

# The Micrographic Surgery and Dermatologic Oncology Milestone Project

*A Joint Initiative of*

The Accreditation Council for Graduate Medical Education

and

The American Board of Dermatology



July 2015

# The Micrographic Surgery and Dermatologic Oncology Milestone Project

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

**Micrographic Surgery and Dermatologic Oncology Milestones**

**Chair: John A. Zitelli, MD**

**Working Group**

Christopher J. Arpey, MD

David G. Brodland, MD

Laura Edgar, EdD, CAE

Allison T. Vidimos

**Advisory Group**

Thomas D. Horn, MD

Mary Lieh-Lai, MD

Nicole M. Owens, MD

## Milestone Reporting

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

For each period, review and reporting will involve selecting milestone levels that best describe each fellow's current performance and attributes. Milestones are arranged into numbered levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert in the subspecialty. These levels do not correspond with post-graduate year of education.

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

**Level 1:** The fellow demonstrates milestones expected of an incoming fellow.

**Level 2:** The fellow is advancing and demonstrates additional milestones, but is not yet performing at a mid-fellowship level.

**Level 3:** The fellow continues to advance and demonstrate additional milestones, consistently including the majority of milestones targeted for fellowship.

**Level 4:** The fellow has advanced so that he or she now substantially demonstrates the milestones targeted for fellowship. This level is designed as the graduation target.

**Level 5:** The fellow has advanced beyond performance targets set for fellowship and is demonstrating "aspirational" goals which might describe the performance of someone who has been in practice for several years. It is expected that only a few exceptional fellows will reach this level.

## **Additional Notes**

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

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

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

*Answers to Frequently Asked Questions about the Next Accreditation System and Milestones are posted on the Next Accreditation System section of the ACGME website.*

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

Patient Care — Mohs Surgery				
Level 1	Level 2	Level 3	Level 4	Level 5
With direct supervision, performs simple first layer Mohs surgery with complete intact specimens	With moderate supervision, performs first and subsequent layers of Mohs surgery of moderate complexity	With minimal supervision, performs first and subsequent layers of Mohs surgery of moderate complexity	Independently performs first and subsequent layers of Mohs surgery of moderate and high complexity	Independently performs Mohs surgery for extremely complex cases (e.g., tumor invading very deep tissue, multiply recurrent) in special sites (e.g., acral, genital, eyelid)
With direct supervision, creates a basic map and performs subdivision and inking of tissue specimen	With moderate supervision, creates complex maps and performs intricate subdivision and inking of tissue specimens	With minimal supervision, creates complex maps and performs intricate subdivision and inking of tissue specimens	With minimal supervision, performs deep tissue layers of Mohs surgery, including cartilage, muscle, and bone	
			Independently creates complex maps and performs intricate tissue subdivision and inking of tissue specimens	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not yet achieved Level 1 <input type="checkbox"/>

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

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

Patient Care 1 — Mohs Surgery				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>With direct supervision, performs simple first layer Mohs surgery with complete intact specimens</p> <p>With direct supervision, creates a basic map and performs subdivision and inking of tissue specimen</p>	<p>With moderate supervision, performs first and subsequent layers of Mohs surgery of moderate complexity</p> <p>With moderate supervision, creates complex maps and performs intricate subdivision and inking of tissue specimens</p>	<p>With minimal supervision, performs first and subsequent layers of Mohs surgery of moderate complexity</p> <p>With minimal supervision, creates complex maps and performs intricate subdivision and inking of tissue specimens</p>	<p>Independently performs first and subsequent layers of Mohs surgery of moderate and high complexity</p> <p>With minimal supervision, performs deep tissue layers of Mohs surgery, including cartilage, muscle, and bone</p> <p>Independently creates complex maps and performs intricate tissue subdivision and inking of tissue specimens</p>	<p>Independently performs Mohs surgery for extremely complex cases (e.g., tumor invading very deep tissue, multiply recurrent) in special sites (e.g., acral, genital, eyelid)</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Patient Care 2 — Reconstruction				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>With direct supervision, performs simple and intermediate repairs</p> <p>Applies knowledge of wound healing</p> <p>With direct supervision manages minor surgical emergencies (e.g., intra-operative bleeding, vagal reactions)</p>	<p>Offers appropriate options for wound management, including second intention healing and reconstruction</p> <p>With moderate supervision, performs complex repairs and simple skin grafts</p> <p>During medical emergencies, competently implements basic life support measures under direct supervision</p> <p>Recognizes acute complications (e.g., bleeding, infection)</p>	<p>Selects most appropriate wound repair option</p> <p>With moderate supervision, performs complex flaps and grafts</p> <p>Aware of the impact of patient comorbidities and social circumstances in managing wounds</p> <p>Manages acute complications</p> <p>Recognizes long-term complications (e.g., scar contraction, functional deficit, nerve damage)</p>	<p>Independently uses advanced suturing techniques and performs complex, large, and two stage flap repairs and grafts</p> <p>Consistently considers patient comorbidities and social circumstances in managing wounds</p> <p>During medical emergencies, competently implements basic life support measures</p> <p>Manages acute and long-term complications, including appropriate specialty referral</p>	<p>Independently designs and performs innovative reconstructive techniques</p> <p>Independently treats many long-term complications</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>



