

# The Pediatric Otolaryngology Milestone Project

*A Joint Initiative of*

The Accreditation Council for Graduate Medical Education

and

The American Board of Otolaryngology



Allergy • Facial Plastic & Reconstructive Surgery • Head & Neck Surgery  
Laryngology • Neurotology • Otolaryngology • Pediatric Otolaryngology  
Rhinitis • Sleep Medicine



ACGME

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The Milestones are designed only for use in evaluation of the fellow in the context of their participation in ACGME-accredited residency or fellowship programs. The Milestones provide a framework for assessment of the development of the fellow in key dimensions of the elements of physician competency in a specialty or subspecialty. They neither represent the entirety of the dimensions of the six domains of physician competency, nor are they designed to be relevant in any other context.

## Pediatric Otolaryngology Milestones

**Chair: Anna Messner, MD**

### **Working Group**

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*\*Acknowledgement: Special thanks to Sukgi Choi, MD, who was an active member of both the Working and Advisory Groups.*

## Milestone Reporting

This document presents Milestones designed for programs to use in semi-annual review of fellow performance and reporting to the ACGME. Milestones are knowledge, skills, attitudes, and other attributes for each of the ACGME competencies organized in a developmental framework from less to more advanced. They are descriptors and targets for fellow performance as a fellow moves from entry into fellowship through graduation. In the initial years of implementation, the Review Committee will examine Milestone performance data for each program's fellows as one element in the Next Accreditation System (NAS) to determine whether fellows overall are progressing.

For each period, review and reporting will involve selecting milestone levels that best describe a fellow's current performance and attributes. Milestones are arranged into numbered levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert in the subspecialty.

Selection of a level implies that the fellow substantially demonstrates the milestones in that level, as well as those in lower levels (see the diagram on page v).

- Level 1:** The fellow demonstrates milestones expected of an incoming fellow.
- Level 2:** The fellow is advancing and demonstrates additional milestones, but is not yet performing at a mid-fellowship level.
- Level 3:** The fellow continues to advance and demonstrate additional milestones, consistently including the majority of milestones targeted for fellowship.
- Level 4:** The fellow has advanced so that he or she now substantially demonstrates the milestones targeted for fellowship. This level is designed as the graduation target.
- Level 5:** The fellow has advanced beyond performance targets set for fellowship and is demonstrating "aspirational" goals which might describe the performance of someone who has been in practice for several years. It is expected that only a few exceptional fellows will reach this level.

## **Additional Notes**

Level 4 is designed as the graduation *target* and *does not* represent a graduation *requirement*. Making decisions about readiness for graduation is the purview of the fellowship program director. Study of Milestone performance data will be required before the ACGME and its partners will be able to determine whether milestones in the first four levels appropriately represent the developmental framework, and whether Milestone data are of sufficient quality to be used for high-stakes decisions.

Examples are provided with some milestones. Please note that the examples are not the required element or outcome; they are provided as a way to share the intent of the element.

Some milestone descriptions include statements about performing independently. These activities must occur in conformity to the ACGME supervision guidelines, as well as institutional and program policies. For example, a fellow who performs a procedure independently must, at a minimum, be supervised through oversight.

*Answers to Frequently Asked Questions about Milestones are available on the Milestones web page:*

<http://www.acgme.org/acgmeweb/Portals/0/MilestonesFAQ.pdf>

The diagram below presents an example set of milestones for one sub-competency in the same format as the ACGME Report Worksheet. For each reporting period, a fellow's performance on the milestones for each sub-competency will be indicated by selecting the level of milestones that best describes that fellow's performance in relation to those milestones.

