## Ophthalmology Milestones

ACGME International, Inc. (ACGME-I)



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## **Ophthalmology Milestones**

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

## **Understanding Milestone Levels and Reporting**

This document presents the Milestones, which programs use in a semi-annual review of resident or fellow performance, and then report to the ACGME-I. Milestones are knowledge, skills, attitudes, and other attributes for each of the ACGME-I Competencies organized in a developmental framework. The narrative descriptions are targets for resident/fellow performance throughout the educational program.

Milestones are arranged into levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert resident or fellow in the specialty or subspecialty. For each reporting period, the Clinical Competency Committee will review the completed evaluations to select the milestone levels that best describe each learner's current performance, abilities, and attributes for each subcompetency.

These levels *do not* correspond with post-graduate year of education. Depending on previous experience, more junior residents/fellows may achieve higher levels early in their educational program just as more senior residents/fellows may be at a lower level later in their educational program. There is no predetermined timing for a resident or fellow to attain any particular level. Residents and fellows may also regress in achievement of their milestones. This may happen for many reasons, such as over-scoring in a previous review, a disjointed experience in a particular procedure, or a significant act by the resident/fellow.

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

## **Additional Notes**

Level 4 is designed as a graduation *goal* but *does not* represent a graduation *requirement*. Making decisions about readiness for graduation and unsupervised practice is the purview of the program director. Furthermore, Milestones 2.0 include revisions and changes that preclude using the Milestones as a sole assessment in high-stakes decisions. Level 5 is designed to represent an expert resident or fellow whose achievements in a subcompetency are greater than the expectation. Milestones are primarily designed for formative, developmental purposes to support continuous quality improvement for individual learners, education programs, and the specialty. ACGME-I and its partners will continue to evaluate and perform research on the Milestones to assess their impact and value.

Examples are provided for some milestones within this document. Note: The examples are not the required element or outcome; they are provided as a way to share the intent of the element.

Some milestone descriptions include statements about performing independently. These activities must occur in conformance with ACGME-I supervision guidelines as described in the applicable Program Requirements, as well as with institutional and program policies. For example, a resident who performs a procedure independently must, at a minimum, be supervised through oversight.

A Supplemental Guide is also available to provide more context regarding the intent of each subcompetency, as well as examples for each level, assessment methods or tools, and other resources. The Supplemental Guide, like examples contained within the Milestones, is designed only to assist the program director and Clinical Competency Committee; it is not meant to demonstrate any required element or outcome.

The diagram below presents an example set of milestones for one subcompetency in the same format as the ACGME-I Report Worksheet. For each reporting period, a resident's/fellow's performance on the milestones within each subcompetency will be indicated by selecting the Milestones Level that best describes that individual's performance in relation to those milestones.

Systems-Based Practice 1: Patient Safety and Quality Improvement				
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Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of common patient safety events	Identifies system factors that lead to patient safety events	Participates in analysis of patient safety events (simulated or actual)	Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)	Actively engages teams and processes to modify systems to prevent patient safety events
Demonstrates knowledge of how to report patient safety events	Reports patient safety events through institutional reporting systems (simulated or actual)	Participates in disclosure of patient safety events to patients and their families (simulated or actual)	Discloses patient safety events to patients and their families (simulated or actual)	Role models or mentors others in the disclosure of patient safety events
Demonstrates knowledge of basic quality improvement methodologies and metrics	Describes local quality improvement initiatives (e.g., community vaccination rate, infection rate, smoking cessation)	Participates in local quality improvement initiatives	Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project	Creates, implements, and assesses quality improvement initiatives at the institutional or community level
Comments:			Not Yet C	Completed Level 1
Selecting a response box in the middle of a level implies that milestones in that level and in lower levels have been substantially demonstrated.		Selecting a response between levels indica in lower levels have be demonstrated as well milestones in the high	ates that milestones been substantially I as <b>some</b>	

Level 1	Level 2	Level 3	Level 4	Level 5
Acquires relevant problem-focused history, including outside medical records	Performs problem- focused exam with appropriate techniques (e.g., gonioscopy and scleral depression); consistently identifies common abnormalities on examination; may identify subtle findings	Identifies subtle or uncommon examination findings of common disorders and typical or common findings of rarer disorders	Orders and interprets advanced diagnostic tests and imaging procedures according to evidence-based medicine (i.e., when and when not to order testing)	Demonstrates expertise in advanced diagnostic tests and imaging
Performs and documents a comprehensive ophthalmic examination; distinguishes between normal and abnormal findings	Orders, performs, and interprets basic testing (e.g., visual field testing, Optical Coherence Tomography, B-scan)	Interprets unusual findings on routine testing; identifies artifacts; recognizes indications for advanced diagnostic tests and imaging procedures (e.g., specular microscopy, electroretinography)		

