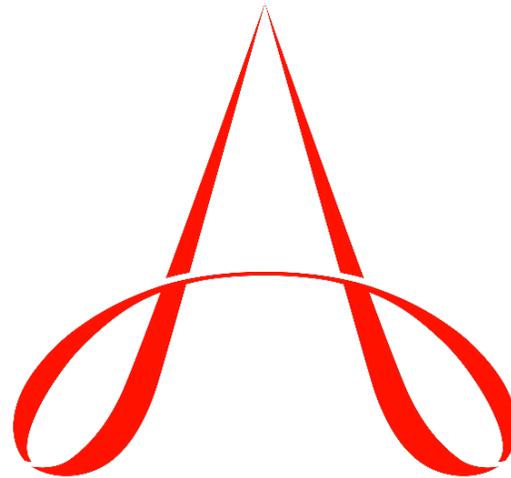




Supplemental Guide: Pediatric Otolaryngology



ACGME

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Milestones Supplemental Guide

This document provides additional guidance and examples for the Pediatric Otolaryngology Milestones. This is not designed to indicate any specific requirements for each level, but to provide insight into the thinking of the Milestone Work Group.

Included in this document is the intent of each Milestone and examples of what a Clinical Competency Committee (CCC) might expect to be observed/assessed at each level. Also included are suggested assessment models and tools for each subcompetency, references, and other useful information.

Review this guide with the CCC and faculty members. As the program develops a shared mental model of the Milestones, consider creating an individualized guide (Supplemental Guide Template available) with institution/program-specific examples, assessment tools used by the program, and curricular components.

Additional tools and references, including the Milestones Guidebook, Clinical Competency Committee Guidebook, and Milestones Guidebook for Residents and Fellows, are available on the [Resources](#) page of the Milestones section of the ACGME website.

| Patient Care 1: Pediatric Chronic Airway Management | |
|---|--|
| Overall Intent: To diagnose and treat the spectrum of chronic airway conditions, including sleep, voice, and laryngology that affect infants, children, and adolescents, in both with no comorbidity as well as complex comorbidities | |
| Milestones | Examples |
| <p>Level 1 <i>Performs an age-appropriate history and physical examination in patients with airway conditions</i></p> <p><i>Provides routine peri-operative care for pediatric patients with airway conditions</i></p> <p><i>Recognizes common complications</i></p> | <ul style="list-style-type: none"> ● Elicits history of stridor that occurs shortly after birth when assessing for laryngomalacia ● Knows when bedside fiberoptic exam is appropriate ● Recognizes risk factors for vocal cord palsy |
| <p>Level 2 <i>Formulates developmentally appropriate diagnostic and treatment plans for patients with airway conditions</i></p> <p><i>Performs routine operative airway procedures</i></p> <p><i>Initiates work-up of common complications</i></p> | <ul style="list-style-type: none"> ● Develops a working diagnosis of sleep apnea with management plan that varies by age of the patient ● “Procedures” include surgical and non-surgical procedures, such as drug-induced sleep endoscopy in a two-year-old child to evaluate for levels of obstruction ● Initiates work-up of vocal fold palsy, eliciting history of medical problems, including voice or feeding or speech issues |
| <p>Level 3 <i>Explains the risks, benefits, and alternatives of medical and surgical interventions for airway conditions</i></p> <p><i>Performs routine operative airway procedures in patients with complex conditions</i></p> <p><i>Manages common complications; recognizes uncommon/infrequent complications</i></p> | <ul style="list-style-type: none"> ● Performs pre-operative counseling for adenotonsillectomy in a child with mild obstructive sleep apnea, as well as medical options ● Performs drug-induced sleep endoscopy with tonsillectomy, adenoidectomy, and supraglottoplasty in a child with Trisomy 21 ● Recognizes that torticollis after adenoidectomy may be due to atlantoaxial subluxation |
| <p>Level 4 <i>Implements a standard treatment plan that includes the interdisciplinary team</i></p> <p><i>Performs advanced operative airway procedures</i></p> <p><i>Manages uncommon/infrequent complications</i></p> | <ul style="list-style-type: none"> ● Identifies a child with history of aspiration who may need multidisciplinary evaluation by pulmonary and gastroenterology ● Performs endoscopic laryngeal cleft repair ● Uses fiberoptic bronchoscopy at bedside to manage tracheal dilation as a complication of tracheotomy with chronic ventilation |

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| <p>Level 5 <i>Adapts standard treatment plans and interventions to special circumstances</i></p> <p><i>Performs advanced operative airway procedures in patients with complex conditions, including revision</i></p> <p><i>Serves as a peer resource for managing uncommon/infrequent complications</i></p> | <ul style="list-style-type: none"> ● Describes potential additional airway procedures to treat a child with cerebral palsy with seizure disorder to manage severe obstructive sleep apnea ● Performs cricotracheal resection in a child who has failed laryngotracheal reconstruction ● Serves on an American Society for Pediatric Otolaryngology (ASPO) panel for managing failed airway reconstruction |
| <p>Assessment Models or Tools</p> | <ul style="list-style-type: none"> ● Case-based discussion ● Direct observation ● Medical record (chart) review ● Multisource feedback ● Presentation ● Reflection ● Simulation ● Standardized oral examination |
| <p>Curriculum Mapping</p> | <ul style="list-style-type: none"> ● |
| <p>Notes or Resources</p> | <ul style="list-style-type: none"> ● American Academy of Otolaryngology. OTOSource. https://www.otosource.org/. Accessed 2021. ● Nguyen LHP, Bank I, Fisher R, Mascarella M, Young M. Managing the airway catastrophe: longitudinal simulation-based curriculum to teach airway management. <i>J Otolaryngol Head Neck Surg</i>. 2019;48(1):10. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6381681/pdf/40463_2019_Article_332.pdf. Accessed 2021. ● Mitchell RB, Hussey HM, Setzen G, et al. Clinical consensus statement: tracheostomy care. <i>Otolaryngol Head Neck Surg</i>. 2013;148(1):6-20. https://journals.sagepub.com/doi/10.1177/0194599812460376?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%20pubmed. |

| Patient Care 2: Pediatric Acute Airway Management | |
|---|---|
| Overall Intent: To diagnose and treat the spectrum of acute airway conditions that affect infants, children, and adolescents, in patients with or without comorbidities | |
| Milestones | Examples |
| <p>Level 1 <i>Identifies potential airway emergencies in neonates and children with risk factors for difficult airway</i></p> <p><i>Escalates care of emergency airway (e.g., alerts operating room)</i></p> | <ul style="list-style-type: none"> ● Recognizes a neonate with Robin sequence and possible airway difficulty due to micrognathia and glossoptosis ● Recognizes airway distress in child while performing a consultation and calls attending to alert of possible airway emergency |
| <p>Level 2 <i>Performs airway assessment and age-appropriate focused history and physical</i></p> <p><i>Describes the age-appropriate airway management algorithm from least to most invasive</i></p> | <ul style="list-style-type: none"> ● Recognizes stridor versus stertor in exam, elevated pCO₂ on a capillary blood gas, and impending respiratory failure due to neonate Robin sequence and obstructive airway events ● Determines the need to escalate treatment from positioning to nasal trumpet to intubation in a patient with micrognathia |
| <p>Level 3 <i>Performs straightforward age-appropriate airway emergency procedures</i></p> <p><i>Implements an age-appropriate airway management algorithm from least to most invasive</i></p> | <ul style="list-style-type: none"> ● Performs direct laryngoscopy in an emergency situation to assist in airway management ● Performs management of a neonate with micrognathia by trying prone position, placing a nasal trumpet, and escalating to intubation |
| <p>Level 4 <i>Performs advanced airway emergency procedures</i></p> <p><i>Implements an age-appropriate airway management plan in complex patients</i></p> | <ul style="list-style-type: none"> ● Performs direct laryngoscopy and bronchoscopy for foreign body in a child in acute airway distress ● On a neonate with arthrogryposis, tries conservative airway management with positioning, non-invasive positive pressure ventilation, and escalates to flexible fiberoptic intubation |
| <p>Level 5 <i>Performs complex airway emergency procedures in complex patients</i></p> <p><i>Develops age-appropriate and patient-specific anticipatory airway management plans</i></p> | <ul style="list-style-type: none"> ● Performs bronchoscopy and intervention in a patient who recently underwent a slide tracheoplasty with acute decompensation ● Develops an acute airway management plan for a slide tracheoplasty patient to be posted at the bedside for critical care team to access |
| <p>Assessment Models or Tools</p> | <ul style="list-style-type: none"> ● Case-based discussion ● Direct observation ● Medical record (chart) review |