Airway Management – Patient Care				
Level1	Level2	Level3	Level4	Level5
<ul style="list-style-type: none"> <li>Recognizes the signs and symptoms of airway obstruction in infants and children (e.g., stridor, airway foreign body)</li> <li>Generates a differential diagnosis of airway obstruction</li> <li>Applies knowledge of pediatric upper and lower airway anatomy and physiology</li> <li>Recognizes pediatric sleep disorders</li> </ul>	<ul style="list-style-type: none"> <li>Applies knowledge and formulates a treatment plan for common causes of pediatric airway obstruction (e.g., laryngomalacia, vocal fold paresis, subglottic stenosis, sleep-disordered breathing)</li> <li>Safely performs direct laryngoscopy and bronchoscopy, with intervention in children over age 3 years</li> <li>Performs tracheotomy in children over 3 years of age</li> </ul>	<ul style="list-style-type: none"> <li>Applies knowledge and formulates an appropriate treatment plan for unusual causes of airway obstruction (e.g., tracheal stenosis, congenital high airway obstruction syndrome (CHAOS))</li> <li>Safely performs direct laryngoscopy and bronchoscopy, with intervention in infants</li> <li>Performs tracheotomy in children less than 3 years of age</li> </ul>	<ul style="list-style-type: none"> <li>Understands the various reconstruction options in a child with supraglottic, glottic, subglottic or tracheal obstruction</li> <li>Safely performs direct laryngoscopy and bronchoscopy, with intervention in neonates or children with complex airway anatomy</li> <li>Performs single stage laryngotracheal reconstruction</li> <li>Develops treatment strategies for children with persistent obstructive sleep apnea post adenotonsillectomy</li> </ul>	<ul style="list-style-type: none"> <li>Formulates an appropriate treatment plan for patients requiring revision airway surgery</li> <li>Performs multistage or revision laryngotracheal reconstruction</li> <li>Performs cricotracheal resection</li> </ul>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				

Selecting a response box in the middle of a level implies that milestones in that level and in lower levels have been substantially demonstrated.

Selecting a response box on the line in between levels indicates that milestones in lower levels have been demonstrated as well as **some** milestones in the higher level(s).

Airway Management – Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Recognizes the signs and symptoms of airway obstruction in infants and children (e.g., stridor, retractions)</p> <p>Generates a differential diagnosis of airway obstruction</p> <p>Applies knowledge of pediatric upper and lower airway anatomy and physiology</p> <p>Recognizes the role of clinical history, physical examination, and polysomnography in the evaluation of pediatric sleep disorders</p>	<p>Applies knowledge and formulates a treatment plan for common causes of pediatric airway obstruction (e.g., laryngomalacia, vocal fold paresis, subglottic stenosis, foreign body, sleep-disordered breathing)</p> <p>Safely performs direct laryngoscopy and bronchoscopy with intervention in children over age 3 years of age</p> <p>Performs tracheotomy in children over 3 years of age</p>	<p>Applies knowledge and formulates an appropriate treatment plan for unusual causes of airway obstruction (e.g., tracheal stenosis, congenital high airway obstruction syndrome [CHAOS])</p> <p>Safely performs direct laryngoscopy and bronchoscopy with intervention in infants</p> <p>Performs tracheotomy in children less than 3 years of age</p>	<p>Understands the various reconstruction options in a child with supraglottic, glottic, subglottic, or tracheal obstruction</p> <p>Safely performs direct laryngoscopy and bronchoscopy with intervention in neonates or children with complex airway anatomy</p> <p>Performs single stage laryngotracheal reconstruction</p> <p>Develops treatment strategies for children with persistent obstructive sleep apnea post adenotonsillectomy</p>	<p>Formulates an appropriate treatment plan for patients requiring revision airway surgery</p> <p>Performs multistage or revision laryngotracheal reconstruction</p> <p>Performs cricotracheal resection</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				