Level 1	Level 2	Level 3	Level 4	Level 5
Acquires relevant problem-focused history, including outside medical records  Performs inpatient consultation, with direct supervision	Triages consult requests  Performs a complete examination	Manages consultations (including coordination of care) requiring surgical intervention, including procedural options and timing; requests ophthalmic subspecialty advice, with indirect supervision	Manages consultations (including coordination of care) requiring surgical intervention, including procedural options and timing; requests ophthalmic subspecialty input, with oversight	Oversees the consultation process and manages interdisciplinary systems issues affecting patient care
	Recognizes ophthalmic emergencies and initiates non-surgical treatment plan, with indirect supervision	Manages minor ophthalmic emergencies with non-surgical and surgical treatment, with indirect supervision	Manages complex ophthalmic emergencies with non-surgical and surgical treatment, with oversight	

Patient Care 3: Office-B	ased Procedures			
Level 1	Level 2	Level 3	Level 4	Level 5
Describes essential components of care related to office-based procedures (e.g., informed consent,	Administers anesthesia and performs procedure, with direct supervision	Administers anesthesia and performs procedure, with indirect supervision	Administers anesthesia and performs procedure, with oversight	Incorporates recent advancements in technologies or techniques
indications and contraindications, anesthesia, sterile procedure prep)	Recognizes and manages intra- and post-operative complications, with direct supervision	Manages intra- and post- operative complications, with indirect supervision	Manages intra- and post-operative complications, with oversight	
Comments:				completed Level 1

Level 1	Level 2	Level 3	Level 4	Level 5
Identifies visually significant cataract	Assesses patients for routine cataract surgery	Assesses patients for complex cataract surgery	Assesses patients who are candidates for refractive intraocular lenses to correct astigmatism and/or provide near correction	Assesses patients for intraocular lens complications requiring a more complex intervention
Demonstrates ability to scrub, prep, and drape patient for surgery; performs basic suturing skills	Performs elements of cataract surgery in the hands-on surgical skills laboratory and in the operating room (OR)	Performs routine cataract surgery in the OR	Performs cataract surgery requiring complex technical maneuvers (e.g., pupil expander, capsular tension ring)	Performs lens surgery for patients with complications requiring a more complex intervention (e.g., sutured intraocular lenses)
	Manages common post- operative complications (e.g., post-operative pain, high intraocular pressure)	Manages common intra- and post-operative complications (e.g., posterior capsule rupture, wound leak)	Manages complex intra- and post-operative complications (e.g., endophthalmitis)	Manages rare and complex intra- and post-operative complications (e.g., aqueous misdirection, suprachoroidal hemorrhage)

Level 1	Level 2	Level 3	Level 4	Level 5
	Identifies patients for routine extraocular surgery	Develops a pre-operative plan for routine extraocular surgery	Develops a pre- operative plan for complex extraocular surgery	Assess patients and develops a pre-operative plan for complex/ multidisciplinary extraocular surgery (e.g., nerve sheath decompression, vessel-sparing strabismus)
Demonstrates ability to scrub, prep, and drape patient for surgery; performs basic suturing skills	Performs simple extraocular surgery (e.g., simple lid laceration repair, nasolacrimal duct probing)	Performs routine extraocular surgery (e.g., complex lid laceration repair, horizontal strabismus, ptosis)	Performs complex extraocular surgery (e.g., vertical strabismus), with assistance	Performs complex extraocular surgery
Identifies common post- operative complications (e.g., post-operative pain, bleeding)	Manages common post- operative complications	Manages intra- and post- operative complications (e.g., bleeding, perforation)	Manages complex intra- and post-operative complications (e.g., infection, retrobulbar hemorrhage)	

