopy (age < 2 years)
   b. Microdirect laryngoscopy and intervention (age < 2 years or ASA > II)
   c. Bronchoscopy and intervention (age < 2 years or ASA > II)
   d. Esophagoscopy and intervention (age < 2 years or ASA > II)
   e. Fiberoptic endoscopic evaluation of swallowing (FEES)
   f. Sialoendoscopy
7. Rhinology domain
   a. Sinonasal endoscopic (age < 13 years or ASA > II)
   b. Endoscopic sinonasal, extended
   c. Repair choanal atresia
8. Facial plastics domain
   a. Otoplasty
   b. Cleft repair – lip
   c. Cleft repair – palate
   d. Pharyngoplasty/pharyngeal flap
   e. Microtia repair
9. Facial trauma domain
   a. Reduction of facial fractures – midface, mandible
   b. Repair complex lacerations
3. Practice-Based Learning and Improvement

**Goal:** Fellow/s must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices.

**Objectives:**

1. Be an intelligent user of the academic literature in otolaryngology and related fields of pediatrics
2. Perform practice-based improvement activities using a systematic methodology
3. Demonstrate the ability to apply knowledge of study designs and statistical methods to the appraisal of clinical studies
4. Demonstrate effective time-management skills
5. Develop teaching and leadership skills
6. Develop the habit of analyzing one’s own practices for needed improvements

4. Systems-Based Practice

**Goal:** Fellow/s must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

**Objectives:**

1. Understand and be able to implement the concept of family-centered care
2. Be able to function as the otolaryngology member of the following interdisciplinary teams:
   a. Craniofacial anomalies
   b. Swallowing and feeding disorders
   c. Vascular malformations
   d. Airway anomalies
3. Be familiar with the process of reporting a case of suspected child abuse/Munchausen-by-proxy
   a. Understand the organization, financing and delivery mechanisms of healthcare with particular knowledge of programs which affect children
   b. Know how to efficiently utilize limited healthcare system resources to provide care of optimal value
   c. Be able to advocate for quality patient care and assist patients in dealing with system complexities
   d. Have an understanding of professional liability
   e. Have an understanding of OTO-HNS coding and compliance issues
   f. Have an understanding of the quality improvement process in pediatric otolaryngology

5. Professionalism

**Goal:** Fellows must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

**Objectives:**

1. Develop an understanding of and sensitivity to the impact of cultural, economic and ethnic factors on the doctor-patient and doctor-parent relationship and the delivery of healthcare
2. Understand the ethical considerations in pediatric otolaryngology
3. Learn to coordinate and optimize patient care through cooperation and respectful communication with all members of the healthcare team
4. Develop an understanding of one’s own abilities and limitations
5. Consistently demonstrate courtesy when interacting with clinical and non-clinical staff members
6. Understand the concept of confidentiality as it relates to patient care and communication
7. Involve other providers (specialty and/or primary care) in the evaluation and care of the patient where appropriate

6. Interpersonal Skills and Communication

**Goal:** Fellows must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, patients’ families and professional associates.

**Objectives:**

1. Be able to develop an ethical and therapeutic doctor-patient relationship with patients regardless of ethnic and educational background
2. Have a sense of empathy regarding the barriers that conspire to prevent patients from receiving optimal healthcare (lack of transportation, funds/insurance, family support, language skills, etc.)
3. Be able to create complete and coherent clinic and consultation notes, whether in a written (legible) or dictated form
4. Be facile in the use of translation services to communicate with non-English speaking patients

**Didactic Activities**

1. Division faculty, fellow and resident rounds
   a. Held weekly (every Monday morning)
   b. Includes monthly morbidity and mortality discussion
2. Penn Department of Otorhinolaryngology Grand Rounds
   a. Held weekly (every Thursday morning)
   b. Includes quarterly morbidity and mortality discussion
3. Aerodigestive Center multidisciplinary rounds
   a. Held bi-weekly (on alternate Thursday mornings)
   b. Attended by airway, GI, speech pathology and pulmonary practitioners
   c. Extensive discussion of complex aerodigestive patients
4. Fellow Core Lecture Series
   a. Held monthly (Wednesday)
   b. Topics are presented by selected faculty members covering pediatric ENT
5. Division Journal Club
   a. Held quarterly
   b. Articles selected by fellows
   c. Faculty discussion/participation at quarterly division meeting.
6. American Society of Pediatric Otolaryngology Webinar sessions
7. Airway Foreign Body and Open Airway Training Course
   a. Held biannually
   b. July session is run by Airway faculty for incoming fellows
      i. Retrieval of foreign bodies from live animals
      ii. Hands-on surgical training sessions for fellows (advanced level procedures)
   c. Winter session is open to residents and fellows from region and includes
      i. Presentations from national experts
      ii. Simulation sessions
      iii. Didactic strategy sessions
      iv. Retrieval of foreign bodies from live animals
v. Hands-on surgical training sessions for fellows (advanced level procedures)

