Supplemental Guide:
Sleep Medicine

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TABLE OF CONTENTS

INTRODUCTION **3**

PATIENT CARE **4**

Gather and Synthesize Information from Sleep Medicine Patients Across the Lifespan 4
Use of Diagnostic Tools in Sleep Medicine Across the Lifespan 6
Interpretation of Physiologic Testing in Sleep Medicine Across the Lifespan 8
Management Plan for Sleep Medicine Patients Across the Lifespan 10

MEDICAL KNOWLEDGE **12**

Sleep Medicine Clinical Science 12
Therapeutic Knowledge for Sleep Disorders 13

SYSTEMS-BASED PRACTICE **14**

Patient Safety and Quality Improvement 14
System Navigation for Patient-Centered Care 16
Physician Role in Health Care Systems 18

PRACTICE-BASED LEARNING AND IMPROVEMENT **21**

Evidence-Based and Informed Practice 21
Reflective Practice and Commitment to Personal Growth 22

PROFESSIONALISM **24**

Professional Behavior and Ethical Principles 24
Accountability/Conscientiousness 26
Self-Awareness and Help-Seeking 27

INTERPERSONAL AND COMMUNICATION SKILLS **29**

Patient- and Family-Centered Communication 29
Barriers and Bias Mitigation 31
Interprofessional and Team Communication 33
Communication within Health Care Systems 35

MILESTONES RESOURCES **37**

Milestones Supplemental Guide

This document provides additional guidance and examples for the Sleep Medicine 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.

The Milestones reference common, uncommon and complex sleep disorders. This list is not exhaustive but intended to provide additional insight as to the intent of the milestone.

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.

Examples of Common, Uncommon, and Complex Sleep Disorders

Common	Uncommon	Complex
Obstructive sleep apnea	Narcolepsy	COPD/OSA overlap
Insomnia	PTSD related nightmare disorder	Hypoventilation
Inadequate sleep hygiene	REM sleep behavior disorder	Congenital central hypoventilation syndrome
Delayed sleep-wake syndrome	Central sleep apnea	Complex sleep apnea
Insufficient sleep syndrome	Shift work disorder	Fatal familial insomnia
Restless legs syndrome	NREM parasomnia	Hypersomnia (central disorders of hyper - somnolence)
	Rhythmic movement disorders	
	Periodic limb movement disorder	

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.

Patient Care 1: Gather and Synthesize Information from Sleep Medicine Patients Across the Lifespan **Overall Intent:** To obtain and integrate a patient history and perform a physical examination on sleep medicine patients of all ages and complexities	
Milestones	**Examples**
Level 1 *Elicits and concisely reports a hypothesis-driven patient history for common patient presentations*	● Gathers patient symptoms of obstructive sleep apnea and presents concisely to the attending
Seeks and obtains data from collateral sources, with guidance	● Obtains information from bed partner or caregiver on signs and symptoms of obstructive sleep apnea, with prompting
Performs a hypothesis-driven physical exam for a common patient presentation and attends to patient comfort and safety	● Examines upper airway anatomy, measures collar size, and considers appropriate vital signs and measures in a respectful manner
Level 2 *Elicits and concisely reports a hypothesis-driven patient history for uncommon patient presentations*	● Gathers patient symptoms of narcolepsy and presents concisely to the attending
Independently seeks and obtains data from collateral sources	● Directly contacts bed partner or caregiver to gather signs and symptoms of narcolepsy; seeks and obtains outside records through proper channels
Performs a hypothesis driven physical exam for an uncommon patient presentation	● Performs directed neurological exam in a respectful manner
Level 3 *Efficiently elicits and concisely reports a hypothesis-driven patient history for complex patient presentations, incorporating pertinent psychosocial and other determinants of health*	● Gathers patient symptoms of nightmares in a military veteran with obstructive sleep apnea and dream enactment and concisely presents to the attending
Reconciles current data with collateral sources for common cases	● Reviews pertinent medical records in the context of the current presenting symptoms
Performs a hypothesis-driven physical exam for a complex patient presentation	● Performs directed neurological exam and examines upper airway anatomy, measures collar size, and considers appropriate vital signs and measures in a respectful manner
Level 4 *Obtains relevant historical subtleties, including sensitive information that informs the differential diagnosis*	● Assesses whether behavior is stereotyped and gathers information for triggers/trauma history in the evaluation of parasomnia

Reconciles current data with collateral sources for uncommon and complex cases *Elicits subtle findings on physical exam*	● Reviews multiple past sleep studies and multiple sleep latency test (MSLT) in the current evaluation of narcolepsy ● Performs deep tendon reflex exam during presumed cataplexy episode; assesses external nasal valve collapse on exam
Level 5 *Role models integration of history and physical examination and collateral data*	● Is identified by the program director to teach data integration to other learners
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Mini-Clinical Evaluation Exercise (Mini-CEX) ● Multisource feedback ● Simulation
Curriculum Mapping	●
Notes or Resources	● Sateia MJ. International classification of sleep disorders - third edition. *Chest*. 2014;146(5):1387-1394. https://journal.chestnet.org/article/S0012-3692(15)52407-0/fulltext. Accessed 2019. ● American Academy of Sleep Medicine (AASM). Case Study of the Month. https://aasm.org/membership/case-study-of-the-month/. Accessed 2019. ● American Academy of Sleep Medicine. Screening Questions - Sleep History & Physical. https://aasm.org/resources/medsleep/(harding)questions.pdf. Accessed 2019. ● Wise MS, Glaze DG. Assessment of sleep disorders in children. *UpToDate*. 2018;4(05). https://www.uptodate.com/contents/assessment-of-sleep-disorders-in-children#H185950752. Accessed 2019.