Patient Care 6: Intraocular Surgery (Cornea, Retina, Glaucoma)				
Level 1	Level 2	Level 3	Level 4	Level 5
	Assesses patients for routine intraocular surgery	Assesses patients for complex intraocular surgery	Assesses patients for multispecialty intraocular surgeries	Assess patients requiring surgery from multiple disciplines (e.g., plastic surgery, facial trauma)
Demonstrates ability to scrub, prep, and drape patient for surgery; performs basic suturing skills	Performs routine intraocular surgery in the hands-on surgical skills laboratory	Assists in subspecialty intraocular surgery	Performs routine intraocular surgery	Performs complex intraocular surgery
	Manages common post- operative complications (e.g., post-operative pain, high intraocular pressure)	Manages common intra- operative complications (e.g., flat chamber, wound leak, hyphema)	Manages complex intra- and post-operative complications (e.g., re- bubble graft, blebitis)	Manages rare and complex intra- and post-operative complications (e.g., tube erosion, proliferative vitreoretinopathy)
Comments:			Not Yet C Not Yet A	ompleted Level 1 ssessable

Medical Knowledge 1: Pa			1	
Level 1  Articulates knowledge of pathophysiology and clinical findings for ophthalmic conditions routinely managed by non-ophthalmologists	Level 2  Demonstrates basic knowledge of pathophysiology and clinical findings for common ophthalmic conditions routinely managed by ophthalmologists	Level 3  Demonstrates advanced knowledge of pathophysiology and clinical findings for commonly encountered ophthalmic conditions; demonstrates basic knowledge of pathophysiology and clinical findings for uncommon conditions	Level 4  Demonstrates advanced knowledge of pathophysiology and clinical findings for uncommon ophthalmic conditions	Level 5  Contributes new knowledge for pathophysiology and clinical findings for ophthalmic conditions (e.g., publication, curriculum development)
Comments:				completed Level 1 ssessable

Medical Knowledge 2: Differential Diagnosis				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies resources to generate a focused differential diagnosis	Generates comprehensive differential diagnosis based on patient symptoms and history; documents and presents differential diagnosis in oral presentation clearly and concisely	Generates refined differential diagnosis based on patient symptoms, history, and examination findings, distinguishing between common and uncommon conditions	Generates probabilistic differential diagnosis in patients with multiple ocular and medical comorbidities; modifies likely differential diagnosis with new information from additional testing	Recognizes, self-reflects, and shares experiences to educate others on factors that contributed to missed diagnosis or faulty clinical reasoning (e.g., publication, curriculum development)
Generates a basic differential diagnosis based on patient symptoms and history	Describes diagnostic tests to aid in the differential diagnosis	Selects additional diagnostic testing to distinguish between conditions on the differential diagnosis	Articulates the rationale for ordering diagnostic testing in hierarchical fashion based upon probabilistic differential diagnosis	
Comments:			Not Yet C Not Yet A	ompleted Level 1

Level 1	Level 2	Level 3	Level 4	Level 5
Describes basic concepts of ophthalmic pathophysiology and pharmacology	Explains relevant pathophysiology and lists indications and contraindications for planned medical therapy	Identifies and describes side effects of medical therapies and ways to minimize potential complications	Describes and articulates the rationale for using emerging alternative medical therapies	Participates in the development and dissemination of novel therapies or interventions
Describes basic ophthalmic anatomy and categories of procedural interventions	Explains indications, contraindications, and relevant steps required for procedural intervention (e.g., anesthesia, technique, instruments)	Identifies and describes causes of complications and alternatives for routine procedural interventions	Describes and articulates the rationale for using novel alternative procedural interventions	
Comments:			Not Yet C Not Yet A	ompleted Level 1

Systems-Based Practice	1: Patient Safety and Qual	ity Improvement		
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of common patient safety events	Identifies system factors that lead to patient safety events	Participates in analysis of patient safety events (simulated or actual)	Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)	Actively engages teams and processes to modify systems to prevent patient safety events
Demonstrates knowledge of how to report patient safety events	Reports patient safety events through institutional reporting systems (simulated or actual)	Participates in disclosure of patient safety events to patients and their families (simulated or actual)	Discloses patient safety events to patients and their families (simulated or actual)	Role models or mentors others in the disclosure of patient safety events
Demonstrates knowledge of basic quality improvement methodologies and metrics	Describes local quality improvement initiatives (e.g., community vaccination rate, infection rate, smoking cessation)	Participates in local quality improvement initiatives	Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project	Creates, implements, and assesses quality improvement initiatives at the institutional or community level
Comments:			Not Yet C	ompleted Level 1