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| | <ul style="list-style-type: none"> ● Multisource feedback ● Presentation ● Reflection ● Simulation ● Standardized oral examination |
| Curriculum Mapping | <ul style="list-style-type: none"> ● |
| Notes or Resources | <ul style="list-style-type: none"> ● American Academy of Otolaryngology. OTOSource. https://www.otosource.org/. Accessed 2021. ● Mitchell RB, Hussey HM, Setzen G, et al. Clinical consensus statement: tracheostomy care. <i>Otolaryngol Head Neck Surg</i>. 2013;148(1):6-20. https://journals.sagepub.com/doi/10.1177/0194599812460376?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%20pubmed. ● Nguyen LHP, Bank I, Fisher R, Mascarella M, Young M. Managing the airway catastrophe: longitudinal simulation-based curriculum to teach airway management. <i>J Otolaryngol Head Neck Surg</i>. 2019;48(1):10. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6381681/pdf/40463_2019_Article_332.pdf |

| Patient Care 3: Pediatric Head and Neck Mass/Lesion Overall Intent: To accurately evaluate and effectively manage children with masses of the head and neck | |
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| Milestones | Examples |
| <p>Level 1 <i>Performs a history and physical examination in patients with head and neck mass/lesion</i></p> <p><i>Provides routine peri-operative care for patients with head and neck mass/lesion, with guidance</i></p> <p><i>Recognizes common complications</i></p> | <ul style="list-style-type: none"> ● Obtains appropriate history and accurate physical exam for a patient with a thyroglossal duct cyst ● Prepares a patient for surgery of a neck mass including appropriate orders ● Discusses common complications, like scarring, wound infection, or cyst recurrence associated with a Sistrunk procedure |
| <p>Level 2 <i>Formulates a diagnostic plan for patients with head and neck mass/lesion</i></p> <p><i>Performs routine operative procedures for head and neck mass/lesion</i></p> <p><i>Initiates work-up of common complications</i></p> | <ul style="list-style-type: none"> ● Identifies appropriate pre-operative testing including imaging for a patient with a thyroglossal duct cyst ● Performs a routine Sistrunk procedure ● Distinguishes a seroma from a post-operative infection after a Sistrunk procedure |
| <p>Level 3 <i>Explains the risks and benefits of treatment plans for head and neck mass/lesion</i></p> <p><i>Performs routine operative procedures for head and neck mass/lesion in patients with complex conditions</i></p> <p><i>Manages common complications; recognizes uncommon/infrequent complications</i></p> | <ul style="list-style-type: none"> ● Accurately describes the risks of leaving a thyroglossal duct cyst in situ versus removing it ● Performs Sistrunk procedure in a patient with bleeding disorder ● Resolves a post-operative seroma successfully following a Sistrunk procedure |
| <p>Level 4 <i>Implements a treatment plan that includes the interdisciplinary team</i></p> <p><i>Performs advanced operative procedures for head and neck mass/lesion</i></p> <p><i>Manages uncommon/infrequent complications</i></p> | <ul style="list-style-type: none"> ● Participates in a pediatric tumor board ● Completes Sistrunk procedure in a patient who has previously undergone incision and drainage of an infected thyroglossal cyst ● Devises a plan and carries it out to control bleeding following head and neck surgery |

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| <p>Level 5 <i>Adapts typical treatment plans and techniques to special circumstances</i></p> <p><i>Performs advanced operative procedures for complex or recurrent head and neck mass/lesion</i></p> <p><i>Serves as a peer resource for managing uncommon/infrequent complications</i></p> | <ul style="list-style-type: none"> ● Plans peri-operative management of a child with a thyroglossal duct cyst and a bleeding disorder ● Completes a revision Sistrunk procedure ● Gives a presentation on the management of differentiated thyroid carcinoma identified in a thyroglossal duct cyst |
| <p>Assessment Models or Tools</p> | <ul style="list-style-type: none"> ● Case-based discussion ● Direct observation ● Medical record (chart) review ● Multisource feedback ● Presentation ● Reflection ● Simulation ● Standardized oral examination |
| <p>Curriculum Mapping</p> | <ul style="list-style-type: none"> ● |
| <p>Notes or Resources</p> | <ul style="list-style-type: none"> ● American Academy of Otolaryngology. OTOSource. https://www.otosource.org/. Accessed 2021. ● Ho M. Pediatric neck masses: imaging guidelines and recommendations. Radiol Clin N Am. 2022. 60:1-14. https://doi.org/10.1016/j.rcl.2021.08.001 |

| Patient Care 4: Pediatric Otologic Disease | |
|---|---|
| Overall Intent: To accurately evaluate and manage children with ear disorders, including inner, middle, and external ear | |
| Milestones | Examples |
| <p>Level 1 <i>Performs a history and physical examination; interprets routine behavioral audiograms in patients</i></p> <p><i>Provides routine peri-operative care for patients with ear disease and/or hearing loss</i></p> <p><i>Recognizes common complications</i></p> | <ul style="list-style-type: none"> ● Accurately documents ear examination in a child ● Obtains consent, including discussion of nature of procedure, benefits, risks, and alternatives and writes appropriate orders for a child undergoing ear surgery ● Identifies tympanic membrane perforation after pressure equalizer (PE) tube extrusion |
| <p>Level 2 <i>Provides age-appropriate diagnostic and treatment plans for patients with ear disease and/or hearing loss</i></p> <p><i>Performs routine otologic operative procedures</i></p> <p><i>Initiates work-up of common complications</i></p> | <ul style="list-style-type: none"> ● Accurately counsels parents whose newborn has failed hearing screening ● Completes a routine tympanoplasty independently ● Manages post-tympanoplasty infection |
| <p>Level 3 <i>Explains the risks, benefits, and alternatives of interventions for ear disease, hearing loss, or vestibular disorders</i></p> <p><i>Performs routine otologic operative procedures in patients with complex conditions</i></p> <p><i>Manages common complications; recognizes uncommon/infrequent complications</i></p> | <ul style="list-style-type: none"> ● Accurately counsels families regarding pros and cons of tympanoplasty versus hearing aid for a child with a tympanic membrane perforation and conductive hearing loss ● Devises a management plan for peri-operative management of a child undergoing tympanoplasty who also has a bleeding disorder/seizure disorder ● Identifies facial nerve weakness in a child following ear surgery |
| <p>Level 4 <i>Implements standard treatment plans for otologic and vestibular conditions; centralizes multidisciplinary care for treatment plans</i></p> <p><i>Performs advanced otologic operative procedures</i></p> <p><i>Manages uncommon/infrequent complications</i></p> | <ul style="list-style-type: none"> ● For an infant with congenital cytomegalovirus (CMV)-related hearing loss, appropriately includes infectious disease and audiology services in a comprehensive plan to manage and monitor hearing ● Performs ossicular chain reconstruction ● Devises a management plan for vertigo following tympanoplasty |

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| <p>Level 5 <i>Adapts standard treatment plans and interventions to special circumstances; promotes family-centered care</i></p> <p><i>Performs advanced otologic operative procedures in patients with complex conditions; performs revision procedures; teaches otologic surgery</i></p> <p><i>Serves as a peer resource for managing uncommon/infrequent complications</i></p> | <ul style="list-style-type: none"> ● Devises a plan, with patient and family input, for management of bilateral tympanic membrane perforations in a child with sensorineural hearing loss ● Performs cochlear implant in a patient with severe cochlear malformation ● Serves as a resource for management of patient with cerebral spinal fluid (CSF) leak and meningitis after a cochlear implant surgery |
| <p>Assessment Models or Tools</p> | <ul style="list-style-type: none"> ● Case-based discussion ● Direct observation ● Medical record (chart) review ● Multisource feedback ● Presentation ● Reflection ● Simulation ● Standardized oral examination |
| <p>Curriculum Mapping</p> | <ul style="list-style-type: none"> ● |
| <p>Notes or Resources</p> | <ul style="list-style-type: none"> ● American Academy of Otolaryngology. OTOSource. https://www.otosource.org/. Accessed 2021. ● Jenks CM, Mithal LB, Hoff SR. Early identification and management of congenital cytomegalovirus. <i>Oto Clin N Am</i> 2021;54(6):1117-1127. 27 https://doi.org/10.1016/j.otc.2021.06.006 |

| Patient Care 5: Pediatric Rhinologic Diseases | |
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| Overall Intent: To accurately evaluate and manage children with rhinologic disorders and skull base disease | |
| Milestones | Examples |
| <p>Level 1 <i>Performs a history and physical examination in patients with rhinologic disease</i></p> <p><i>Provides routine peri-operative care for patients with rhinologic disease</i></p> <p><i>Recognizes common complications</i></p> | <ul style="list-style-type: none"> ● Obtains pertinent historical information from patients/caregivers presenting with sinonasal complaints and performs endoscopic examination when appropriate ● Adequately prepares and positions patients for rhinological surgery, including navigation ● Identifies post-operative sinus infection after endoscopic sinus surgery |
| <p>Level 2 <i>Formulates developmentally appropriate diagnostic and treatment plans for patients with rhinologic disease</i></p> <p><i>Performs routine rhinologic operative procedures</i></p> <p><i>Initiates work-up of common complications associated with rhinologic disease</i></p> | <ul style="list-style-type: none"> ● Recommends appropriate medical work-up in patients presenting with sinonasal complaints ● Performs endoscopic anterior/posterior ethmoidectomy, maxillary antrostomy, sphenoidotomy and frontal sinusotomy ● Consults appropriate services for patients with orbital complications of sinus disease |
| <p>Level 3 <i>Explains the risks, benefits, and alternatives of medical and surgical interventions for rhinologic disease</i></p> <p><i>Performs routine rhinologic operative procedures in patients with complex conditions</i></p> <p><i>Manages common complications; recognizes uncommon/infrequent complications</i></p> | <ul style="list-style-type: none"> ● Counsels patients/families about risks of endoscopic sinus surgery ● Performs endoscopic sinus surgery on a patient with cystic fibrosis ● Recognizes indications for neurosurgical consultation and emergent endoscopic sinus surgery for patients with intracranial complications of sinus disease |
| <p>Level 4 <i>Implements a standard treatment plan that includes the multidisciplinary team</i></p> <p><i>Performs advanced endoscopic rhinologic operative procedures in patients with complex conditions</i></p> | <ul style="list-style-type: none"> ● Communicates effectively with ophthalmologists for management of patients with sinus conditions affecting the orbit ● Performs endoscopic choanal atresia repair in an infant with coloboma, heart defects, atresia choanae, growth retardation, genital abnormalities, and ear abnormalities (CHARGE) syndrome |