Patient Care 2: Use of Diagnostic Tools in Sleep Medicine Across the Lifespan **Overall Intent:** To choose appropriate tools to diagnose sleep disorders across patients of all ages and complexities	
Milestones	**Examples**
Level 1 *Identifies diagnostic tools used to evaluate patients with sleep disorders* *Identifies available consumer sleep technologies*	● Identifies types of studies used to evaluate obstructive sleep apnea ● Lists names and types of consumer sleep technologies
Level 2 *Selects diagnostic tools for patients with common sleep disorders* *Explains common uses of consumer sleep technologies*	● Chooses between home sleep apnea testing versus attended polysomnogram for the diagnosis of obstructive sleep apnea ● Identifies wearable activity monitor as a possible tool to measure sleep duration
Level 3 *Selects diagnostic tools for patients with uncommon and complex sleep disorders* *Identifies limitations of consumer sleep technologies*	● Chooses attended polysomnography with full electroencephalogram (EEG) for the evaluation of parasomnia versus seizure disorder ● Identifies lack of accurate sleep staging as a limitation of portable activity monitors
Level 4 *Integrates clinical findings and test performance characteristics to obtain the diagnosis* *Incorporates consumer sleep technologies for individual use*	● Orders a daytime diagnostic study to evaluate obstructive sleep apnea in a shift worker ● Uses patient's portable activity monitor to track changes in sleep duration with therapy for insomnia
Level 5 *Integrates current and new diagnostic tools in novel ways to further evaluate sleep disorders* *Incorporates consumer sleep technologies in novel ways or for population use*	● Uses continuous positive airway pressure (CPAP) download data to help identify circadian rhythm disorder ● Completes a quality improvement (QI) project using consumer worn devices to improve nightly sleep duration by setting nightly bedtime within a hospital ward
Assessment Models or Tools	● Case studies ● Direct observation ● Medical record (chart) audit ● Multisource feedback ● Sleep in-service exam
Curriculum Mapping	●

Notes or Resources	● Sateia MJ. International classification of sleep disorders - third edition. *Chest*. 2014;146(5):1387-1394. https://journal.chestnet.org/article/S0012-3692(15)52407-0/fulltext Accessed 2019. ● American Academy of Sleep Medicine. Practice Guidelines. https://aasm.org/clinical-resources/practice-standards/practice-guidelines/. Accessed 2019.

Patient Care 3: Interpretation of Physiologic Testing in Sleep Medicine Across the Lifespan **Overall Intent:** To identify findings and interpret sleep testing to diagnose and manage sleep disorders	
Milestones	**Examples**
Level 1 *Describes the basic principles of signal acquisition and processing* *Identifies characteristics of normal sleep-wake physiology*	● Describes the 10-20 system in EEG positioning for sleep studies ● Identifies the normal percentages of N1/N2/N3/R sleep in different ages
Level 2 *Identifies common abnormalities and artifacts* *Interprets routine testing to identify common sleep-wake disorders*	● Identifies 60 hertz artifact ● Identifies sweat artifact ● Recognition of Cheyne-Stoke respiration ● Identifies obstructive apneas and hypopneas on a home sleep apnea test
Level 3 *Identifies uncommon abnormalities and variants* *Interprets routine testing to identify uncommon sleep-wake disorders*	● Identifies increased muscle tone during R sleep ● Interprets pathological sleepiness and sleep onset REM periods on an MSLT ● Recognizes CPAP emergent central apnea and recommends a pressure that minimizes it ● Recognizes when an HST may underestimate sleep apnea severity
Level 4 *Identifies the technical basis and limitations of the testing modalities; troubleshoots signal processing* *Interprets advanced testing; interprets testing of complex sleep-wake disorders*	● Identifies the deficiencies in data collection of in-lab sleep studies with lack of R sleep, supine position, or insufficient sleep time ● Recognizes Biot's breathing ● Accurately interprets positive pressure titration polysomnography data to choose the optimal positive airway pressure (PAP) therapy for complex sleep apnea ● Interprets a maintenance of wakefulness test (MWT) relative to patient symptoms
Level 5 *Demonstrates expertise in advanced principles of signal acquisition and processing* *Applies current technologies for novel use; incorporates emerging technologies to diagnose and treat sleep-wake disorders*	● Serves as mentor to sleep technologists on signal acquisition and processing ● Interprets sleep studies to diagnose obstructive sleep apnea in the newborn with micrognathia to determine the urgency of mandibular surgery
Assessment Models or Tools	● AASM inter-scorer reliability program ● Direct observation ● Review of scored sleep studies

	● Review of written reports' ● Simulation ● Sleep in-service exam
Curriculum Mapping	●
Notes or Resources	● American Academy of Sleep Medicine. The AASM Manual for the Scoring of Sleep and Associated Events. https://aasm.org/clinical-resources/scoring-manual/. Accessed 2019. ● American Academy of Sleep Medicine. Sleep ISR is Here. https://aasm.org/sleep-isr-is-here/. Accessed 2019. ● Sateia MJ. International classification of sleep disorders - third edition. *Chest*. 2014;146(5):1387-1394. https://journal.chestnet.org/article/S0012-3692(15)52407-0/fulltext Accessed 2019.

Patient Care 4: Management Plan for Sleep Medicine Patients Across the Lifespan **Overall Intent:** To implement management plans for sleep disorders in patients of all ages	
Milestones	**Examples**
Level 1 *Implements management plans for common sleep disorders and recommends strategies to maintain and promote sleep health*	● Recommend evaluation and supplementation of iron stores in a patient with restless leg syndrome ● Identifies excessive phone use at night as a cause for sleep disruption and recommends sleep hygiene measures for treatment of inadequate sleep hygiene
Level 2 *Implements management plans for uncommon sleep disorders and to maintain and promote sleep health*	● Recommends environmental safety and high-dose melatonin for REM sleep behavior disorder
Level 3 *Develops and implements management plan for complex sleep disorders and to maintain and promote sleep health*	● Educates patient and caregiver about PAP therapy to treat OSA/hypoventilation and advises treatment for hypersomnia in a child with Prader-Willi Syndrome
Level 4 Adjusts comprehensive management plans by incorporating psychosocial and other determinants of health and response to therapy	● Discusses and recommends additional treatment options for a homeless patient without reliable resources
Level 5 *Develops and implements a personalized management plan for patients with subtle presentations, rare or ambiguous sleep disorders* *Advocates to maintain and promote sleep health for patients and populations*	● Discusses personalized management plan in a newborn with congenital central hypoventilation syndrome including genetic counseling and referral to appropriate specialists ● Gives a workshop to students on the effects of sleep deprivation on cognition and learning and advocates for age-appropriate school start times
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Multisource feedback ● Simulation ● Sleep in-service exam
Curriculum Mapping	●
Notes or Resources	● Sateia MJ. International classification of sleep disorders - third edition. *Chest*. 2014;146(5):1387-1394. https://journal.chestnet.org/article/S0012-3692(15)52407-0/fulltext Accessed 2019. ● American Academy of Sleep Medicine. Advocacy. https://aasm.org/advocacy/. Accessed 2019.

	● American Academy of Sleep Medicine. Practice Guidelines. https://aasm.org/clinical-resources/practice-standards/practice-guidelines/. Accessed 2019.