Pediatric Neck Mass – Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Demonstrates knowledge of head and neck embryology and anatomy</p> <p>Formulates basic differential diagnoses of pediatric neck masses</p> <p>Evaluates children, including imaging and laboratory studies, with inflammatory, congenital, and neoplastic neck masses</p> <p>Performs appropriate neck mass biopsies and drainage of routine neck abscesses</p>	<p>Demonstrates detailed embryologic understanding of congenital neck masses</p> <p>Performs excision of common congenital neck masses (e.g., second branchial cleft anomalies, thyroglossal duct cysts)</p>	<p>Applies knowledge of the classification, evaluation, and treatment options for vascular anomalies</p> <p>Applies knowledge of the classification, evaluation, and treatment options for pediatric head and neck neoplasms and malignancies</p> <p>Participates in multidisciplinary care of the pediatric head and neck oncology patient</p>	<p>Performs excision of complex or recurrent congenital neck masses (e.g., first, third, and fourth branchial cleft anomalies)</p> <p>Provides medical and surgical management of parotid masses</p> <p>Provides medical and surgical management of salivary disorders (e.g., ranulas, stones, sialorrhea)</p>	<p>Provides medical and surgical management of thyroid masses</p> <p>Has recognized expertise in the management of pediatric head and neck masses</p> <p>Teaches colleagues about evaluation and management of pediatric head and neck masses</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				



Rhinology – Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Demonstrates knowledge of sinonasal embryology and anatomy</p> <p>Formulates basic differential diagnoses of pediatric sinonasal masses</p> <p>Evaluates children with inflammatory, congenital, and neoplastic sinonasal masses, including appropriate imaging studies</p> <p>Performs pediatric diagnostic sinonasal endoscopy</p>	<p>Demonstrates detailed embryologic understanding of congenital sinonasal masses</p> <p>Performs sinonasal surgery on children over 13 years of age</p> <p>Recognizes the role of systemic diseases (e.g., allergies, cystic fibrosis, immune deficiency, ciliary dyskinesia) in the care of children with chronic rhinosinusitis</p> <p>Provides medical management of children with recalcitrant rhinosinusitis</p>	<p>Applies knowledge of the classification, evaluation, and treatment options for pediatric sinonasal and skull base neoplasms</p> <p>Performs excision of congenital midline nasal masses</p> <p>Applies knowledge of the surgical options for choanal atresia and piriform aperture stenosis, and performs surgical repair</p> <p>Performs sinonasal surgery on children of all ages, including those with orbital complications of sinus disease</p>	<p>Performs revision sinonasal surgery</p> <p>Performs sinonasal surgery on children of all ages, including those with intracranial complications of sinus disease</p>	<p>Has recognized expertise in the management of pediatric rhinology</p> <p>Performs extended sinonasal surgery for skull base lesions ( e.g., juvenile nasopharyngeal angiofibroma)</p> <p>Teaches colleagues about evaluation and management of pediatric rhinology</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				

Hearing Loss — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Demonstrates understanding of the anatomy, including central auditory pathways, and physiology of hearing</p> <p>Demonstrates basic knowledge of behavioral and physiologic testing of auditory function</p> <p>Demonstrates basic knowledge of common causes of pediatric hearing loss</p> <p>Demonstrates knowledge of the role of tympanostomy tube placement in management of conductive hearing loss</p>	<p>Demonstrates knowledge of the methods and limitations of newborn hearing screening</p> <p>Demonstrates knowledge of the effect of age and developmental level on the various methods of hearing evaluation</p> <p>Demonstrates knowledge of the referral process for early intervention in pediatric hearing loss</p> <p>Understands the multidisciplinary needs of children with hearing loss</p> <p>Demonstrates knowledge of surgical anatomy of the pediatric temporal bone</p>	<p>Demonstrates knowledge of infectious and environmental causes of pediatric hearing loss</p> <p>Demonstrates knowledge of genetic and syndromic causes of hearing loss</p> <p>Understands the natural history of stable and progressive hearing loss</p> <p>Demonstrates knowledge of the work-up for etiology of pediatric conductive, sensorineural and mixed hearing loss</p> <p>Demonstrates knowledge of pediatric balance disorders</p>	<p>Demonstrates knowledge of pediatric auditory neuropathy/ dyssynchrony</p> <p>Demonstrates comprehensive awareness of aural habilitation and rehabilitation options</p> <p>Demonstrates knowledge of surgical management of conductive, sensorineural, and mixed hearing loss</p> <p>Demonstrates knowledge of management options for children with unilateral hearing loss</p>	<p>Teaches concepts of hearing loss etiology and management</p> <p>Demonstrates knowledge of the laws related to the education of children with hearing loss</p> <p>Leads multidisciplinary team in evaluations of childhood hearing loss</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				