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of care coordination	Coordinates care of patients in routine clinical situations, effectively utilizing the roles of the interprofessional teams	Coordinates care of patients in complex clinical situations, effectively utilizing the roles of the interprofessional teams	Role models effective coordination of patient- centered care among different disciplines and specialties	Analyzes the process of care coordination and leads in the design and implementation of improvements
Identifies key elements for safe and effective transitions of care and hand-offs	Performs safe and effective transitions of care/hand-offs in routine clinical situations	Performs safe and effective transitions of care/hand-offs in complex clinical situations	Role models and advocates for safe and effective transitions of care/hand-offs within and across health care delivery systems, including outpatient settings	Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes

Level 1	Level 2	Level 3	Level 4	Level 5
Identifies key components of the complex health care system (e.g., hospital, skilled nursing facility, finance, personnel, technology)	Describes how components of a complex health care system are interrelated, and how this impacts patient care	Discusses how individual practice affects the broader system (e.g., length of stay, readmission rates, clinical efficiency)	Manages various components of the complex health care system to provide efficient and effective patient care and transition of care	Advocates for or leads systems change that enhances high value, efficient, and effective patient care and transition of care
Describes the principles of cost-effective care	Delivers care with consideration of each patient's payment model	Engages with patients in shared decision making, informed by cost-effective care principles	Advocates for patient care needs (e.g., community resources, patient assistance resources) regardless of ability to pay	Participates in health policy advocacy activities

Practice-Based Learning	and Improvement 1: Evide	ence-Based and Informed P	ractice	
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates how to access and use available evidence, and incorporate patient preferences and values in order to take care of a routine patient	Articulates clinical questions and elicits patient preferences and values in order to guide evidence-based care	Locates and applies the best available evidence, integrated with patient preference, to the care of complex patients	Critically appraises and applies evidence, even in the face of uncertainty and conflicting evidence, to guide care tailored to the individual patient	Coaches others to critically appraise and apply evidence for complex patients, and/or participates in the development of guidelines
Comments:			Not Yet C	ompleted Level 1

Practice-Based Learning	and Improvement 2: Refle	ctive Practice and Commit	ment to Personal Growth		
Level 1	Level 2	Level 3	Level 4	Level 5	
Accepts responsibility for personal and professional development by establishing goals	Demonstrates openness to performance data (feedback and other input) in order to inform goals	Seeks performance data episodically, with adaptability and humility	Intentionally seeks performance data consistently, with adaptability and humility	Role models consistently seeking performance data with adaptability and humility	
Identifies the factors which contribute to gap(s) between expectations and actual performance	Analyzes and reflects on the factors which contribute to gap(s) between expectations and actual performance	Analyzes, reflects on, and institutes behavioral change(s) to narrow the gap(s) between expectations and actual performance	Challenges assumptions and considers alternatives in narrowing the gap(s) between expectations and actual performance	Coaches others on reflective practice	
Actively seeks opportunities to improve	Designs and implements a learning plan, with prompting	Independently creates and implements a learning plan	Uses performance data to measure the effectiveness of the learning plan and, when necessary, improves it	Facilitates the design and implementation of learning plans for others	
Comments:	Comments:  Not Yet Completed Level 1				

Level 1	Level 2	Level 3	Level 4	Level 5
Identifies and describes potential triggers for professionalism lapses	Demonstrates insight into professional behavior in routine situations	Demonstrates professional behavior in complex or stressful situations	Recognizes situations that may trigger professionalism lapses and intervenes to prevent lapses in self and others	Coaches others when their behavior fails to meet professional expectations
Describes when and how to appropriately report professionalism lapses, including strategies for addressing common barriers	Takes responsibility for own professionalism lapses	Recognizes need to seek help in managing and resolving complex ethical situations	Recognizes and utilizes appropriate resources for managing and resolving ethical dilemmas as needed (e.g., ethics consultations, literature	Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their
Demonstrates knowledge of the ethical principles underlying informed consent, surrogate decision making, advance directives, confidentiality, error disclosure, stewardship of limited resources, and related topics	Analyzes straightforward situations using ethical principles	Analyzes complex situations using ethical principles	review, risk management/legal consultation)	resolution

_evel 1	Level 2	Level 3	Level 4	Level 5
Takes responsibility for failure to complete tasks and responsibilities, dentifies potential contributing factors, and describes strategies for ensuring timely task completion in the future	Performs tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations	Performs tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations	Recognizes situations that may impact others' ability to complete tasks and responsibilities in a timely manner	Takes ownership of system outcomes
Responds promptly to requests or reminders to complete tasks and responsibilities	Recognizes situations that may impact own ability to complete tasks and responsibilities in a timely manner	Proactively implements strategies to ensure that the needs of patients, teams, and systems are met		