Medical Knowledge 1: Sleep Medicine Clinical Science **Overall Intent:** To apply knowledge of physiology and pathophysiology of sleep-wake disorders to clinical care for patients of all ages	
Milestones	**Examples**
Level 1 *Demonstrates knowledge of physiology and pathophysiology of common sleep disorders*	● Discusses the physiology and pathophysiology of obstructive sleep apnea, insomnia, sleep deprivation
Level 2 *Demonstrates knowledge of physiology and pathophysiology of uncommon sleep disorders*	● Discusses the physiology and pathophysiology of narcolepsy, central sleep apnea, advanced sleep-wake phase disorder
Level 3 *Integrates scientific knowledge to address complex sleep disorders*	● Differentiates Parkinson's disease-associated symptoms from peripheral neuropathy or restless legs syndrome
Level 4 *Synthesizes scientific knowledge to address complex or atypical sleep disorders in the context of a patient with comorbid conditions that impact management of the patient's sleep disorder*	● Applies knowledge of loop gain and congestive heart failure to the development of management plan for a patient with complex sleep apnea ● Applies knowledge of craniofacial anatomy and impaired neuromuscular tone to treatment of severe obstructive sleep apnea in a patient with Down syndrome who is unable to tolerate PAP therapy
Level 5 *Demonstrates expertise in sleep science and its application to clinical medicine*	● Gives a lecture on neurophysiology of sleep and its application to clinical practice
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Multiple choice questions ● Sleep in-service exam ● Standardized patient ● Structured Case Discussion
Curriculum Mapping	●
Notes or Resources	● American Academy of Sleep Medicine. Case Study of the Month. https://aasm.org/membership/case-study-of-the-month/. Accessed 2019.

Medical Knowledge 2: Therapeutic Knowledge for Sleep Disorders **Overall Intent:** To explain and apply knowledge of sleep therapeutics across all ages and complexities	
Milestones	**Examples**
Level 1 *Describes the indications and scientific basis for common therapies for sleep disorders*	● Discusses the indications and mechanism of action for the use of mandibular advancement device in the treatment of obstructive sleep apnea
Level 2 *Analyzes the indications, contraindications, and complications of common therapies for sleep disorders*	● Describes the indications, contraindications and potential side effects of use of a hypnotic agent in the treatment of insomnia
Level 3 *Demonstrates knowledge of multimodal therapeutic approaches to sleep disorders in the context of a patient's comorbid conditions to formulate treatment options*	● Details management strategies incorporating light therapy and pharmacotherapy in the management of co-morbid narcolepsy and delayed sleep-wake phase disorder
Level 4 *Synthesizes knowledge of therapeutic options within the clinical context (patient, system, society) to optimize treatment plan and adherence*	● Provides several treatment options for the management of obstructive sleep apnea in the setting of Down syndrome and prioritizes in a patient centered manner to optimize adherence
Level 5 *Demonstrates an understanding of emerging, atypical, or complex therapeutic options*	● Displays understanding of indications and mechanisms of action of recently published pharmacotherapy for sleep disorders
Assessment Models or Tools	● Case studies ● Direct observation ● Medical record (chart) audit ● Multisource feedback ● Simulation ● Sleep in-service exam
Curriculum Mapping	●
Notes or Resources	● AASM Treatment Guidelines (No. 16 insert) ● American Academy of Sleep Medicine. Practice Guidelines. https://aasm.org/clinical-resources/practice-standards/practice-guidelines/. Accessed 2019.

Systems-Based Practice 1: Patient Safety and Quality Improvement **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 QI project	
Milestones	**Examples**
Level 1 *Demonstrates knowledge of common patient safety events*	● Lists patient misidentification or medication errors as common patient safety events
Demonstrates knowledge of how to report patient safety events	● Describes how to report errors in your environment
Demonstrates knowledge of basic quality improvement methodologies and metrics	● Describes fishbone tool
Level 2 *Identifies system factors that lead to patient safety events*	● Identifies situations that can disrupt sleep in hospitalized patients
Reports patient safety events through institutional reporting systems	● Reports lack of hand sanitizer dispenser at each clinical exam room to the appropriate personnel
Describes local quality improvement initiatives	● Summarizes protocol resulting in decreased falls in hospitalized patients requiring sleep aids in a single ward
Level 3 *Participates in analysis of patient safety events*	● Preparing for morbidity and mortality presentation
Participates in disclosure of patient safety events to patients and families	● Through simulation, communicates with patients/families about an incorrect PAP prescription
Participates in local quality improvement initiatives	● Participates in project to improve sleep quality and minimized disruptions to patients in the hospital setting
Level 4 *Conducts analysis of patient safety events and offers error prevention strategies* *Discloses patient safety events to patients and families*	● Collaborates with a team to conduct the analysis of incorrect PAP prescription and can effectively communicate with patients/families about those events
Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project	● Participates in the completion of a QI project to improve safe sleep practices in hospitalized infants, including assessing the problem, articulating a broad goal, developing a SMART objective plan, and monitoring progress and challenges

Level 5 *Actively engages teams and processes to modify systems to prevent patient safety events* *Role models or mentors others in the disclosure of patient safety events* *Creates, implements, and assesses quality improvement initiatives at the institutional or community level*	● Assumes a leadership role at the departmental or institutional level for patient safety ● Conducts a simulation for disclosing patient safety events ● Initiates and completes a QI project to improve safe sleep practices for infants in collaboration with the county health department and shares results with stakeholders
Assessment Models or Tools	● Direct observation ● E-module multiple choice tests ● Medical record (chart) audit ● Multisource feedback ● Portfolio ● Reflection ● Simulation
Curriculum Mapping	●
Notes or Resources	● Institute for Healthcare Improvement. http://www.ihi.org/Pages/default.aspx. Accessed 2019. ● American Academy of Sleep Medicine. Transportation Safety. https://aasm.org/advocacy/initiatives/transportation-safety/. Accessed 2019. ● Watson NF, Morgenthaler T, Chervin R, et al. Confronting drowsy driving: the American Academy of Sleep Medicine perspective. *J Clin Sleep Med*. 2015;11(11)1335-1336. http://jcsm.aasm.org/ViewAbstract.aspx?pid=30315. Accessed 2019. ● Gurubhagavatula I. Drowsy driving: risks, evaluation, and management. *UpToDate*. 2016. https://www.uptodate.com/contents/drowsy-driving-risks-evaluation-and-management. Accessed 2019. ● Sateia MJ, Buysse DJ, Krystal AD, Neubauer DN, Heald JL. Clinical practice guideline for the pharmacologic treatment of chronic insomnia in adults: an American Academy of Sleep Medicine clinical practice guidelines. *J Clin Sleep Med*. 2017;13(2):307-349. http://jcsm.aasm.org/ViewAbstract.aspx?pid=30954. Accessed 2019. ● Drug Enforcement Administration. State Prescription Drug Monitoring Programs. https://www.deadiversion.usdoj.gov/faq/rx_monitor.htm#4. Accessed 2019.