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| <p><i>Manages uncommon/infrequent complications associated with rhinologic disease</i></p> | <ul style="list-style-type: none"> ● Localizes and manages orbital complications of sinus disease |
| <p>Level 5 <i>Adapts standard treatment plans and interventions to special circumstances</i></p> <p><i>Performs advanced endoscopic rhinologic and skull base surgical care in patients with complex conditions, including revision</i></p> <p><i>Serves as a peer resource for managing uncommon/infrequent complications</i></p> | <ul style="list-style-type: none"> ● Considers complex comorbidities in managing patients with skull base lesions ● Collaborates with neurosurgeons in surgical extirpation of skull base lesions such as juvenile nasopharyngeal angiofibroma ● Participates in multidisciplinary conferences to discuss patients with complications of skull base surgery |
| <p>Assessment Models or Tools</p> | <ul style="list-style-type: none"> ● Case-based discussion ● Direct observation ● Medical record (chart) review ● Multisource feedback ● Presentation ● Reflection ● Simulation ● Standardized oral examination |
| <p>Curriculum Mapping</p> | <ul style="list-style-type: none"> ● |
| <p>Notes or Resources</p> | <ul style="list-style-type: none"> ● American Academy of Pediatrics. Subcommittee on Management of Sinusitis and Committee on Quality Improvement. Clinical practice guideline: management of sinusitis. Pediatrics. 2001 Sep;108(3):798-808. doi: 10.1542/peds.108.3.798. Erratum in: Pediatrics 2001 Nov;108(5):A24. Erratum in: Pediatrics 2002 May;109(5):40. PMID: 11533355. ● Chan KH, Winslow CP, Levin MJ, Abzug MJ, Shira JE, Liu AH, Simoes EA, Strain JD, Stool SE. Clinical practice guidelines for the management of chronic sinusitis in children. Otolaryngol Head Neck Surg. 1999 Mar;120(3):328-34. doi: 10.1016/S0194-5998(99)70270-6. PMID: 10064633. |

| Patient Care 6: Pediatric Craniofacial, Plastic, and Reconstructive Surgery | |
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| Overall Intent: To accurately evaluate and manage children | |
| Milestones | Examples |
| <p>Level 1 <i>Performs a history and physical examination in patients with craniofacial conditions and trauma</i></p> <p><i>Provides routine peri-operative care for patients with craniofacial conditions and trauma</i></p> <p><i>Recognizes common complications</i></p> | <ul style="list-style-type: none"> ● Obtains pertinent history, including airway, feeding, hearing and speech, for patients with cleft lip and palate presenting for otolaryngological evaluation ● Writes developmentally appropriate post-operative orders for patients undergoing cleft palate repair ● Recognizes post-palatoplasty bleeding that requires surgical intervention |
| <p>Level 2 <i>Formulates developmentally appropriate diagnostic and treatment plans for patients with craniofacial conditions and trauma</i></p> <p><i>Performs routine craniofacial and trauma operative procedures</i></p> <p><i>Initiates work-up of common complications</i></p> | <ul style="list-style-type: none"> ● Recommends developmentally appropriate audiological assessment of patients with craniofacial conditions ● Performs reduction and stabilization of facial fractures ● Initiates work-up of malocclusion after stabilization of facial fracture |
| <p>Level 3 <i>Explains the risks, benefits, and alternatives of medical and surgical interventions for craniofacial conditions and trauma</i></p> <p><i>Performs routine craniofacial and trauma operative procedures in patients with complex conditions</i></p> <p><i>Manages common complications; recognizes uncommon/infrequent complications</i></p> | <ul style="list-style-type: none"> ● Explains options and attendant risks for management of microtia, including autologous rib and alloplastic reconstructions ● Performs repair of complex lacerations from a dog bite ● Manages new obstructive sleep apnea in a patient who has had surgery for velopharyngeal insufficiency |
| <p>Level 4 <i>Implements a standard treatment plan that includes the multidisciplinary team</i></p> <p><i>Performs advanced craniofacial and trauma operative procedures</i></p> | <ul style="list-style-type: none"> ● Develops treatment plan in collaboration with multidisciplinary craniofacial team for management of comorbidities (feeding, speech, sleep, breathing issues) in patients with syndromic craniosynostosis ● Collaborates with craniofacial team to perform Lefort II/III distraction osteogenesis in patients with Pfeiffer syndrome |

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| <p><i>Manages uncommon/infrequent complications</i></p> | <ul style="list-style-type: none"> ● Identifies and manages patients with neurologic and skull base complications including CSF leaks after midface distraction |
| <p>Level 5 <i>Adapts standard treatment plans and interventions to special circumstances (rare cases)</i></p> <p><i>Performs advanced craniofacial and trauma operative procedures in patients with complex condition, including revision</i></p> <p><i>Serves as a peer resource for managing uncommon/infrequent complications</i></p> | <ul style="list-style-type: none"> ● Leads the multidisciplinary team discussion for management of patients with Tessier midline clefts ● Collaborates with the multidisciplinary team to perform bone graft and soft tissue flap reconstruction of craniofacial clefts for a patient with holoprosencephaly ● Discusses management of nasal obstruction and obstructive sleep apnea in setting of encephalocele |
| <p>Assessment Models or Tools</p> | <ul style="list-style-type: none"> ● Case-based discussion ● Direct observation ● Medical record (chart) review ● Multisource feedback ● Presentation ● Reflection ● Simulation ● Standardized oral examination |
| <p>Curriculum Mapping</p> | <ul style="list-style-type: none"> ● |
| <p>Notes or Resources</p> | <ul style="list-style-type: none"> ● Allori AC, Kelley T, Meara JG, et al. A Standard Set of Outcome Measures for the Comprehensive Appraisal of Cleft Care. <i>The Cleft Palate-Craniofacial Journal</i>. 2017;54(5):540-554. doi:10.1597/15-292 |

| Medical Knowledge 1: Head and Neck Developmental Anatomy and Embryology Overall Intent: To demonstrate and apply knowledge of the treatment of congenital anomalies | |
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| Milestones | Examples |
| Level 1 <i>Demonstrates knowledge of normal growth and developmental milestones</i> <i>Describes normal embryologic development of face and neck</i> | <ul style="list-style-type: none"> ● Describes speech developmental milestones ● Describes the branchial apparatus and normal structures derived from the branchial arches, clefts, and pouches |
| Level 2 <i>Recognizes atypical growth or development</i> <i>Diagnoses common patterns of abnormal embryology and resultant diseases</i> | <ul style="list-style-type: none"> ● Identifies patients with speech delay ● Correctly diagnoses second branchial cleft cyst, and describes natural history and common presentation of this cyst |
| Level 3 <i>Describes treatment for otolaryngological disease impacting growth or development</i> <i>Describes detailed embryology of all head and neck structures</i> | <ul style="list-style-type: none"> ● Describes the impact and pathophysiology of treating Eustachian tube dysfunction on speech delay ● Describes in detail the development of inner ear structures, larynx, or paranasal sinuses |
| Level 4 <i>Incorporates growth and development outcomes into complex treatment plans</i> <i>Applies knowledge of congenital anomalies to treatment planning</i> | <ul style="list-style-type: none"> ● Assesses speech development of patients with craniofacial conditions ● Describes embryologic pathway of congenital nasal dermoids, encephaloceles, and gliomas and can describe surgical management options |
| Level 5 <i>Serves as a peer resource for growth and developmental outcomes</i> <i>Participates in multidisciplinary treatment planning for fetal anomalies</i> | <ul style="list-style-type: none"> ● Gives grand rounds on the diagnosis and treatment of a recurrent saccular cyst in a three-month-old ● Participates in multidisciplinary conference for management of fetuses with congenital high airway obstruction syndrome |
| Assessment Models or Tools | <ul style="list-style-type: none"> ● Case-based discussion ● Direct observation ● Medical record (chart) review ● Multisource feedback ● Presentation ● Reflection ● Standardized oral examination |

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| Curriculum Mapping | • |
| Notes or Resources | <ul style="list-style-type: none">• American Academy of Otolaryngology. OTOSource. https://www.otosource.org/. Accessed 2021.• Hills SE, Maddalozzo J. Congenital lesions of epithelial origin. <i>Otolaryngol Clin North Am.</i> 2015;48(1):209-23.• Netter FH. <i>Atlas of Human Anatomy.</i> 7th Edition. Philadelphia, PA: Elsevier; 2018. ISBN:978-0323393225• Posser JD, Myer CM. Branchial cleft anomalies and thymic cysts. <i>Otolaryngol Clin North Am.</i>2015;48(1): 1-14. |