Patient Care 3 — Mohs Histopathology				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies normal structures and simple tumors histopathologically  With direct supervision, mounts, freezes, and orients tissue specimens	Identifies normal structures, artifacts, and simple tumors on frozen section  With minimal supervision, cuts and stains a frozen section on simple tissue	Identifies normal variants and less common tumors on frozen section  Reaches significant concordance with faculty in interpretation of frozen sections  Independently prepares frozen section slides, including difficult tissue (e.g., fat, cartilage)	Identifies unexpected findings, and rare and unusual tumors on frozen section  Reaches near complete concordance with faculty in interpretation of frozen sections  Achieves competence to manage a frozen section laboratory and prepare for laboratory accreditation	Competent in the use of immunohistochemical stains  Creates innovative tests or techniques in Mohs histopathology
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Patient Care 4 — Diagnosis and Management				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies common malignant and pre-malignant lesions	Identifies many malignant and pre-malignant lesions and performs appropriate confirmatory diagnostic tests or procedures  Aware of the adjuvant therapy options for high-risk malignancies	Identifies majority of malignant lesions (basal cell carcinoma, squamous cell carcinoma, melanoma), including uncommon clinical variants  Considers referrals for diagnostic testing, adjuvant therapy options or peri-operative co-management  Identifies patients who may benefit from chemoprophylaxis for cutaneous malignancy  Recognizes the impact of various comorbidities (e.g., immunosuppression, syndromes) on cutaneous malignancies	Identifies rare and unusual malignant lesions (e.g., angiosarcoma, Merkel cell carcinoma, dermatofibrosarcoma protuberans)  Appropriately refers patients for adjuvant therapy (e.g., radiation therapy, chemotherapy, nodal dissection)  Designs appropriate treatment plans for patients with multiple tumors, locally advanced tumors, syndromes, and comorbidities	Designs and completes a research project which results in alteration in the diagnosis and/or treatment of cutaneous malignancy
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Medical Knowledge 1 — Mastery of Dermatologic Surgical Curriculum				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Demonstrates basic knowledge of wound healing, basic surgical anatomy, local anesthesia, universal precautions, sterile technique, closure materials, laser physics, and applications</p> <p>Demonstrates knowledge of the methodology and science associated with invasive cosmetic dermatologic procedures, such as laser resurfacing, hair transplantation, and liposuction</p> <p>Demonstrates knowledge of the concepts and principles of non-invasive cosmetic procedures, such as botulinum toxin injections, soft tissue augmentation, and some light-based therapies</p>	<p>Demonstrates practical understanding of learned concepts, such as appropriate use of prophylactic antibiotics, tissue biomechanics, electrical and cryosurgery, and surgical instruments, as well as the ability to apply these to patient care</p> <p>Recognizes potential relevant drug reactions and interactions related to dermatologic surgery</p>	<p>Utilizes medical knowledge and synthesizes ways to apply it in clinical settings</p>	<p>Demonstrates comprehensive knowledge of dermatologic surgery</p>	<p>Develops and performs a well-designed, patient-oriented clinical trial, or develops or refines a novel treatment method</p> <p>Develops and implements a new surgical curriculum, or significantly updates and modifies the surgical curriculum for a dermatology residency program or micrographic surgery and dermatologic oncology fellowship</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Medical Knowledge 2 — Mastery of Cutaneous Oncologic Curriculum				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Demonstrates basic knowledge of cutaneous oncologic surgery and evidence of self-learning and participation in didactic sessions</p> <p>Demonstrates knowledge of tumor biology of common skin malignancies</p>	<p>Demonstrates practical understanding of learned concepts and the ability to apply it to patient care</p> <p>Demonstrates understanding of specific gene defects as they relate to cutaneous oncology</p> <p>Demonstrates understanding of the role of and indications for physical, pharmacologic, biologic, and immunologic agents for cutaneous malignancies</p>	<p>Synthesizes clinical judgment and surgical approaches or techniques based on fund of knowledge</p> <p>Demonstrates knowledge of tumor biology of uncommon and high-risk skin malignancies</p> <p>Demonstrates understanding of mechanism of metastases</p> <p>Demonstrates understanding of the appropriate use for physical, pharmacologic, biologic, and immunologic agents for cutaneous malignancies</p>	<p>Demonstrates comprehensive knowledge of clinical diagnosis, biology, and pathology of skin tumors, as well as laboratory interpretation related to diagnosis and surgical treatment</p> <p>Demonstrates mastery of tumor biology of uncommon and high-risk skin malignancies</p> <p>Appropriately prescribes or refers for therapy using physical, pharmacologic, biologic, and immunologic agents for cutaneous malignancies</p>	<p>Performs a meta-analysis of a complex topic in cutaneous oncologic surgery</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Systems-based Practice 1 — Practices Cost-Conscious Care (for Patients and Populations)				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Articulates awareness of health care costs</p> <p>Aware of “Appropriate Use Criteria” for Mohs surgery</p>	<p>Demonstrates knowledge of how a patient's health care is paid for, and how this affects the patient's care</p> <p>Considers cost and efficacy of Mohs surgery and alternative therapies, and incorporates this into therapy decisions