Systems-Based Practice 2: System Navigation for Patient-Centered Care **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**
Level 1 *Demonstrates knowledge of care coordination* *Demonstrates knowledge of population and community health needs*	● For a patient with cerebral palsy and spastic quadriparesis identifies the medical providers, home health nurse, and social workers as members of the team ● Identifies that patients in rural areas may have different needs than urban patients
Level 2 *Coordinates care of patients in routine clinical situations, performs transitions of care, and effectively uses interprofessional teams* *Identifies specific population and community health needs for their local population*	● Coordinates care with the Down syndrome clinic, ears, nose, throat (ENT) clinic and sleep clinic at the time of work-up for obstructive sleep apnea ● Identifies that limited transportation options may be a factor in rural patients getting to multiple subspecialty clinic appointments
Level 3 *Coordinates care of patients in complex clinical situations, performs transitions of care, and effectively uses interprofessional teams* *Uses local resources effectively to meet the needs of a patient population and community*	● Works with the social worker to coordinate care for an uninsured patient that will ensure follow-up to a sleep clinic after initiation of PAP therapy ● Refers patients to a PAP assistance program which provides a sliding fee scale option and provides discounted PAP units and supplies
Level 4 *Role models effective coordination of patient-centered care among different disciplines and specialties* *Participates in changing and adapting practice to provide for the needs of specific populations*	● During multidisciplinary clinics, leads team members in approaching the medical needs of a complex medical patient ● Identifies online cognitive behavioral therapy for cognitive behavioral therapy insomnia programs for patients who are unable to schedule a visit with a behavioral sleep medicine specialist
Level 5 *Analyses the process of care coordination and leads in the design and implementation of improvements* *Leads innovations and advocates for populations and communities with specific health care needs*	● Leads a program to arrange for team home visits to newborns at high risk for infant mortality ● Leads development of telehealth diagnostic services for a rural site
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit

	● Multisource feedback ● Quality metrics
Curriculum Mapping	●
Notes or Resources	● Centers for Disease Control and Prevention. Population Health Training in Place Program (PH-TIPP). https://www.cdc.gov/pophealthtraining/whatis.html. Accessed 2019. ● Skochelak SE, Hawkins RE, Lawson LE, Starr SR, Borkan JM, Gonzalo JD. *AMA Education Consortium: Health Systems Science*. 1st ed. Philadelphia, PA: Elsevier; 2016. https://commerce.ama-assn.org/store/ui/catalog/productDetail?product_id=prod2780003. Accessed 2019. ● Strollo PJ Jr, Badr MS, Coppola MP, Fleishman SA, Jacobowitz O, Kushida CA. The future of sleep medicine. *Sleep*. 2011;34(12):1613-1619. https://academic.oup.com/sleep/article/34/12/1613/2454547. Accessed 2019. ● Vincent N, Lewycky S. Logging on for better sleep: RCT of the effectiveness of online treatment for insomnia. *Sleep*. 2009;32(6):807-815. https://academic.oup.com/sleep/article/32/6/807/2454420. Accessed 2019.

Systems-Based Practice 3: Physician Role in Health Care Systems **Overall Intent:** To understand fellow's role in the health care system and how to optimize the system to improve patient care and the health system's performance	
Milestones	**Examples**
Level 1 *Identifies key components of the health care system* *Describes basic health payment systems and practice models* *Identifies basic knowledge domains for effective transition to practice*	● Articulates the complexity of Medicare guidelines for obtaining PAP therapy ● Has basic understanding on the impact of health plan coverage on sleep diagnostic testing ● Identifies that clinic notes must meet coding requirements
Level 2 *Describes how components of a health care system are interrelated, and how this impacts patient care* *Delivers care with consideration of each patient's payment model* *Demonstrates use of information technology required for medical practice*	● Explains that improving patient satisfaction impacts patient adherence and payment to the health system ● Takes into consideration patient's prescription drug coverage when choosing methylphenidate versus modafinil for treatment of narcolepsy in a pediatric patient ● Recognizes that appropriate documentation can influence continued reimbursement for PAP therapy
Level 3 *Discusses how individual practice affects the broader system* *Engages with patients in shared decision making, informed by each patient's payment models* *Describes core administrative knowledge needed for transition to practice*	● Identifies eligible patients for home sleep apnea testing to improve resource utilization ● Discusses risks and benefits of pursuing in-lab polysomnography in the setting of excessive daytime sleepiness with a negative when a patient has a high out–of-pocket deductible ● Understands the core elements of physician compensation and employment contract negotiation
Level 4 *Manages various components of the health care system to provide efficient and effective patient care* *Advocates for patient care needs with consideration of the limitations of each patient's payment model*	● Ensures proper documentation to obtain bi-level PAP for a patient with Duchenne muscular dystrophy ● Works collaboratively to improve patient assistance resources for an uninsured patient with obstructive sleep apnea

Analyzes individual practice patterns and professional requirements in preparation for practice	● Proactively compiles sleep study procedure logs in anticipation of applying for hospital privileges
Level 5 *Advocates for or leads systems change that enhances high-value, efficient, and effective patient care* *Participates in health policy advocacy activities* *Educates others to prepare them for transition to practice*	● Works with community or professional organizations to advocate for back to sleep and safe sleep in a pediatric population ● Advocates for changes in school start times to improve student health and performance ● Mentors junior learners about opportunities in sleep medicine in relation to their career planning
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Multisource feedback ● Patient satisfaction data ● QI project
Curriculum Mapping	●
Notes or Resources	● Agency for Healthcare Research and Quality. Major Physician Measurement Sets. https://www.ahrq.gov/talkingquality/measures/setting/physician/measurement-sets.html. Accessed 2019. ● The Kaiser Family Foundation. Health Reform. https://www.kff.org/topic/health-reform/. Accessed 2019. ● Dzau VJ, McClellan M, Burke S, et al. Vital directions for health and health care: priorities form 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/. Accessed 2019. ● The Commonwealth Fund. Health System Data Center. http://datacenter.commonwealthfund.org/?_ga=2.110888517.1505146611.1495417431-1811932185.1495417431#ind=1/sc=1. Accessed 2019. ● The Commonwealth Fund. Health Reform Resource Center: http://www.commonwealthfund.org/interactives-and-data/health-reform-resource-center#/f:@facasubcategoriesfacet63677=[Individual%20and%20Employer%20Responsibility. Accessed 2019. ● American Board of Internal Medicine. QI/PI activities. http://www.abim.org/maintenance-of-certification/earning-points/practice-assessment.aspx. Accessed 2019. ● American Academy of Sleep Medicine. Compensation Survey. https://aasm.org/professional-development/compensation-survey/. Accessed 2019.