8. University of Pennsylvania Endoscopic Sinus Surgery Course
   a. Monthly Neuroradiology rounds

9. Temporal Bone Surgical Training Course
   a. Fellows are highly encouraged to attend a temporal bone dissection course funded by the Division prior to the beginning of fellowship

10. Clinical, Basic Science and Research Seminars
    a. Available to fellows with funding through the Division

11. Fellows expected to attend at least 1 national meeting/year
    a. Minimum of one meeting/year funded
    b. Additional funding available is presenting

12. Available national meetings of the following societies: (If meeting of interest is not listed, attendance is taken into consideration.)
    a. AAP: American Academy of Pediatrics
    b. ABEA: American Broncho-Esophagological Association
    c. AHNS: American Head and Neck Society
    d. ALA: American Laryngological Association
    e. AAO-HNS: American Academy of Otolaryngology: Head and Neck Surgery
    f. Annual European Society of Pediatric Otolaryngology Meeting
    g. Annual Meeting of the International Conference on Cochlear Implants and Other Implantable Auditory Technologies
    h. ANS: American Neurotology Society
    i. AOS: American Otological Society
    j. ARS: American Rhinologic Society
    k. ASPO: American Society of Pediatric Otolaryngology
    l. ARO: Association for Research in Otolaryngology Winter Meeting
    m. North American Skull Base Society
    n. SENTAC: Society for Ear, Nose and Throat Advances in Children
    o. SOHN: Society of Otorhinolaryngology: Head and Neck Nurses Spring and Fall Meetings
    p. The Triologic Society (both annual meeting and section meetings)

We currently require all fellows to participate in the following interdisciplinary quality improvement and patient safety programs:

1. Monthly Division Morbidity and Mortality (M&M) rounds
2. Quarterly Otorhinolaryngology Departmental M&M rounds
3. Monthly interdisciplinary Aerodigestive rounds
4. Weekly Neonatal-Otolaryngology patient rounds
5. Mandatory annual CHOP online patient and workplace safety training
6. Quarterly bioethics meeting with Dr. Steven Handler

Reading

Each fellow will be provided with a book allowance of $500/year.

Recommended reading
1. Pediatric Otolaryngology: Principles and Practice Pathways by Wetmore, Muntz, McGill (copy in office for reference
4. Complications: A Surgeon’s Notes on an Imperfect Science by Gawande
Evaluation Process

At the beginning of each academic year, each fellow is required to participate in a comprehensive orientation. During the orientation period, the Program Director will meet with each fellow individually and go through the written curriculum. In addition to frequent informal feedback and formal faculty evaluations, the program director will meet with each fellow individually on a semi-annual basis in order to review the following:

1. Compliance with the curriculum
2. Case logs
3. Scholarly activities
4. Performance evaluations
5. Fellow evaluation of the faculty and program
6. ACGME Milestone evaluations

The Program Director will also have each of the faculty formally evaluate the following quarterly:

1. Faculty development opportunities pertaining to the fellowship
2. Availability and utilization of resources available to the program
3. Quality of fellow supervision by the faculty, Program Director and Division Chief
2nd Year in Pediatric Otolaryngology

The second-year fellow is expected to take a larger role in the teaching of the first-year fellows and residents. Six months prior to the commencement of the second year, the fellow and program director will meet and create a second-year plan.

Service Rotation
The curriculum for the second-year fellow is structured to allow for the development of individual leadership training and focused clinical training. The second-year fellow is expected to participate in complex surgical cases (i.e. laryngotracheal reconstructions) and on occasion, is expected to function in a similar clinical role as the accredited fellows.

Clinical Mastery
The fellow will have the option of attending in-house or away rotations/courses for the purpose of clinical enhancement of complimentary clinical skills. Rotations must be approved by the program director. Examples of acceptable rotations:
1. Vascular Malformation Surgery
2. Sleep Medicine
3. Skull Base Surgery
4. Cleft Palate and Craniofacial Surgery
5. Microtia and Reconstructive Surgery
6. Radiology
7. Anesthesia

Junior Attending Transition
During the second year, the fellow will be given the opportunity to function independently under the guidance of our faculty. The fellow will be granted limited, graduated clinical and operating room privileges with no overnight or weekend attending responsibilities. (The application process will be initiated mid-winter of the first year.) Specific roles of the junior attending will include running morning rounds with the residents and 1st year fellow, staffing inpatient consults, and performing appropriate add-on surgical cases during the daytime hours. The fellow will also have a limited outpatient clinical experience at the discretion of the program director. Each of the second year fellows will alternate weeks in the junior attending role.

Leadership
The fellow will have the following opportunities to enhance their leadership and business skills:
1. “Medical Legal Issues Facing the CHOP Practitioner”
2. Business education offerings
3. American College of Physician Executives sponsored course/s
4. Wharton School of Business courses
5. Karen Zupko & Associates coding course/s
6. Bill’s (Dr. William Potsic) Book Club
   a. Quarterly meetings with assigned reading involving practice management/business topics