and discussions with the patient</p> <p>Attempts to identify excess resource utilization and wastage, and to reduce this when possible</p> <p><b>Consistently</b> applies principles of coding (ICD-9/10) and reimbursement (Evaluation and Management levels/CPT) appropriate to medical record documentation</p>	<p>Articulates awareness of common socio-economic barriers that impact patient care</p> <p>Articulates understanding of how cost-benefit analysis is applied to patient care (e.g., principles of screening tests and the development of clinical guidelines)</p> <p>Identifies the role of various health care stakeholders, including providers, third-party payers, pharmaceutical industry and medical device companies, and their varied impact on the cost of and access to health care</p> <p>Consistently applies “Appropriate Use Criteria” for Mohs surgery</p>	<p>Articulates an awareness of current debates/issues of health care financing and how they will affect patients, providers, third-party payers, and other stakeholders</p> <p>Identifies inherent biases of interactions with pharmaceutical and medical device industries</p> <p>Demonstrates the incorporation of cost-awareness principles into standard clinical judgments and decision-making</p>	<p>Demonstrates the incorporation of cost-awareness principles into complex clinical scenarios</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Systems-based Practice 2 — Works Effectively within an Inter-professional Team				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies members of the team who coordinate patient care  Describes own role as a member of the health care team  Utilizes and consults with other health care providers in coordination of patient care	Appropriately communicates and coordinates care with the primary care and/or referral provider(s)  Describes unique contributions (knowledge, skills, and attitudes) of other health care professionals, and seeks their input for appropriate issues  Facilitates checklist-guided briefings (for example pre-procedure time-outs) in health care activities	Delegates tasks appropriately to members of the health care team  Attends and contributes to academic department/division retreats (or similar organizational venue), as well as to clinic team/staff meetings at participating sites	Demonstrates how to manage, utilize, and coordinate the inter-professional team (e.g., tumor board)  Participates in an inter-professional team meeting for clinic or program improvement	Leads an inter-professional team
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Practice-based Learning and Improvement 1 — Appraises and Assimilates Scientific Evidence				
Level 1	Level 2	Level 3	Level 4	Level 5
Without being directed, accesses appropriate print or electronic resources to find multidisciplinary medical information requested or assigned	Actively seeks appropriate resources to find medical information to answer clinical questions without being requested or assigned this task	Applies a set of critical appraisal criteria to different types of research, including synopses of original research findings, systematic reviews, meta-analyses, and clinical practice guidelines	Incorporates principles and basic practices of evidence-based practice and information mastery into clinical practice	Independently teaches and assesses evidence-based medicine and information mastery techniques
Navigates electronic databases of indexed citations and abstracts to medical sciences journal articles	Identifies critical threats to study validity and generalizability when reading a research paper or study synopsis	Critically evaluates information from others, including colleagues, experts, industry representatives, and patients	Identifies alternative resources to answer clinical questions (i.e., microbiology lab director, Evaluation and Management coding guidelines, Medicare policies, Centers for Disease Control and Prevention [CDC] reporting requirements)	Cites evidence supporting several common practices in his or her practice
Describes <b>basic</b> concepts in clinical epidemiology, biostatistics, and clinical reasoning, and can categorize the study design of a research study	Identifies well-conducted research that impacts patient care	Summarizes complex medical topics through effective information synthesis and presentation of material within time allotted	Prepares a manuscript for submission to peer-reviewed publication	
Provides appropriate reference lists for prepared hand-outs or other program-specific assignments	Actively participates by leading article review discussion and by asking appropriate questions during journal club/journal review activities			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Practice-based Learning and Improvement 2 — Integrates Quality Improvement Concepts and Activities in Practice				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Has a basic understanding of the health care delivery systems and how improvements may be made</p> <p>Identifies the basic processes involved in quality improvement</p>	<p>Identifies deviations from standards of care (for example, identifies when guidelines of care were not followed, and when over- or under-utilization of diagnostic testing and therapy has occurred)</p> <p>Participates in quality improvement activities</p> <p>Identifies some stakeholders involved in quality gaps</p>	<p>Reviews local gaps in quality, and identifies systems and human errors that contribute to gaps in quality</p> <p>Critically appraises current or proposed quality improvement interventions</p> <p>Defines and constructs process and outcome measures</p>	<p>Assesses outcomes of quality improvement efforts (e.g., infection control, medication errors, surgical site identification), and applies these towards continuous quality improvement</p>	<p>Develops and implements a major quality control and/or quality improvement initiative, and demonstrates improvement in care and/or savings in health care costs</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>