	● American Academy of Sleep Medicine. Coding and Reimbursement Quick Reference Guide. https://learn.aasm.org/Public/Catalog/Details.aspx?id=hZ0LkMSNrdcV6ek6jUqfog%3d%3d&returnurl=%2fUsers%2fUserOnlineCourse.aspx%3fLearningActivityID%3dhZ0LkMSNrdcV6ek6jUqfog%253d%253d&_ga=2.230378843.638343362.1562770995-635949251.1562770995. Accessed 2019.

Practice-Based Learning and Improvement 1: Evidence-Based and Informed Practice **Overall Intent:** To incorporate evidence and patient values into clinical practice	
Milestones	**Examples**
Level 1 *Demonstrates how to access and use available evidence, and incorporate patient preferences and values in order to take care of a routine patient*	● Identifies evidence-based guidelines for pediatric narcolepsy
Level 2 *Articulates clinical questions and elicits patient preferences and values in order to guide evidence-based care*	● In a patient with obstructive sleep apnea, identifies and discusses potential evidence-based treatment options, and solicits patient perspective
Level 3 *Locates and applies the best available evidence, integrated with patient preference, to the care of complex patients*	● Obtains, discusses, and applies evidence for the treatment of a patient with obstructive sleep apnea and co-existing insomnia and post-traumatic stress disorder (PTSD) ● Understands and appropriately uses clinical practice guidelines in making patient care decisions while eliciting patient preferences
Level 4 *Critically appraises and applies evidence even in the face of uncertainty and conflicting evidence to guide care, tailored to the individual patient*	● Accesses the primary literature to identify alternative treatments for non-REM parasomnias in a patient who does not want to use benzodiazepines
Level 5 *Coaches others to critically appraise and apply evidence for complex patients; and/or participates in the development of guidelines*	● Leads clinical teaching on application of best practices in critical appraisal of circadian rhythm sleep-wake disorders ● As part of a team, develops a peri-operative obstructive sleep apnea program
Assessment Models or Tools	● Direct observation ● Mini-CEX ● Presentation ● Research portfolio ● Sleep in-service exam
Curriculum Mapping	●
Notes or Resources	● 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 2019. ● U.S. National Library of Medicine. PubMed Tutorial. https://www.nlm.nih.gov/bsd/disted/pubmedtutorial/cover.html. Accessed 2019. ● American Academy of Sleep Medicine. Practice Guidelines. https://aasm.org/clinical-resources/practice-standards/practice-guidelines/. Accessed 2019.

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; reflect on all domains of practice, personal interactions, and behaviors, and their impact on colleagues and patients (reflective mindfulness); and develop clear objectives and goals for improvement in some form of a learning plan	
Milestones	**Examples**
Level 1 *Accepts responsibility for personal and professional development by establishing goals*	● Sets a personal practice goal of documenting use of the Epworth Sleepiness Scale in the evaluation of possible narcolepsy
Identifies the factors which contribute to gaps between expectations and actual performance	● Identifies unfamiliarity with the EHR as a factor in not completing clinic notes on time
Identifies gaps in knowledge	● Identifies gaps in personal knowledge of REM sleep behavior disorder pathophysiology
Level 2 *Demonstrates openness to performance feedback and other data in order to inform goals*	● Integrates feedback to adjust the documentation of the Epworth Sleepiness Scale in the evaluation of patients for possible narcolepsy
Analyzes and reflects on the factors which contribute to gaps between expectations and actual performance	● Assesses time management skills and how it impacts timely completion of clinic notes and literature reviews
Designs and implements a learning plan, with prompting	● When prompted, develops individual education plan to improve their evaluation of narcolepsy
Level 3 *Solicits performance feedback and data episodically, with adaptability for personal growth*	● Does a chart audit to determine the percent of patients evaluated for possible narcolepsy which documents the Epworth Sleepiness Scale
Institutes behavioral changes to narrow gaps between expectations and actual performance	● Completes a comprehensive literature review prior to patient encounters
Independently creates and implements a learning plan	● Using web-based resources, creates a personal curriculum to improve his/her evaluation of narcolepsy
Level 4 *Intentionally seeks performance feedback data consistently, with adaptability for personal growth*	● Completes a quarterly chart audit to ensure documentation of discussion about medication side effects in patients with restless leg syndrome
Challenges assumptions and considers alternatives in narrowing gaps between expectations and actual performance	● After patient encounter, debriefs with the attending and other patient care team members to optimize future collaboration in the care of the patient and family

Uses performance data to measure the effectiveness of the learning plan and when necessary, improves it	● Performs a chart audit on documentation of their evaluation of REM behavior disorder
Level 5 *Role models consistently seeking performance data, with adaptability for personal growth* *Coaches others on reflective practice* *Facilitates the design and implementation of learning plans for others*	● Models practice improvement and adaptability ● Develops educational module for collaboration with polysomnography technologists ● Assists rotating trainees in developing their individualized learning plans in sleep medicine
Assessment Models or Tools	● Direct observation ● Medical record (chart) audit ● Multisource feedback ● Review of learning plan
Curriculum Mapping	●
Notes or Resources	● Hojat M, Veloski JJ, Gonnella JS. Measurement and correlates of physicians' lifelong learning. *Acad Med.* 2009;84(8):1066-74. https://insights.ovid.com/crossref?an=00001888-200908000-00021. Accessed 2019. ● Burke AE, Benson B, Englander R, Carraccio C, Hicks PJ. Domain of competence: practice-based learning and improvement. Acad Pediatr. 2014;14(2 Suppl):S38-S54. https://www.academicpedsjnl.net/article/S1876-2859(13)00333-1/fulltext. Accessed 2019. ● 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. Acad Med. 2013;88(10):1558-1563. https://insights.ovid.com/article/00001888-201310000-00039. Accessed 2019.