Craniofacial Conditions — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Demonstrates knowledge of normal facial skeletal development</p> <p>Recognizes normal speech, language, and developmental milestones</p> <p>Recognizes need for multidisciplinary management of patients with craniofacial conditions</p>	<p>Demonstrates knowledge of common craniofacial syndromes</p> <p>Demonstrates knowledge of, indications for, and timing of staged treatment protocols for patients with craniofacial conditions (e.g., cleft lip and palate)</p> <p>Demonstrates knowledge of the range of outer ear anomalies</p> <p>Demonstrates knowledge of pediatric facial nerve disorders</p>	<p>Recognizes common craniofacial syndromes</p> <p>Demonstrates knowledge of pediatric speech and voice disorders (e.g., apraxia, dysarthria, hoarseness)</p> <p>Demonstrates knowledge of the evaluation of a patient with velopharyngeal dysfunction</p> <p>Demonstrates knowledge of maxillofacial trauma management in the pediatric patient</p> <p>Demonstrates knowledge of the evaluation of pediatric patients with facial nerve disorders</p>	<p>Demonstrates knowledge of otolaryngologic manifestations of craniofacial syndromes</p> <p>Demonstrates knowledge of surgical management for cleft lip and palate surgery</p> <p>Demonstrates knowledge of management options for velopharyngeal dysfunction</p> <p>Demonstrates knowledge of surgical management of children with mandibular hypoplasia (e.g., mandibular distraction)</p> <p>Demonstrates knowledge of surgical management for microtia</p>	<p>Recognizes rare craniofacial syndromes</p> <p>Has recognized expertise in the management of craniofacial conditions</p> <p>Has recognized expertise in the management of pediatric facial trauma</p> <p>Teaches colleagues about evaluation and management of craniofacial conditions and pediatric facial trauma</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				

Patient Safety — Systems-based Practice				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Demonstrates an understanding of the importance of patient safety and the occurrence of medical errors in pediatric otolaryngology patients</p> <p>Participates in an effective patient hand-off and surgical time-out processes</p> <p>Presents at quality improvement conference (organizes data and identification of pertinent patient safety issues)</p>	<p>Recognizes medical errors as systemic events and facilitates reporting in a blame-free environment</p> <p>Anticipates the inherent risk of medical errors as a result of inadequate patient hand-offs and surgical time-outs</p> <p>Uses chain of command to develop and implement patient care plans (resident to fellow to attending)</p>	<p>Anticipates potentially dangerous situations and intervenes appropriately</p> <p>Analyzes quality improvement findings and provides feedback to improve patient safety</p>	<p>Advocates for quality patient care and optimal patient care systems</p> <p>Educates other services about patient safety issues in otolaryngology head and neck surgery</p>	<p>Participates as an advocate on local, regional, or national levels for pediatric patient safety</p> <p>Designs evidence-based clinical pathways to decrease medical errors</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Resource Utilization — Systems-based Practice				
Level 1	Level 2	Level 3	Level 4	Level 5
Understands the resources (e.g., social work, case manager) necessary to coordinate pediatric patient care	<p>Considers socio-economic issues when developing pediatric patient care plans</p> <p>Appropriately collaborates with allied health practitioners (e.g., nurse practitioners, physician assistants)</p>	<p>Incorporates cost issues into care decisions</p> <p>Uses technology and other hospital/clinic resources to improve pediatric patient care</p> <p>Understands the principles of insurance coverage and access to care for children</p>	<p>Practices cost-effective care (e.g., managing length of stay, operative efficiency)</p> <p>Understands issues of transition to practice (e.g., coding, quality measures, documentation, compensation)</p>	<p>Develops and implements cost efficient clinical pathways</p> <p>Advocates on local, regional, or national levels for health care policy</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				