| Medical Knowledge 2: Syndromes and Complex Comorbidities Impacting Otolaryngologic Care, including Genetics Overall Intent: To demonstrate and apply knowledge of craniofacial syndromes and conditions and their comorbidities | |
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| Milestones | Examples |
| Level 1 <i>Recognizes features of common craniofacial syndromes</i> <i>Identifies comorbid conditions that impact management</i> | <ul style="list-style-type: none"> ● Recognizes and describes the facial features of a child with Trisomy 21 ● Identifies potential comorbidities, such as congenital heart disease and cervical spine instability, in a child with Trisomy 21 |
| Level 2 <i>Discusses developmental implications of common craniofacial syndromes</i> <i>Discusses implications of comorbidities on management</i> | <ul style="list-style-type: none"> ● Describes the type of hearing loss in patients with 22q11.2 deletion syndrome ● Describes risk of velopharyngeal insufficiency after adenoidectomy in a patient with 22q11.2 deletion syndrome |
| Level 3 <i>Recognizes less-common features and nuances of craniofacial syndromes</i> <i>Develops comprehensive knowledge of complex comorbidities</i> | <ul style="list-style-type: none"> ● Describes the spectrum of features in patients with 22q11.2 deletion syndrome ● Discusses the complex airway lesions in patients with Aperts syndrome |
| Level 4 <i>Diagnoses craniofacial syndromes and conditions</i> <i>Applies knowledge of complex comorbidities to treatment planning</i> | <ul style="list-style-type: none"> ● Recommends genetic testing for a patient with features of CHARGE* syndrome ● Works with hematology to develop a peri-operative plan to manage bleeding in a patient with von Willebrand’s disease |
| Level 5 <i>Recognizes uncommon or newly defined syndromes</i> <i>Develops recommendations or guidelines for management of patients with complex comorbidities</i> | <ul style="list-style-type: none"> ● Recognizes features of auriculocondylar syndrome ● Works with the multidisciplinary team to develop hospital protocols for airway management of patients with bleeding disorders |
| Assessment Models or Tools | <ul style="list-style-type: none"> ● Case-based discussion ● Direct observation ● Medical record (chart) review ● Multisource feedback ● Presentation ● Reflection ● Standardized oral examination |

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| Curriculum Mapping | • |
| Notes or Resources | <ul style="list-style-type: none"> • Bassett EC, Musso MF, Otolaryngologic management of Down syndrome patients: what is new? <i>Curr Opin Otolaryngol Head Neck Surg.</i> 2017 Dec;25(6):493-497. https://pubmed.ncbi.nlm.nih.gov/28915135/ • Weyand AC, Flood VH. Von Willebrand Disease: Current status of diagnosis and management. <i>Hematol Oncol Clin North Am.</i> 2021 Dec;35(6):1085-1101. doi: 10.1016/j.hoc.2021.07.004. Epub 2021 Aug 13. https://pubmed.ncbi.nlm.nih.gov/34400042/ • CHARGE is an abbreviation for several of the features common in the disorder: coloboma, heart defects, atresia choanae (also known as choanal atresia), growth retardation, genital abnormalities, and ear abnormalities. |

| Systems-Based Practice 1: Patient Safety and Quality Improvement | |
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| Overall Intent: To engage in the analysis and management of patient safety events, including relevant communication with patients, families, and health care professionals; to conduct a quality improvement project | |
| Milestones | Examples |
| <p>Level 1 <i>Demonstrates knowledge of common patient safety events</i></p> <p><i>Demonstrates knowledge of how to report patient safety events</i></p> <p><i>Demonstrates knowledge of basic quality improvement methodologies and metrics</i></p> | <ul style="list-style-type: none"> ● Lists patient misidentification or medication errors as common patient safety events ● Describes how to report errors in your environment ● Describes a debriefing protocol |
| <p>Level 2 <i>Identifies system factors that lead to patient safety events</i></p> <p><i>Reports patient safety events through institutional reporting systems (simulated or actual)</i></p> <p><i>Describes local quality improvement initiatives</i></p> | <ul style="list-style-type: none"> ● Identifies growth and measurement tools for pediatric dosing safety ● Reports lack of updated height and weight for pediatric dosing ● Summarizes protocols with appropriate size and dosing charts |
| <p>Level 3 <i>Participates in analysis of patient safety events (simulated or actual)</i></p> <p><i>Participates in disclosure of patient safety events to patients and patients' families (simulated or actual)</i></p> <p><i>Participates in local quality improvement initiatives</i></p> | <ul style="list-style-type: none"> ● Participates in morbidity and mortality conference ● Participates in a family discussion regarding a patient safety event ● Participates in project identifying obstacles to discharging complex patients |
| <p>Level 4 <i>Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)</i></p> <p><i>Discloses patient safety events to patients and patients' families (simulated or actual)</i></p> | <ul style="list-style-type: none"> ● Collaborates with a team to conduct the analysis of medication administration errors and can effectively communicate with patients/families about those events |

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| <p><i>Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project</i></p> | <ul style="list-style-type: none"> ● Participates in the completion of a quality improvement project to improve childhood vaccination rates with regards to cochlear implantation within the practice, including assessing the problem, articulating a broad goal, developing a SMART (Specific, Measurable, Attainable, Realistic, Time-bound) objective plan, and monitoring progress and challenges |
| <p>Level 5 <i>Actively engages teams and processes to modify systems to prevent patient safety events</i></p> <p><i>Role models or mentors others in the disclosure of patient safety events</i></p> <p><i>Creates, implements, and assesses quality improvement initiatives at the institutional or community level</i></p> | <ul style="list-style-type: none"> ● Assumes a leadership role at the departmental or institutional level for a patient safety event ● Conducts a simulation for disclosing patient safety events ● Initiates and completes a quality improvement project to improve county childhood vaccination rates regarding cochlear implantation in collaboration with the county health department and shares results with stakeholders |
| <p>Assessment Models or Tools</p> | <ul style="list-style-type: none"> ● Direct observation ● E-module multiple choice tests ● Medical record (chart) audit ● Multisource feedback ● Portfolio ● Reflection ● Simulation |
| <p>Curriculum Mapping</p> | <ul style="list-style-type: none"> ● |
| <p>Notes or Resources</p> | <ul style="list-style-type: none"> ● Institute of Healthcare Improvement. http://www.ihl.org/Pages/default.aspx. Accessed 2021. |

| Systems-Based Practice 2: System Navigation for Patient-Centered Care | |
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| Overall Intent: To effectively navigate the health care system, including the interdisciplinary team and other care providers, to adapt care to a specific patient population to ensure high-quality patient outcomes | |
| Milestones | Examples |
| <p>Level 1 <i>Demonstrates knowledge of care coordination</i></p> <p><i>Identifies key elements for safe and effective transitions of care and hand-offs</i></p> <p><i>Demonstrates knowledge of population and community health needs and inequities</i></p> | <ul style="list-style-type: none"> ● For a patient with tracheostomy, identifies medical home and multi-disciplinary members of the team ● Lists the essential components of a standardized sign-out tool for care transition and hand-offs ● Identifies the different needs of patients living in rural versus urban settings |
| <p>Level 2 <i>Coordinates care of patients in routine clinical situations effectively using the roles of interprofessional team members</i></p> <p><i>Performs safe and effective transitions of care/hand-offs in routine clinical situations</i></p> <p><i>Identifies specific population and community health needs and inequities for the local population</i></p> | <ul style="list-style-type: none"> ● Coordinates care with pulmonary and/or aerodigestive team at the time of discharge from the hospital ● Routinely uses a standardized sign-out tool for a stable patient during night float sign-out ● Identifies that limited home health options may be a factor in rural patients |
| <p>Level 3 <i>Coordinates care of patients in complex clinical situations effectively using the roles of interprofessional team members</i></p> <p><i>Performs safe and effective transitions of care/hand-offs in complex clinical situations</i></p> <p><i>Uses local resources effectively to meet the needs of a patient population and community</i></p> | <ul style="list-style-type: none"> ● Works with the social worker to coordinate care for a patient in foster care that will ensure follow-up after discharge from the hospital ● Routinely uses a standardized sign-out tool when transferring a patient to the intensive care unit (ICU) ● Refers patients to local early intervention services for patients in need |
| <p>Level 4 <i>Role models effective coordination of patient-centered care among different disciplines and specialties</i></p> <p><i>Role models and advocates for safe and effective transitions of care/hand-offs within and</i></p> | <ul style="list-style-type: none"> ● During inpatient rounds, leads team members in managing consultations ● Prior to going on vacation, proactively informs the covering resident about a plan of care for a post-operative slide tracheoplasty patient |

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| <p><i>across health care delivery systems, including outpatient settings</i></p> <p><i>Participates in changing and adapting practice to provide for the needs of specific populations</i></p> | <ul style="list-style-type: none"> ● Assists in the design of post-operative pain management protocols for patients to reduce variations in opioid prescribing habits |
| <p>Level 5 <i>Analyzes the process of care coordination and leads in the design and implementation of improvements</i></p> <p><i>Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes</i></p> <p><i>Leads innovations and advocates for populations and communities with health care inequities</i></p> | <ul style="list-style-type: none"> ● Leads a program to create standardized tracheostomy teaching for family members of pediatric airway patients ● Develops a protocol to improve transitions to home health teams ● Identifies and advocates for patients who need telehealth services |
| <p>Assessment Models or Tools</p> | <ul style="list-style-type: none"> ● Direct observation ● Medical record (chart) audit ● Multisource feedback ● Quality metrics and goals mined from electronic health records (EHR) ● Review of sign-out tools, use and review of checklists |
| <p>Curriculum Mapping</p> | <ul style="list-style-type: none"> ● |
| <p>Notes or Resources</p> | <ul style="list-style-type: none"> ● Center for Disease Control and Prevention (CDC). Population Health Training. https://www.cdc.gov/pophealthtraining/whatis.html. Accessed 2021. ● Skochelak SE, Hawkins RE, Lawson LE, Starr SR, Borkan J, Gonzalo JD. <i>Health Systems Science</i>. 1st ed. Philadelphia, PA: Elsevier; 2016. ISBN:9780702070372. |