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	
Milestones	**Examples**
Level 1 *Identifies and describes potential triggers for professionalism lapses* *Demonstrates knowledge of the ethical principles commonly identified in sleep medicine*	● Understands that being sleep deprived can cause a lapse in professionalism ● Understands sleep deprivation has adverse effects on patient care and on professional relationships ● Articulates how the principle of autonomy applies to a patient with uncontrolled narcolepsy and driving
Level 2 *Describes when and how to appropriately report professionalism lapses, including strategies for addressing common barriers* *Recognizes and manages straightforward ethical situations*	● Respectfully approaches a learner who is late to clinic about the importance of being on time ● Notifies appropriate supervisor when a learner is routinely late to clinic ● Recommends not to drive in a patient with excessive daytime sleepiness due to underlying sleep disorder and educates the patient about driving safety
Level 3 *Takes responsibility for own professionalism lapses* *Identifies need to seek help in managing complex ethical situations*	● Takes ownership and apologizes to patient after not prescribing durable medical equipment in a timely fashion after sleep study completion ● Recognizes need to contact appropriate authorities regarding suspected child abuse in a child being evaluated for behavioral insomnia ● After noticing a colleague's inappropriate social media post, reviews policies related to posting of content and seeks guidance
Level 4 *Recognizes situations that may trigger professionalism lapses and intervenes to prevent lapses in self and others* *Uses appropriate resources for managing and resolving ethical dilemmas*	● Actively considers the perspectives of others and models respect for patients and promotes the same from colleagues ● Recognizes and uses ethics consults, literature, and/or risk-management/legal counsel in patients suspected of abusing controlled substances
Level 5 *Coaches others when their behavior fails to meet professional expectations* *Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution*	● Coaches a team member when their behavior fails to meet professional expectations, and guides the creation of a performance improvement plan to prevent recurrence ● Engages stakeholders to address quality improvement projects to track controlled substance usage per state guidelines
Assessment Models or Tools	● Direct observation

	● Multisource feedback ● Oral or written self-reflection ● QI project ● Simulation
Curriculum Mapping	●
Notes or Resources	● American Medical Association. Ethics. https://www.ama-assn.org/delivering-care/ama-code-medical-ethics. Accessed 2019. ● ABIM Foundation. American Board of Internal Medicine. Medical professionalism in the new millennium: a physician charter. *Annals of Internal Medicine*. 2002;136(3):243-246. https://annals.org/aim/fullarticle/474090/medical-professionalism-new-millennium-physician-charter. Accessed 2019. ● Byyny RL, Papadakis MA, Paauw DS, Pfiel S, Alpha Omega Alpha. *Medical Professionalism Best Practices*. Menlo Park, CA: Alpha Omega Alpha Honor Medical Society; 2015. https://alphaomegaalpha.org/pdfs/2015MedicalProfessionalism.pdf. Accessed 2019. ● Levinson W, Ginsburg S, Hafferty FW, Lucey CR. *Understanding Medical Professionalism*. 1st ed. New York, NY: McGraw-Hill Education; 2014. https://accessmedicine.mhmedical.com/book.aspx?bookID=1058. Accessed 2019. ● Bynny RL, Paauw DS, Papadakis MA, Pfeil S, Alpha Omega Alpha. *Medical Professionalism Best Practices: Professionalism in the Modern Era.* Menlo Park, CA: Alpha Omega Alpha Honor Medical Society; 2017. http://alphaomegaalpha.org/pdfs/Monograph2018.pdf. Accessed 2019. ● Patrick R. Spotting unethical practices. *Sleep Review*. 2008. http://www.sleepreviewmag.com/2008/06/spotting-unethical-practices-2/. Accessed 2019.

Professionalism 2: Accountability/Conscientiousness **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**
Level 1 *Responds promptly to requests or reminders to complete tasks and responsibilities; takes responsibility for incomplete tasks*	● Responds promptly to reminders from program administrator to complete work-hour logs ● Timely attendance at conferences ● Completes end-of-rotation evaluations
Level 2 *Completes tasks and responsibilities in a timely manner*	● Completes administrative tasks, documents safety modules, procedure review, and licensing requirements by specified due date ● Completes polysomnography reading and documentation in a timely manner
Level 3 *Recognizes barriers that may impact self or others' ability to complete tasks and responsibilities in a timely manner*	● Offers assistance to other fellows who have multiple competing demands at work and home ● In preparation for being out of the office, arranges coverage for clinical care of sleep medicine patients
Level 4 *Proactively implements strategies for timely task completion to ensure that the needs of patients, teams, and systems are met*	● Sets up a to do list/reminders to actively monitor sleep study results and implement steps for appropriate clinical management
Level 5 *Takes ownership of system outcomes*	● Sets up a meeting with the care team members to streamline durable medical equipment orders and leads team to find solutions to delays in care
Assessment Models or Tools	● Compliance with deadlines and timelines ● Direct observation ● Multisource global feedback ● Self-assessment ● Simulation
Curriculum Mapping	●
Notes or Resources	● Code of conduct from trainee institutional manual ● Marvin JS. Invited commentary: professionalism in 21st-centruy medicine. *Proc (Bayl Univ Med Cent)*. 2007;20(1)16-17. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1769527/. Accessed 2019. ● Expectations of fellow program regarding accountability and professionalism ● American Medical Association. Ethics. https://www.ama-assn.org/delivering-care/ama-code-medical-ethics. Accessed 2019. ● Patrick R. Spotting unethical practices. *Sleep Review*. 2008. http://www.sleepreviewmag.com/2008/06/spotting-unethical-practices-2/. Accessed 2019.

Professionalism 3: Self-Awareness and Help-Seeking **Overall Intent:** To identify, use, manage, improve, and seek help for personal and professional well-being for self and others	
Milestones	**Examples**
Level 1 *Recognizes the status of personal and professional well-being*	● Acknowledging the role of sleep deprivation on one's emotional health and well-being
Level 2 *Demonstrates appropriate help-seeking behaviors*	● Independently identifies and communicates impact of a personal family tragedy ● Knows the institutions health and well-being resources and how to access them
Level 3 *With assistance, proposes a plan to optimize personal and professional well-being*	● With the multi-disciplinary team, develops a reflective response to deal with personal impact of difficult patient encounters ● With assistance, implements plan to allow for time off to be spent on personal well-being
Level 4 *Independently develops, reassesses and modifies plans to optimize personal and professional well-being*	● Uses validated tools to assess personal and profession well-being, identifies ways to manage stress and reassess if the management was helpful by using scales/tools.
Level 5 *Coaches others when emotional responses or limitations in knowledge/skills do not meet professional expectations*	● Assists in organizational efforts to address clinician well-being
Assessment Models or Tools	● Direct observation ● Group interview or discussions for team activities ● Individual interview ● Institutional online training modules ● Participation in institutional well-being programs ● Personal wellness plan ● Self-assessment
Curriculum Mapping	●
Notes or Resources	● This subcompetency is not intended to evaluate a fellow's well-being, but to ensure each fellow has the fundamental knowledge of factors that impact well-being, the mechanisms by which those factors impact well-being, and available resources and tools to improve well-being. ● Local resources, including Employee Assistance ● Hicks, Patricia J., Daniel Schumacher, Susan Guralnick, Carol Carraccio, and Ann E. Burke. 2014. "Domain of Competence: Personal and Professional Development." Academic Pediatrics 14(2 Suppl): S80-97. https://www.sciencedirect.com/science/article/abs/pii/S187628591300332X. ● Papanikitas A. Self-awareness and professionalism. *InnovAiT*. 2017;10(8):452-445. https://ora.ox.ac.uk/objects/uuid:16ee6cd3-fca4-4e6c-b2c4-