Evidence-based Medicine — Practice-based Learning and Improvement				
Level 1	Level 2	Level 3	Level 4	Level 5
Understands currently available evidence-based guidelines relevant to pediatric otolaryngology  Understands the quality and limitations of available literature and data	Incorporates evidence-based guidelines into clinical decisions	Synthesizes a clinical plan from multiple sources of evidence	Recognizes gaps in current evidence	Formulates an outcomes-based quality improvement project to answer a clinical question
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Self-directed Learning — Practice-based Learning and Improvement				
Level 1	Level 2	Level 3	Level 4	Level 5
Takes responsibility for actions  Acknowledges own errors	Committed to self-improvement  Responds well to feedback	Is self-reflective about academic, professional, and personal needs, strengths, and limitations  Analyzes and interprets own experience	Applies critical analysis of literature to patient care	Publishes original research  Contributes to regional or national educational activities
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Behavior – Professionalism				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Demonstrates behavior that conveys caring, honesty, and genuine interest in patients and families</p> <p>Demonstrates respect for patients and families</p> <p>Exhibits professional behavior (e.g., reliability, industry, integrity, confidentiality)</p> <p>Maintains respect for patient confidentiality</p> <p>Completes paperwork, administrative tasks and assignments in a timely manner</p>	<p>Is aware of ethical issues in patient care, including issues of beginning and end-of-life care</p> <p>Recognizes individual limits in clinical situations and asks for assistance when needed</p> <p>Understands and manages the issues related to fatigue and sleep deprivation</p> <p>Recognizes issues related to research ethics</p> <p>Demonstrates respect for all members of the health care team</p>	<p>Discusses, analyzes, and manages common ethical situations</p> <p>Displays sensitivity and responsiveness toward all patient populations</p> <p>Demonstrates respectful behavior in challenging situations and earns the respect of other providers within the system</p>	<p>Discusses, analyzes, and manages ethical issues in complicated and challenging situations</p> <p>Develops a mutually agreeable care plan in the context of conflicting physician, patient, and caregiver values and beliefs</p> <p>Understands the ethical implications of incorporating new surgical skills and techniques into practice</p>	<p>Helps lead institutional and organizational ethics programs</p> <p>Mentors and teaches integrity, altruism, individual responsibility, and professionalism</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				

Leadership — Professionalism				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates an understanding of his/her role on the pediatric otolaryngology team (inpatient and operating room)  Works effectively with others on the team	Organizes people and leads the pediatric otolaryngology team	Manages the team efficiently and effectively  Demonstrates leadership skills in adverse situations and environments	Demonstrates advanced skills in leading multidisciplinary teams  Motivates the team to high performance	Models to and teaches others to be leaders  Develops the talents of others
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>



Health Care Team Communications — Interpersonal and Communication Skills				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates an understanding of the importance of effective communication with other providers	<p>Communicates effectively with attending staff members, peers, and other health care providers</p> <p>Conducts appropriate transitions of care (e.g., hand-offs, sign-outs, transfers of care)</p>	<p>Resolves disagreements with other health care providers in a professional manner</p> <p>Generates clear and concise documentation of patient interactions</p>	<p>Negotiates and manages conflict among care providers</p> <p>Communicates effectively in times of crises</p>	Is viewed as an exemplary communicator, problem solver, and ambassador for the pediatric otolaryngology service
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Patient- and Family-centered Care — Interpersonal and Communication Skills				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates an understanding of the value of patient- and family-centered care  Obtains thorough informed consent for routine procedures  Demonstrates sensitivity in caring for culturally diverse patients	Communicates effectively with patients and families in both the inpatient and outpatient settings  Uses interpreter services appropriately	Demonstrates effective communication with challenging families  Obtains thorough informed consent for complex procedures  Appropriately uses multiple forms of communication (e.g., e-mail, patient portal, social media) with respect for patient privacy	Facilitates and participates in patient/family/health care team conferences  Mentors and teaches others on patient- and family-centered communication skills	Serves on local, regional, or national committees addressing ethical or advocacy issues
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>