| Systems-Based Practice 3: Physician Role in Health Care Systems | |
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| Overall Intent: To understand the physician’s role in the complex health care system and how to optimize the system to improve patient care and the health system’s performance | |
| Milestones | Examples |
| <p>Level 1 <i>Identifies key components of the complex health care system (e.g., hospital, skilled nursing facility, finance, personnel, technology)</i></p> <p><i>Describes basic health payment systems, including government, private, public, uninsured care, and practice models</i></p> <p><i>Identifies basic knowledge domains for effective transition to practice (e.g., information technology, legal, billing and coding, financial, personnel)</i></p> | <ul style="list-style-type: none"> ● Articulates differences between skills needed for home tracheostomy care by parents or home health care providers ● Understands the impact of health plan coverage on prescription drugs for individual patients ● Identifies coding requirements for consult notes |
| <p>Level 2 <i>Describes how components of a complex health care system are interrelated, and how they impact patient care</i></p> <p><i>Delivers care with consideration of each patient’s payment model (e.g., insurance type)</i></p> <p><i>Describes core administrative knowledge needed for transition to practice (e.g., contract negotiations, malpractice insurance, government regulation, compliance)</i></p> | <ul style="list-style-type: none"> ● Explains improving patient/family satisfaction impacts patient compliance ● Takes into consideration patient’s prescription drug coverage when choosing ototopical regimen for treatment of tube otorrhea ● Recognizes that appropriate documentation can influence the severity of illness determination upon discharge |
| <p>Level 3 <i>Discusses how individual practice affects the broader system (e.g., length of stay, readmission rates, clinical efficiency)</i></p> <p><i>Engages with patients in shared decision-making, informed by each patient’s payment models</i></p> | <ul style="list-style-type: none"> ● Ensures that patient comorbidities are addressed at time of discharge to reduce readmission rate ● Discusses risks and benefits of repeat surveillance swallow studies for aspiration |

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| <p><i>Demonstrates use of information technology required for medical practice (e.g., electronic health record, documentation required for billing and coding)</i></p> | <ul style="list-style-type: none"> ● Understands the core elements of insurance deductibles |
| <p>Level 4 <i>Manages various components of the complex health care system to provide efficient and effective patient care and transitions of care</i></p> <p><i>Advocates for patient care needs (e.g., community resources, patient assistance resources) with consideration of the limitations of each patient’s payment model</i></p> <p><i>Analyzes individual practice patterns and professional requirements in preparation for practice</i></p> | <ul style="list-style-type: none"> ● Ensures proper documentation for observation versus inpatient admission ● Works collaboratively to improve patient assistance resources for a patient with tracheostomy and limited resources ● Proactively compiles procedure log in anticipation of applying for hospital privileges |
| <p>Level 5 <i>Advocates for or leads systems change that enhances high-value, efficient, and effective patient care and transitions of care</i></p> <p><i>Participates in health policy advocacy activities</i></p> <p><i>Educates others to prepare them for transition to practice</i></p> | <ul style="list-style-type: none"> ● Works with community or professional organizations to advocate for better individual education plan/program (IEP) or 504 plan/program services in schools ● Improves informed consent process for non-English-speaking patients requiring interpreter services ● Coordinates a discussion for peers about transition to practice ● Guides residents on board certification preparation |
| <p>Assessment Models or Tools</p> | <ul style="list-style-type: none"> ● Direct observation ● Medical record (chart) audit ● Patient satisfaction data ● Portfolio |
| <p>Curriculum Mapping</p> | <ul style="list-style-type: none"> ● |
| <p>Notes or Resources</p> | <ul style="list-style-type: none"> ● Agency for Healthcare Research and Quality (AHRQ). Measuring the Quality of Physician Care. https://www.ahrq.gov/professionals/quality-patient-safety/talkingquality/create/physician/challenges.html. Accessed 2021. ● AHRQ. Major Physician Measurement Sets: https://www.ahrq.gov/professionals/quality-patient-safety/talkingquality/create/physician/measurementsets.html. Accessed 2021. ● The Commonwealth Fund. Health System Data Center. https://datacenter.commonwealthfund.org/#ind=1/sc=1. Accessed 2021. |

- Dzau VJ, McClellan M, Burke S, et al. Vital directions for health and health care: priorities from a national academy of medicine initiative. *JAMA*. 2017;317(14):1461-1470. <https://nam.edu/vital-directions-for-health-health-care-priorities-from-a-national-academy-of-medicine-initiative/>.
- The Kaiser Family Foundation. www.kff.org. Accessed 2021.
- The Kaiser Family Foundation. Topic: health reform. <https://www.kff.org/topic/health-reform/>. Accessed 2021.

| Practice-Based Learning and Improvement 1: Evidence-Based and Informed Practice Overall Intent: To incorporate evidence and patient values into clinical practice | |
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| Milestones | Examples |
| Level 1 <i>Demonstrates how to access available evidence, and incorporate the patient’s and patient’s family’s preferences and values to the care of a routine patient</i> | <ul style="list-style-type: none"> Identifies evidence-based guidelines for tonsillectomy from American Academy of Otolaryngology – Head and Neck Surgery (AAO-HNSF) |
| Level 2 <i>Articulates clinical questions and elicits the patient’s and patient’s family’s preferences and values to guide evidence-based care</i> | <ul style="list-style-type: none"> In a patient with sleep apnea symptoms, appropriately selects a management plan with input from the child’s guardians |
| Level 3 <i>Locates and applies the best available evidence, integrated with the patient’s and patient’s family’s preference, to the care of complex patients</i> | <ul style="list-style-type: none"> Obtains, discusses, and applies evidence for the treatment of a patient with obstructive sleep apnea (OSA) and complex comorbidities |
| Level 4 <i>Critically appraises and applies evidence, even in the face of uncertainty and conflicting evidence, to guide care to the individual patient</i> | <ul style="list-style-type: none"> Evaluates the primary literature to identify surgical and medical treatments for a child with persistent OSA after tonsillectomy |
| Level 5 <i>Coaches others to critically appraise and apply evidence for complex patients, and/or participates in the development of guidelines</i> | <ul style="list-style-type: none"> Leads clinical teaching on critical appraisal of management options for children with OSA and comorbidities |
| Assessment Models or Tools | <ul style="list-style-type: none"> Direct observation Oral or written examinations Presentation evaluation Research portfolio |
| Curriculum Mapping | <ul style="list-style-type: none"> |
| Notes or Resources | <ul style="list-style-type: none"> Institutional Review Board (IRB) guidelines National Institutes of Health. Write Your Application. https://grants.nih.gov/grants/how-to-apply-application-guide/format-and-write/write-your-application.htm. Accessed 2021. U.S. National Library of Medicine. PubMed Tutorial. https://www.nlm.nih.gov/bsd/disted/pubmedtutorial/cover.html. Accessed 2021. Various journal submission guidelines AAOHNS Clinical Practice Guidelines. https://www.entnet.org/quality-practice/quality-products/clinical-practice-guidelines/ |

| Practice-Based Learning and Improvement 2: Reflective Practice and Commitment to Personal Growth Overall Intent: To seek clinical performance information with the intent to improve care; reflects on all domains of practice, personal interactions, and behaviors, and their impact on colleagues and patients (reflective mindfulness); develop clear objectives and goals for improvement in some form of a learning plan | |
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| Milestones | Examples |
| Level 1 <i>Accepts responsibility for personal and professional development by establishing goals</i> <i>Identifies the factors that contribute to gap(s) between expectations and actual performance</i> | <ul style="list-style-type: none"> ● Sets a personal goal of comprehensively managing post-operative course after airway reconstruction ● Identifies the need to seek evidence about complications of airway reconstruction |
| Level 2 <i>Demonstrates openness to performance data (feedback and other input) to inform goals</i> <i>Analyzes and reflects on the factors that contribute to gap(s) between expectations and actual performance</i> | <ul style="list-style-type: none"> ● Integrates feedback about communication skills and how they impact ICU team interactions and patient care ● Evaluates published literature to identify best practices in airway reconstruction management |
| Level 3 <i>Seeks performance data episodically, with adaptability</i> <i>Analyzes, reflects on, and institutes behavioral change(s) to narrow the gap(s) between expectations and actual performance</i> | <ul style="list-style-type: none"> ● Reviews charts of patients who underwent airway reconstruction to evaluate the consistency and quality of care provided ● Develops reliable methods to communicate care decisions with patient, family, ICU team, and otolaryngology teams to optimize post-operative care for complex patients |
| Level 4 <i>Intentionally seeks performance data consistently, with adaptability</i> <i>Challenges assumptions and considers alternatives in narrowing the gap(s) between expectations and actual performance</i> | <ul style="list-style-type: none"> ● Participates in quality improvement projects to periodically evaluate the quality of care in patients who underwent airway reconstruction ● Debriefs with the attending and other patient care team members to optimize future collaboration in the care of the patient and family |
| Level 5 <i>Role models consistently seeking performance data with adaptability</i> <i>Coaches others on reflective practice</i> | <ul style="list-style-type: none"> ● Models practice improvement and adaptability ● Discusses new evidence from recent publication or conference and works with the team to improve practice |
| Assessment Models or Tools | <ul style="list-style-type: none"> ● Direct observation ● Multisource feedback ● Presentation feedback ● Review of learning plan |