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Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication **Overall Intent:** To deliberately use language and behaviors to form constructive relationships with patients, and organize and lead communication around shared decision making	
Milestones	**Examples**
Level 1 *Uses language and nonverbal behavior to demonstrate respect and establish rapport* *Identifies the need to individualize communication strategies based on patient/family expectations and understanding*	● Introduces self and faculty member, identifies patient and others in the room, and engages all parties in health care discussion ● Uses age-appropriate language when discussing sleep diagnostic testing with pediatric patients
Level 2 *Establishes a therapeutic relationship in straightforward encounters using active listening and clear language* *Communicates compassionately with patient/family to clarify expectations and verify understanding of the clinical situation*	● Avoids medical jargon and restates patient perspective when discussing treatment options for obstructive sleep apnea ● Recognizes the need for handouts with diagrams and pictures to communicate information to a patient who is unable to read ● Prioritizes goals of the visit at the beginning of the appointment for a new patient with insomnia
Level 3 *Establishes a therapeutic relationship in challenging patient encounters* *Communicates medical information in the context of patient/family values, uncertainty, and conflict*	● Acknowledges patient's request for use of a wake-promoting agent in the context of untreated obstructive sleep apnea and communicates the importance of fully treating the patient's obstructive sleep apnea ● In a discussion with the faculty member, acknowledges discomfort in prescribing opioids for treatment of restless legs syndrome for a patient receiving controlled substances from multiple clinicians ● Discusses with patient's caregiver the pros and cons of treatment discontinuation in a patient with dementia who is unable to tolerate PAP therapy for obstructive sleep apnea
Level 4 *Easily establishes therapeutic relationships, with attention to patient/family concerns and context, regardless of complexity* *Uses shared decision making to align patient/family values, goals, and preferences with treatment options*	● Continues to engage patient and bed partner/caregiver who have disparate goals in the care of a patient with obstructive sleep apnea ● Uses patient and bed partner/caregiver preferences to guide treatment selection for obstructive sleep apnea
Level 5 *Mentors others in situational awareness and critical self-reflection to consistently develop positive therapeutic relationships*	● Leads a discussion group on personal experience with difficult patient encounters

Role models shared decision making in the context of patient/family values, uncertainty, and conflict	● Serves on a hospital bioethics committee
Assessment Models or Tools	● 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 ● Structured case discussions
Curriculum Mapping	●
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. https://www.researchgate.net/publication/49706184_Communication_skills_An_essential_component_of_medical_curricula_Part_I_Assessment_of_clinical_communication_AMEE_Guide_No_511. Accessed 2019. ● Makoul G. Essential elements of communication in medical encounters: The Kalamazoo consensus statement. *Acad Med*. 2001;76(4):390-393. https://www.researchgate.net/publication/264544600_Essential_elements_of_communication_in_medical_encounters_The_Kalamazoo_Consensus_Statement. Accessed 2019. ● Makoul G. The SEGUE Framework for teaching and assessing communication skills. *Patient Educ Couns*. 2001;45(1):23-34. https://www.researchgate.net/publication/11748796_The_SEGUE_Framework_for_teaching_and_assessing_communication_skills. Accessed 2019. ● Symons AB, Swanson A, McGuigan D, Orrange S, Akl EA. A tool for self-assessment of communication skills and professionalism in residents. *BMC Med Educ*. 2009;9:1. https://bmcmededuc.biomedcentral.com/articles/10.1186/1472-6920-9-1. Accessed 2019. ● American Medical Association. Listening with Empathy. https://edhub.ama-assn.org/steps-forward/module/2702561. Accessed 2019.

Interpersonal and Communication Skills 2: Barriers and Bias Mitigation **Overall Intent:** To deliberately use language and behaviors to identify communication barriers including self-reflection on biases, and minimize them in the doctor-patient relationships	
Milestones	**Examples**
Level 1 *Identifies common barriers to effective patient care*	● Identifies need for trained interpreter with non-English-speaking patients
Level 2 *Identifies complex barriers to effective patient care*	● Recognizes the need for handouts with diagrams and pictures to communicate information to a patient who is unable to read
Level 3 *Recognizes biases and mitigates barriers to optimize patient care, when prompted*	● With prompting from the attending, the sleep medicine fellow recognizes bias towards obese patients
Level 4 *Recognizes biases and proactively mitigates barriers to optimize patient care*	● Reflects on bias against obese patients and solicits input from faculty about mitigation of communication barriers when counseling patients about weight loss
Level 5 *Mentors others on recognition of bias and mitigation of barriers to optimize patient care*	● Develops a fellowship curriculum on mitigating barriers to care for marginalized patient populations
Assessment Models or Tools	● 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 or structured case discussions
Curriculum Mapping	●
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. https://www.researchgate.net/publication/49706184_Communication_skills_An_essential_component_of_medical_curricula_Part_I_Assessment_of_clinical_communication_AMEE_Guide_No_511. Accessed 2019. ● Makoul G. Essential elements of communication in medical encounters: The Kalamazoo consensus statement. *Acad Med*. 2001;76(4):390-393. https://www.researchgate.net/publication/264544600_Essential_elements_of_communication_in_medical_encounters_The_Kalamazoo_Consensus_Statement. Accessed 2019. ● Makoul G. The SEGUE Framework for teaching and assessing communication skills. *Patient Educ Couns*. 2001;45(1):23-34. https://www.researchgate.net/publication/11748796_The_SEGUE_Framework_for_teaching_and_assessing_communication_skills. Accessed 2019.

	● Symons AB, Swanson A, McGuigan D, Orrange S, Akl EA. A tool for self-assessment of communication skills and professionalism in residents. *BMC Med Educ*. 2009;9:1. https://bmcmededuc.biomedcentral.com/articles/10.1186/1472-6920-9-1. Accessed 2019. ● American Thoracic Society. Sleep Related Questionnaires. http://www.thoracic.org/members/assemblies/assemblies/srn/questionaires/. Accessed 2019.