Professionalism 3: Self-Awareness and Help-Seeking					
Level 1	Level 2	Level 3	Level 4	Level 5	
Recognizes status of personal and professional well-being, with assistance	Independently recognizes status of personal and professional well-being	With assistance, proposes a plan to optimize personal and professional well-being	Independently develops a plan to optimize personal and professional well-being	Coaches others when emotional responses or limitations in knowledge/ skills do not meet professional expectations	
Recognizes limits in the knowledge/skills of self or team, with assistance	Independently recognizes limits in the knowledge/ skills of self or team and demonstrates appropriate help-seeking behaviors	With assistance, proposes a plan to remediate or improve limits in the knowledge/skills of self or team	Independently develops a plan to remediate or improve limits in the knowledge/skills of self or team		
Comments:			Not Yet C	ompleted Level 1	

Level 1	Level 2	Level 3	Level 4	Level 5
Uses language and nonverbal behavior to demonstrate respect and establish rapport	Establishes a therapeutic relationship in straightforward encounters using active listening and clear language	Establishes a therapeutic relationship in challenging patient encounters	Easily establishes therapeutic relationships, with attention to patient/ family concerns and context, regardless of complexity	Mentors others in situational awareness and critical self-reflection to consistently develop positive therapeutic relationships
Identifies common barriers to effective communication (e.g., language, disability) while accurately communicating own role within the health care system	Identifies complex barriers to effective communication (e.g., health literacy, cultural)	When prompted, reflects on personal biases while attempting to minimize communication barriers	Independently recognizes personal biases while attempting to proactively minimize communication barriers	Role models self- awareness while identifying a contextual approach to minimize communication barriers
Identifies the need to adjust communication strategies based on assessment of patient/family expectations and understanding of their health status and treatment options	Organizes and initiates communication with patient/family by introducing stakeholders, setting the agenda, clarifying expectations, and verifying understanding of the clinical situation	With guidance, sensitively and compassionately delivers medical information, elicits patient/ family values, goals, and preferences, and acknowledges uncertainty and conflict	Independently, uses shared decision making to align patient/family values, goals, and preferences with treatment options to make a personalized care plan	Role models shared decision making in patient/family communication, including those with a high degree of uncertainty/conflict

Interpersonal and Comm	nunication Skills 2: Interpro	fessional and Team Comm	unication	
Level 1	Level 2	Level 3	Level 4	Level 5
Respectfully requests a consultation	Clearly and concisely requests a consultation	Checks own understanding of consultant recommendations	Coordinates recommendations from different members of the health care team to optimize patient care	Role models flexible communication strategies that value input from all health care team members, resolving conflict when needed
Respectfully receives a consultation request	Clearly and concisely responds to a consultation request	Checks understanding of recommendations when providing consultation		
Uses language that values all members of the health care team	Communicates information effectively with all health care team members	Uses active listening to adapt communication style to fit team needs		
	Solicits feedback on performance as a member of the health care team	Communicates concerns and provides feedback to peers and learners	Communicates feedback and constructive criticism to superiors	Facilitates regular health care team-based feedback in complex situations
Comments:			Not Yet C	ompleted Level 1

Level 1	Level 2	Level 3	Level 4	Level 5
Accurately records information in the patient record	Demonstrates organized diagnostic and therapeutic reasoning through notes in the patient record	Concisely reports diagnostic and therapeutic reasoning in the patient record	Communicates clearly, concisely, timely, and in an organized written form, including anticipatory guidance	Models feedback to improve others' written communication
Safeguards patient personal health information	Demonstrates accurate, timely, and appropriate use of documentation shortcuts  Documents required data in formats specified by institutional policy	Appropriately selects direct (e.g., telephone, inperson) and indirect (e.g., progress notes, text messages) forms of communication based on context	Achieves written or verbal communication (e.g., patient notes, email) that serves as an example for others to follow	Guides departmental or institutional communication around policies and procedures
Communicates through appropriate channels as required by institutional policy (e.g., patient safety reports, cell phone/pager usage)	Respectfully communicates concerns about the system	Uses appropriate channels to offer clear and constructive suggestions to improve the system	Initiates difficult conversations with appropriate stakeholders to improve the system	Facilitates dialogue regarding systems issues among larger community stakeholders (institution, health care system, field)