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| Curriculum Mapping | • |
| Notes or Resources | <ul style="list-style-type: none"> • Burke AE, Benson B, Englander R, Carraccio C, Hicks PJ. Domain of competence: Practice-based learning and improvement. <i>Acad Pediatr.</i> 2014;14:S38-S54. https://linkinghub.elsevier.com/retrieve/pii/S1876-2859(13)00333-1. • Hojat M, Veloski JJ, Gonnella JS. Measurement and correlates of physicians' lifelong learning. <i>Academic Medicine.</i> 2009;84(8):1066-1074. https://journals.lww.com/academicmedicine/fulltext/2009/08000/Measurement_and_Correlates_of_Physicians_Lifelong.21.aspx. • Lockspeiser TM, Schmitter PA, Lane JL, Hanson JL, Rosenberg AA, Park YS. Assessing residents' written learning goals and goal writing skill: validity evidence for the learning goal scoring rubric. <i>Academic Medicine.</i> 2013;88(10):1558-1563. https://journals.lww.com/academicmedicine/fulltext/2013/10000/Assessing_Residents_Written_Learning_Goals_and.39.aspx. |

| Professionalism 1: Professional Behavior and Ethical Principles Overall Intent: To recognize and address lapses in ethical and professional behavior, demonstrates ethical and professional behaviors, and use appropriate resources for managing ethical and professional dilemmas | |
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| Milestones | Examples |
| <p>Level 1 <i>Identifies and describes potential triggers for professionalism lapses</i></p> <p><i>Demonstrates knowledge of the ethical principles underlying patient care, including informed consent, surrogate decision making, advance directives, confidentiality, error disclosure, stewardship of limited resources, and related topics</i></p> | <ul style="list-style-type: none"> ● Identifies fatigue as a potential cause for a lapse in professionalism ● Articulates how the principle of “do no harm” applies to a patient who may not need a procedure even though the training opportunity exists |
| <p>Level 2 <i>Demonstrates insight into professional behavior in routine situations and how to appropriately report professionalism lapses</i></p> <p><i>Analyzes straightforward situations using ethical principles</i></p> | <ul style="list-style-type: none"> ● Communicates directly and respectfully with a team member who is late to rounds/sign-out about the importance of being on time ● Identifies and applies ethical principles involved in informed consent when the resident is unclear of all the risks |
| <p>Level 3 <i>Demonstrates professional behavior in complex or stressful situations</i></p> <p><i>Analyzes complex situations using ethical principles and recognizes the need to seek help in managing and resolving complex ethical situations</i></p> | <ul style="list-style-type: none"> ● Appropriately responds to a distraught family member following a complication of medical or surgical care ● Explores goals of care for a medically complex patient with patients and their family members and colleagues, while recognizing own limitations, and consistently honoring the patient/family’s choice and considers talking with the ethics team |
| <p>Level 4 <i>Recognizes situations that may trigger professionalism lapses and intervenes to prevent lapses in oneself and others</i></p> <p><i>Recognizes and uses appropriate resources for managing and resolving ethical dilemmas as needed</i></p> | <ul style="list-style-type: none"> ● Models respect for patients and promotes the same from colleagues when a patient/family is angry after waiting an excessively long time to be seen ● Recognizes and uses ethics consults, literature, risk-management/legal counsel to resolve ethical dilemmas |
| <p>Level 5 <i>Coaches others when their behavior fails to meet professional expectations</i></p> | <ul style="list-style-type: none"> ● Assists others in creating a performance improvement plan to prevent recurrence of patterns of unprofessional behavior |

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| <p><i>Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution</i></p> | <ul style="list-style-type: none"> ● Engages stakeholders to address excessive wait times in the clinic to decrease patient and provider frustrations that lead to unprofessional behavior |
| <p>Assessment Models or Tools</p> | <ul style="list-style-type: none"> ● Direct observation ● Global evaluation ● Multisource feedback ● Oral or written self-reflection ● Simulation |
| <p>Curriculum Mapping</p> | <ul style="list-style-type: none"> ● |
| <p>Notes or Resources</p> | <ul style="list-style-type: none"> ● American Board of Internal Medicine (ABIM). ABIM Foundation. Medical professionalism in the new millennium: a physician charter. <i>Annals of Internal Medicine</i>. 2002;136(3):243-246. https://annals.org/aim/fullarticle/474090/medical-professionalism-new-millennium-physician-charter. Accessed 2021. ● American Medical Association. Ethics. https://www.ama-assn.org/delivering-care/ama-code-medical-ethics. Accessed 2021. ● Bynny RL, Paauw DS, Papadakis MA, Pfeil S, Alpha Omega Alpha. <i>Medical Professionalism Best Practices: Professionalism in the Modern Era</i>. Menlo Park, CA: Alpha Omega Alpha Honor Society; 2017. https://alphaomegaaalpha.org/pdfs/Monograph2018.pdf. ● Levinson W, Ginsburg S, Hafferty FW, Lucey CR. <i>Understanding Medical Professionalism</i>. 1st ed. New York, NY: McGraw-Hill Education; 2014. https://accessmedicine.mhmedical.com/book.aspx?bookID=1058. |

| Professionalism 2: Accountability/Conscientiousness | |
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| Overall Intent: To take responsibility for one’s own actions and the impact on patients and other members of the health care team | |
| Milestones | Examples |
| <p>Level 1 <i>Takes responsibility for failure to complete tasks and responsibilities, identifies potential contributing factors, and describes strategies for ensuring timely task completion in the future</i></p> <p><i>Responds promptly to requests or reminders to complete tasks and responsibilities</i></p> | <ul style="list-style-type: none"> ● Describes plan to complete delinquent case logs ● Responds promptly to reminders from program administrator to complete work hour logs |
| <p>Level 2 <i>Performs tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations</i></p> <p><i>Recognizes situations that may impact one’s own ability to complete tasks and responsibilities in a timely manner</i></p> | <ul style="list-style-type: none"> ● Completes administrative tasks, documents safety modules, procedure review, and licensing requirements by specified due date ● Before going out of town, completes tasks in anticipation of lack of computer access while traveling |
| <p>Level 3 <i>Performs tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations</i></p> <p><i>Proactively implements strategies to ensure that the needs of patients, teams, and systems are met</i></p> | <ul style="list-style-type: none"> ● Effectively manages multiple competing demands on call, appropriately triages tasks, and asks for assistance from other residents, fellows, or faculty members as needed ● Considers other team member’s absence when scheduling vacation or other time away |
| <p>Level 4 <i>Recognizes situations that may impact others’ ability to complete tasks and responsibilities in a timely manner</i></p> | <ul style="list-style-type: none"> ● Takes responsibility for omitting key patient information during sign-out |
| <p>Level 5 <i>Leads system change</i></p> | <ul style="list-style-type: none"> ● Leads a team to develop a standardized discharge protocol to optimize discharges |
| <p>Assessment Models or Tools</p> | <ul style="list-style-type: none"> ● Compliance with deadlines and timelines ● Direct observation ● Global evaluations ● Multisource feedback ● Self-evaluations and reflective tools ● Simulation |
| <p>Curriculum Mapping</p> | <ul style="list-style-type: none"> ● |
| <p>Notes or Resources</p> | <ul style="list-style-type: none"> ● Code of conduct from fellow/resident institutional manual ● Expectations of residency program regarding accountability and professionalism |

| Professionalism 3: Knowledge of Systemic and Individual Factors of Well-Being Overall Intent: To identify, use, manage, improve, or seek help for personal and professional growth within self and others | |
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| Milestones | Examples |
| Level 1 <i>Recognizes the importance of getting help when needed to address personal and professional well-being</i> | <ul style="list-style-type: none"> ● After concerns are expressed by a program leader regarding well-being or burnout, is receptive to considering options for assistance |
| Level 2 <i>Lists resources to support personal and professional well-being</i> <i>Recognizes institutional factors that affect well-being</i> | <ul style="list-style-type: none"> ● In annual advisor meeting, discusses institutional resources that support personal and professional well-being ● Identifies aspects of the clinical learning environment that seem to impact personal well-being, including absence of sleeping area for nights when it's unsafe to drive home |
| Level 3 <i>With prompting, reflects on how personal and professional well-being may impact one's clinical practice</i> <i>Describes institutional factors that affect well-being</i> | <ul style="list-style-type: none"> ● After several months of a challenging schedule, responds to feedback from a nurse by recognizing that a recent patient interaction lacked necessary empathy, and seeks support and advice from the attending physician ● Describes institutional acceptance of mistreatment and microaggressions committed by the interprofessional team and patients as negatively impacting well-being |
| Level 4 <i>Reflects on actions in real time to proactively respond to the inherent emotional challenges of physician work</i> <i>Suggests potential solutions to institutional factors that affect well-being</i> | <ul style="list-style-type: none"> ● Identifies fear of leading airway emergencies as a "stress point" in education and seeks advice from an experienced physician ● Participates in graduate medical education (GME) round table discussion on the experience of microaggressions particularly felt by women and marginalized and/or minoritized learners in medicine and its association with burnout in residency/fellowship and offers constructive feedback on mitigating burnout |
| Level 5 <i>Participates in institutional changes to promote personal and professional well-being</i> | <ul style="list-style-type: none"> ● Advocates with hospital leadership as a Well-Being Committee leader to provide educational interventions and mental health services to address experiences of shame during fellowship and residency education |
| Assessment Models or Tools | <ul style="list-style-type: none"> ● Direct observation ● Group interview or discussions for team activities ● Individual interview ● Institutional online training modules ● Reflective writing ● Self-assessment and personal learning plan ● Semi-annual evaluation |