Interpersonal and Communication Skills 3: Interprofessional and Team Communication **Overall Intent:** To effectively communicate with the health care team, including consultants, in both straightforward and complex situations	
Milestones	**Examples**
Level 1 *Respectfully receives and requests consultations* *Uses language that values all members of the health care team* *Receptive to feedback on performance as a member of the health care team*	● When asking for an otolaryngology consultation for a patient with obstructive sleep apnea, respectfully relays the diagnosis and need to assess the patient's candidacy for hypoglossal nerve stimulation ● Receives consult request for a patient with Down syndrome and suspected obstructive sleep apnea, asks clarifying questions politely, and expresses gratitude for the consult ● Acknowledges the contribution of each member of the sleep medicine team (sleep technologist, respiratory therapist, clinic nurse) to the patient's care
Level 2 *Clearly and concisely responds to and requests consultations* *Communicates information effectively with all health care team members* *Solicits feedback on performance as a member of the health care team*	● Communicates diagnostic evaluation recommendations clearly and concisely in an organized and timely manner ● Sends a message in EHR to the psychiatrist of a patient with insomnia that the patient's anxiety has worsened in recent weeks ● Sleep medicine fellow asks senior technologist for feedback regarding clarity of instructions given on a sleep study order
Level 3 *Assesses understanding of recommendations when providing and receiving consultations* *Uses active listening to adapt communication style to fit health care team needs* *Communicates concerns and provides feedback to peers and learners*	● After a consultation has been completed, communicates with the primary care provider/team to verify they have received and understand the recommendations ● When receiving treatment recommendations from an attending physician, repeats back the plan to ensure understanding ● Respectfully critiques a learner's presentation in clinic and provides suggestions for improvement
Level 4 *Coordinates recommendations from different members of the health care team and consultants to optimize patient care* *Communicates feedback and constructive criticism to supervisors and faculty member*	● Initiates a multidisciplinary meeting to develop a shared care plan for a patient with an inherited craniofacial syndrome and obstructive sleep apnea ● Notifies attending that his/her clinical documentation was placed in the wrong patient's chart
Level 5 *Role models flexible communication strategies that value input from all health care*	● Mediates a conflict resolution between different members of the health care team ● Facilitates regular healthcare team-based feedback in complex situations

team members and consultants, resolving conflict when needed	
Assessment Models or Tools	● Direct observation ● Global assessment ● Multisource feedback ● Simulation ● Medical record (chart) review
Curriculum Mapping	●
Notes or Resources	● Roth CG, Eldin KW, Padmanabhan V, Freidman EM. Twelve tips for the introduction of emotional intelligence in medical education. *Med Teach.* 2018:1-4. https://www.tandfonline.com/doi/full/10.1080/0142159X.2018.1481499. Accessed 2019. ● Green M, Parrott T, Cook G. Improving your communication skills. *BMJ*. 2012;344:e357. https://www.bmj.com/content/344/bmj.e357. Accessed 2019. ● Henry SG, Holmboe ES, Frankel RM. Evidence-based competencies for improving communication skills in graduate medical education: a review with suggestions for implementation. *Med Teach*. 2013;35(5):395-403. https://www.tandfonline.com/doi/full/10.3109/0142159X.2013.769677. Accessed 2019. ● François J. Tool to assess the quality of consultation and referral request letters in family medicine. *Can Fam Physician*. 2011;57(5):574–575. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3093595/. Accessed 2019. ● Fay D, Mazzone M, Douglas L, Ambuel B. A validated, behavior-based evaluation instrument for family medicine residents. *MedEdPORTAL*. 2007. https://www.mededportal.org/publication/622/. Accessed 2019. ● Dehon E, Simpson K, Fowler D, Jones A. Development of the faculty 360. *MedEdPORTAL*. 2015;11:10174. https://www.mededportal.org/publication/10174/. Accessed 2019. ● Lane JL, Gottlieb RP. Structured clinical observations: a method to teach clinical skills with limited time and financial resources. *Pediatrics*. 2000;105(4 Pt 2):973-977. https://www.ncbi.nlm.nih.gov/pubmed/10742358. Accessed 2019. ● Braddock CH III, Edwards KA, Hasenberg NM, Laidley TL, Levinson W. Informed decision making in outpatient practice: time to get back to basics. *JAMA*. 1999;282(24):2313-2320. https://jamanetwork.com/journals/jama/fullarticle/192233. Accessed 2019.

Interpersonal and Communication Skills 4: Communication within Health Care Systems **Overall Intent:** To effectively communicate using a variety of methods	
Milestones	**Examples**
Level 1 *Accurately records information in the patient record in a timely manner* *Safeguards patient personal health information and communicates through appropriate channels as required by institutional policy*	● Documentation is timely and accurate but may include extraneous information ● Shreds patient list after rounds; avoids talking about patients in the elevator ● Identifies institutional and departmental communication hierarchy for concerns and safety issues
Level 2 *Demonstrates organized diagnostic and therapeutic reasoning through notes in the patient record* *Documents required data in formats specified by institutional policy*	● Organized and accurate documentation outlines clinical reasoning that supports the treatment plan ● Uses approved documentation templates for clinical care
Level 3 *Concisely and clearly reports diagnostic and therapeutic reasoning in the patient record in a manner that reflects level of service* *Appropriately selects direct and indirect forms of communication based on context*	● Complex clinical thinking is documented concisely and note contains all required elements for designated level of service ● Calls patient immediately about potentially life-threatening arrhythmia seen on polysomnogram ● Knows when to direct concerns locally, departmentally, or institutionally – appropriate escalation
Level 4 *Communicates anticipatory guidance in the patient record* *Is effective in direct and indirect forms of communication*	● Documentation is consistently accurate, organized, and concise, and frequently incorporates anticipatory guidance ● Fellow talks directly to the senior technologist about a study ordered with a modified protocol to be performed for a complex patient ● Fellow relays feedback to sleep technologists from patients and families
Level 5 *Role models exemplary communication and facilitates secure information sharing within the broader health care system* *Facilitates dialogue regarding systems communication issues among larger community stakeholders*	● Leads a task force established by the hospital QI committee to develop a plan to improve communication between clinics and durable medical equipment companies ● Meaningfully participates in a committee to examine sleep deprivation in trainees and other hospital staff

Assessment Models or Tools	● Direct observation ● Multisource feedback ● Medical record (chart) review
Curriculum Mapping	●
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. Accessed 2019. ● 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. Accessed 2019.

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/