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| Curriculum Mapping | <ul style="list-style-type: none"> • |
| Notes or Resources | <ul style="list-style-type: none"> • This subcompetency is not intended to evaluate a fellow’s well-being. Rather, the intent is to ensure each fellow has the fundamental knowledge of factors that affect well-being, the mechanism by which those factors affect well-being, and available resources and tools to improve well-being. • ACGME. Tools and Resources. https://dl.acgme.org/pages/well-being-tools-resources. Accessed 2022. • American College of Physicians (ACP). Imposter Syndrome: Break on Through to the Other Side. https://www.acponline.org/about-acp/about-internal-medicine/career-paths/residency-career-counseling/impower/imposter-syndrome-break-on-through-to-the-other-side. Accessed 2021. (Need Login) • ACP. Know Your Colleagues, Know Yourself: Checking in on Mental Health. https://www.acponline.org/about-acp/about-internal-medicine/career-paths/residency-career-counseling/impower/know-your-colleagues-know-yourself-checking-in-on-mental-health. Accessed 2021. • ACP. Physician Well-being for Residents and Fellows. https://www.acponline.org/meetings-courses/acp-courses-recordings/acp-leadership-academy/acp-leadership-academy-webinars/physician-well-being-for-residents-and-fellows. Accessed 2021. • ACP. Physician Well-Being and Professional Fulfillment. https://www.acponline.org/practice-resources/physician-well-being-and-professional-fulfillment. Accessed 2021. • Bynum WE 4th, Artino AR Jr, Uijtdehaage S, Webb AMB, Varpio L. Sentinel emotional events: The nature, triggers, and effects of shame experiences in medical residents. <i>Acad Med</i>. 2019;94(1):85-93. https://journals.lww.com/academicmedicine/fulltext/2019/01000/sentinel_emotional_events_the_nature_triggers_28.aspx. • Cook AF, Arora VM, Rasinski KA, Curlin FA, Yoon JD. The prevalence of medical student mistreatment and its association with burnout. <i>Acad Med</i>. 2014;89(5):749-754. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4401419/pdf/nihms-650423.pdf. • Hicks PJ, Schumacher D, Guralnick S, Carraccio C, Burke AE. Domain of competence: personal and professional development. <i>Acad Pediatr</i>. 2014;14(2 Suppl):S80-97. https://www.sciencedirect.com/science/article/abs/pii/S187628591300332X. • Hu YY, Ellis RJ, Hewitt DB, et al. Discrimination, abuse, harassment, and burnout in surgical residency training. <i>N Engl J Med</i>. 2019;381(18):1741-1752. https://www.nejm.org/doi/full/10.1056/NEJMsa1903759. |

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- Journal of Graduate Medical Education. Hot Topics: Resident Well-Being. https://jgme.org/page/hottopics/resident_well_being. Accessed 2021.
- Local resources, including employee assistance programs (EAPs)
- Thomas LR, Ripp JA, West CP. Charter on physician well-being. *JAMA*. 2018;319(15):1541-1542. <https://jamanetwork.com/journals/jama/article-abstract/2677478>.

| <p align="center">Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication</p> <p>Overall Intent: To use language and behaviors deliberately to form constructive relationships with patients and families, to identify communication barriers including self-reflection on personal biases, and minimize them in the doctor-patient relationships; organize and lead communication around shared decision making</p> | |
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| Milestones | Examples |
| <p>Level 1 <i>Uses language and non-verbal behavior to demonstrate respect and establish rapport</i></p> <p><i>Identifies common barriers to effective communication (e.g., language, disability) while accurately communicating one’s own role within the health care system</i></p> <p><i>Identifies the need to adjust communication strategies based on assessment of a patient’s/patient’s family’s expectations and understanding of their health status and treatment options</i></p> | <ul style="list-style-type: none"> ● Introduces self and faculty member, identifies patient and others in the room, and engages all parties in health care discussion ● Identifies need for trained interpreter with non-English-speaking patients and families ● Uses age-appropriate language when discussing procedures/surgery with pediatric patients |
| <p>Level 2 <i>Establishes a therapeutic relationship in straightforward encounters using active listening and clear language</i></p> <p><i>Identifies complex barriers to effective communication (e.g., health literacy, cultural differences)</i></p> <p><i>Organizes and initiates communication with a patient/patient’s family by introducing stakeholders, setting the agenda, clarifying expectations, and verifying understanding of the clinical situation</i></p> | <ul style="list-style-type: none"> ● Avoids medical jargon and restates patient and family perspective when discussing therapeutic options ● Recognizes the need for handouts with diagrams and pictures to communicate information to a patient who is unable to read ● Reviews and verifies the patient’s and patient family members’ understanding of the diagnosis and treatment plan |
| <p>Level 3 <i>Establishes a therapeutic relationship in challenging patient encounters</i></p> <p><i>When prompted, reflects on personal biases while attempting to minimize communication barriers</i></p> | <ul style="list-style-type: none"> ● Acknowledges parent’s request to remove tonsils without clinical indication, explains why the surgery is not indicated, and develops a follow-up plan of care ● In a discussion with the faculty member, acknowledges discomfort in caring for a child with chronic ear fluid with parents who continue to smoke around the child |

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| <p><i>With guidance, sensitively and compassionately delivers medical information; elicits a patient's/patient's family's values, goals, and preferences; and acknowledges uncertainty and conflict</i></p> | <ul style="list-style-type: none"> ● Organizes a family meeting to determine a plan for care of a medically complex child with multiple other services (tracheostomy tube placement, airway management, etc.) |
| <p>Level 4 <i>Easily establishes therapeutic relationships, with attention to a patient's/patient's family's concerns and context, regardless of complexity</i></p> <p><i>Independently recognizes personal biases while attempting to proactively minimize communication barriers</i></p> <p><i>Independently, uses shared decision making to align the patient's/patient's family's values, goals, and preferences with treatment options to make a personalized care plan</i></p> | <ul style="list-style-type: none"> ● Continues to engage representative family members with disparate goals in the care of a patient who may require surgery due to severe obstructive sleep apnea ● Recognizes and manages personal bias when treating a patient with post-meningitic hearing loss and is unvaccinated, and professionally discusses the patient's care with the parents ● Uses patient and family input and values to engage pastoral care and develop a plan for palliative care in a medically complex child |
| <p>Level 5 <i>Mentors others in situational awareness and critical self-reflection to consistently develop positive therapeutic relationships</i></p> <p><i>Role models self-awareness while identifying a contextual approach to minimize communication barriers</i></p> <p><i>Role models shared decision making in communication with patients/patients' families, including those situations with a high degree of uncertainty/conflict</i></p> | <ul style="list-style-type: none"> ● Leads a discussion group on personal experience of moral distress ● Develops a residency/fellowship curriculum on social justice that addresses unconscious bias ● Serves on a hospital bioethics committee |
| <p>Assessment Models or Tools</p> | <ul style="list-style-type: none"> ● Direct observation ● Kalamazoo Essential Elements Communication Checklist (Adapted) ● Self-assessment including self-reflection exercises ● Skills needed to Set the state, Elicit information, Give information, Understand the patient, and End the encounter (SEGUE) ● Standardized patients |
| <p>Curriculum Mapping</p> | <ul style="list-style-type: none"> ● |

Notes or Resources

- Laidlaw A, Hart J. Communication skills: an essential component of medical curricula. Part I: Assessment of clinical communication: AMEE Guide No. 51. *Med Teach*. 2011;33(1):6-8.
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https://www.researchgate.net/publication/11748796_The_SEGUE_Framework_for_teaching_and_assessing_communication_skills.
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| Interpersonal and Communication Skills 2: Interprofessional and Team Communication Overall Intent: To communicate effectively with the health care team, including consultants, in both straightforward and complex situations | |
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| Milestones | Examples |
| <p>Level 1 <i>Respectfully requests/receives a consultation</i></p> <p><i>Uses language that values all members of the health care team</i></p> | <ul style="list-style-type: none"> ● Receives consult request for a patient with Down syndrome and snoring, asks clarifying questions politely, and expresses gratitude for the consult ● Acknowledges the contribution of each member of the ICU team to the patient |
| <p>Level 2 <i>Clearly and concisely requests/responds to a request for consultation</i></p> <p><i>Communicates information effectively with all health care team members</i></p> <p><i>Respectfully receives feedback on performance as a member of the health care team</i></p> | <ul style="list-style-type: none"> ● Communicates diagnostic evaluation recommendations clearly and concisely in an organized and timely manner ● Performs debrief in the post-anesthesia care unit (PACU) ● Makes improvements in peri-operative management based on feedback from the PACU team |
| <p>Level 3 <i>Receives follow-up and feedback on the outcome of the consultation</i></p> <p><i>Uses active listening to adapt communication style to fit team needs</i></p> <p><i>Solicits feedback on performance as a member of the health care team</i></p> | <ul style="list-style-type: none"> ● Asks if the consult addressed the needs of the primary team ● When receiving treatment recommendations from a consulting team, repeats back the plan to ensure understanding ● Asks for feedback from operating room nurses or anesthesiologists on communication in the operating room |
| <p>Level 4 <i>Coordinates recommendations from different members of the health care team to optimize patient care</i></p> <p><i>Communicates feedback and constructive criticism to superiors</i></p> <p><i>Communicates concerns and provides feedback to peers and learners</i></p> | <ul style="list-style-type: none"> ● Initiates a multidisciplinary meeting to develop a shared care plan for a child who may need a tracheostomy ● States that family members were hoping to meet with attending surgeon after the surgery ended ● Asks other members of the health care team to repeat back recommendations to ensure understanding |
| <p>Level 5 <i>Role models flexible communication strategies that value input from all health care team members, resolving conflict when needed</i></p> | <ul style="list-style-type: none"> ● Mediates a conflict resolution between different members of the health care team |

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| <p><i>Facilitates health care team-based feedback in complex situations</i></p> <p><i>Facilitates teaching of team-based communication and feedback</i></p> | <ul style="list-style-type: none"> ● Runs debrief after performance of emergency tracheotomy in a code |
| <p>Assessment Models or Tools</p> | <ul style="list-style-type: none"> ● Direct observation ● Global assessment ● Medical record (chart) audit ● Multisource feedback ● Simulation |
| <p>Curriculum Mapping</p> | <ul style="list-style-type: none"> ● |
| <p>Notes or Resources</p> | <ul style="list-style-type: none"> ● Braddock CH, Edwards KA, Hasenberg NM, Laidley TL, Levinson W. Informed decision making in outpatient practice: time to get back to basics. <i>JAMA</i> 1999;282(24):2313-2320. https://jamanetwork.com/journals/jama/fullarticle/192233. ● Dehon E, Simpson K, Fowler D, Jones A. Development of the faculty 360. <i>MedEdPORTAL</i>. 2015;11:10174. https://www.mededportal.org/doi/10.15766/mep_2374-8265.10174. ● Fay D, Mazzone M, Douglas L, Ambuel B. A validated, behavior-based evaluation instrument for family medicine residents. <i>MedEdPORTAL</i>. 2007. https://www.mededportal.org/doi/10.15766/mep_2374-8265.622. ● François, J. Tool to assess the quality of consultation and referral request letters in family medicine. <i>Can Fam Physician</i>. 2011;57(5):574-575. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3093595/pdf/0570574.pdf. ● Green M, Parrott T, Cook G. Improving your communication skills. <i>BMJ</i>. 2012;344:e357. https://www.bmj.com/content/344/bmj.e357. ● Henry SG, Holmboe ES, Frankel RM. Evidence-based competencies for improving communication skills in graduate medical education: a review with suggestions for implementation. <i>Med Teach</i>. 2013;35(5):395-403. https://www.tandfonline.com/doi/full/10.3109/0142159X.2013.769677. ● Lane JL, Gottlieb RP. Structured clinical observations: a method to teach clinical skills with limited time and financial resources. <i>Pediatrics</i>.2000;105:973-7. https://pediatrics.aappublications.org/content/pediatrics/105/Supplement_3/973.full.pdf. ● Roth CG, Eldin KW, Padmanabhan V, Freidman EM. Twelve tips for the introduction of emotional intelligence in medical education. <i>Med Teach</i>. 2018:1-4. https://www.tandfonline.com/doi/full/10.1080/0142159X.2018.1481499. |

| Interpersonal and Communication Skills 3: Communication within Health Care Systems Overall Intent: To communicate effectively using a variety of methods | |
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| Milestones | Examples |
| Level 1 <i>Accurately records information in the patient record</i> <i>Safeguards patients' personal health information</i> | <ul style="list-style-type: none"> ● Documentation of guardian is accurate ● Shreds patient list after rounds; avoids talking about patients in the elevator |
| Level 2 <i>Demonstrates organized diagnostic and therapeutic reasoning through notes in the patient record</i> <i>Documents required data in formats specified by institutional policy</i> | <ul style="list-style-type: none"> ● Creates organized and accurate documentation outlining clinical reasoning supporting the treatment plan ● Uses approved institutional templates to capture all required data elements |
| Level 3 <i>Concisely reports diagnostic and therapeutic reasoning in the patient record</i> <i>Appropriately selects direct (e.g., telephone, in-person) and indirect (e.g., progress notes, text messages) forms of communication based on context</i> | <ul style="list-style-type: none"> ● Concisely documents complex clinical thinking but may not contain anticipatory guidance at discharge ● Communicates with patient's care team immediately about potentially critical test result |
| Level 4 <i>Communicates clearly, concisely, timely, and in an organized written form, including anticipatory guidance</i> <i>Produces written or verbal communication (e.g., patient notes, email) that serves as an example for others to follow</i> | <ul style="list-style-type: none"> ● Creates consistently accurate, organized, and concise documentation and frequently incorporates anticipatory guidance at discharge ● Speaks directly to referring physicians and ensures recommendations are clear and understood |
| Level 5 <i>Models feedback to improve others' written communication</i> <i>Guides departmental or institutional communication around policies and procedures</i> | <ul style="list-style-type: none"> ● Coaches other learners on written communication ● Leads a task force established by the hospital quality improvement committee to develop a plan to improve house staff hand-offs |
| Assessment Models or Tools | <ul style="list-style-type: none"> ● Direct observation ● Medical record (chart) audit ● Multisource feedback |
| Curriculum Mapping | <ul style="list-style-type: none"> ● |

Notes or Resources

- Bierman JA, Hufmeyer KK, Liss DT, Weaver AC, Heiman HL. Promoting responsible electronic documentation: validity evidence for a checklist to assess progress notes in the electronic health record. *Teach Learn Med.* 2017;29(4):420-432. <https://www.tandfonline.com/doi/full/10.1080/10401334.2017.1303385>.
- Haig KM, Sutton S, Whittington J. SBAR: a shared mental model for improving communication between clinicians. *Jt Comm J Qual Patient Saf.* 2006;32(3):167-175. <https://www.ncbi.nlm.nih.gov/pubmed/16617948>.
- Starmer AJ, Spector ND, Srivastava R, et al. I-PASS, a mnemonic to standardize verbal handoffs. *Pediatrics.* 2012;129(2):201-204. <https://ipassinstitute.com/wp-content/uploads/2016/06/I-PASS-mnemonic.pdf>.

To help programs transition to the new version of the Milestones, the ACGME has mapped the original Milestones 1.0 to the new Milestones 2.0. Indicated below are where the subcompetencies are similar between versions. These are not exact matches, but are areas that include similar elements. Not all subcompetencies map between versions. Inclusion or exclusion of any subcompetency does not change the educational value or impact on curriculum or assessment.

| Milestones 1.0 | Milestones 2.0 |
|---|---|
| PC1: Salivary Disease | |
| PC2: Aerodigestive Tract Lesions | |
| PC3: Sleep Disordered Breathing | |
| PC4: Facial Trauma | |
| PC5: Rhinosinusitis | |
| PC6: Nasal Deformity | |
| PC7: Chronic Ear | |
| PC8: Pediatric Otitis Media | |
| | PC1: Pediatric Chronic Airway Management PC2: Pediatric Acute Airway Management PC3: Pediatric Head and Neck Mass/Lesion PC4: Pediatric Otologic Disease PC5: Pediatric Rhinologic Diseases PC6: Pediatric Craniofacial, Plastic, and Reconstructive Surgery |
| MK1: Upper Aerodigestive Tract Malignancy | |
| MK2: Hearing Loss | |
| MK3: Dysphagia-Dysphonia | |
| MK4: Inhalant Allergy | |
| | MK1: Head and Neck Developmental Anatomy and Embryology |
| | MK2: Syndromes and Complex Comorbidities Impacting Otolaryngologic Care |
| SBP1: Patient Safety | SBP1: Patient Safety and Quality Improvement |
| SBP2: Resource Utilization | SBP3: Physician Role in Health Care Systems |
| | SBP2: System Navigation for Patient-Centered Care |
| PBLI: The ability to investigate and evaluate the care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning | PBLI1: Evidence-Based and Informed Practice PBLI2: Reflective Practice and Commitment to Personal Growth |
| PROF: Professionalism | PROF1: Professional Behavior and Ethical Principles PROF2: Accountability/Conscientiousness |

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| | PROF3: Knowledge of Systemic and Individual Factors of Well-Being |
| ICS: Interpersonal Communication Skills | ICS1: Patient- and Family-Centered Communication ICS2: Interprofessional and Team Communication |
| | ICS3: Communication within Health Care Systems |

Available Milestones Resources

Milestones 2.0: Assessment, Implementation, and Clinical Competency Committees Supplement, 2021 - <https://meridian.allenpress.com/jgme/issue/13/2s>

Milestones Guidebooks: <https://www.acgme.org/milestones/resources/>

- *Assessment Guidebook*
- *Clinical Competency Committee Guidebook*
- *Clinical Competency Committee Guidebook Executive Summaries*
- *Implementation Guidebook*
- *Milestones Guidebook*

Milestones Guidebook for Residents and Fellows: <https://www.acgme.org/residents-and-fellows/the-acgme-for-residents-and-fellows/>

- *Milestones Guidebook for Residents and Fellows*
- *Milestones Guidebook for Residents and Fellows Presentation*
- *Milestones 2.0 Guide Sheet for Residents and Fellows*

Milestones Research and Reports: <https://www.acgme.org/milestones/research/>

- *Milestones National Report*, updated each fall
- *Milestones Predictive Probability Report*, updated each fall
- *Milestones Bibliography*, updated twice each year

Developing Faculty Competencies in Assessment courses - <https://www.acgme.org/meetings-and-educational-activities/courses-and-workshops/developing-faculty-competencies-in-assessment/>

Assessment Tool: Direct Observation of Clinical Care (DOCC) - <https://dl.acgme.org/pages/assessment>

Assessment Tool: Teamwork Effectiveness Assessment Module (TEAM) - <https://team.acgme.org/>

Improving Assessment Using Direct Observation Toolkit - <https://dl.acgme.org/pages/acgme-faculty-development-toolkit-improving-assessment-using-direct-observation>

Remediation Toolkit - <https://dl.acgme.org/courses/acgme-remediation-toolkit>

Learn at ACGME has several courses on Assessment and Milestones - <https://dl.acgme.org/>