Professionalism 1 — Giving and Receiving Feedback				
Level 1	Level 2	Level 3	Level 4	Level 5
Receives feedback constructively	Accepts feedback constructively and modifies practice in response to feedback	Provides constructive feedback	Exemplifies giving and receiving constructive feedback; encourages and actively seeks feedback to improve performance	Models giving and receiving constructive feedback; encourages and actively seeks feedback to improve performance
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Professionalism 2 — Accountability, Honesty, and Integrity				
Level 1	Level 2	Level 3	Level 4	Level 5
Completes assigned tasks on time  Behaves honestly and understand the concepts of ethical behavior; seeks counsel when ethical questions arise	Dependably completes assigned tasks in a timely manner; assists team members when requested; respects assigned schedules  Acknowledges personal near misses and errors, and putting the needs of patients first; engages in ethical behavior	Anticipates team needs and steps in to assist as needed  Demonstrates honesty with all members of the health care team  Identifies, communicates, and corrects errors	Anticipates team needs and takes leadership role to independently implement solutions  Is viewed by members of the health care team as a role model in accepting personal responsibility, and in always putting the needs of the patient above his/her own interests	Exemplifies effective management of multiple competing tasks, with reliable follow up; is source of support/guidance to other members of health care team
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Interpersonal Communication and Skills 1 — Personnel and Conflict Management				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Understands the challenge in managing clinical, clerical, and laboratory personnel (e.g., competency assessment, performance evaluation)</p> <p>Understands the importance of conflict management</p>	<p>With substantial guidance, manages clinical, clerical, and laboratory personnel</p> <p>With substantial guidance, manages conflicts and complaints</p> <p>Understands the importance of personal emotional awareness and empathy and its impact on team members</p>	<p>With minimal guidance, manages clinical, clerical, and laboratory personnel</p> <p>With minimal guidance, manages conflicts and complaints</p> <p>Understands the importance of a collegial and respectful atmosphere among all team members</p>	<p>Independently manages clinical, clerical, and laboratory personnel</p> <p>Independently manages conflicts and complaints</p> <p>Fosters a collegial and respectful atmosphere among all team members</p>	<p>Develops job descriptions and competency assessments for clinical, clerical, and laboratory personnel</p> <p>Teaches concepts of emotional intelligence and team building</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>

Interpersonal and Communication Skills 2 — Communicates with Patients, Families, and Health Care Providers				
Level 1	Level 2	Level 3	Level 4	Level 5
Understands the importance of timely and effective communication with patients, families, and health care providers	With minimal guidance, provides timely and effective communication with patients, families, and health care providers	Independently provides timely and effective communication with patients, families, and health care providers	Empathetically communicates complex, difficult, or challenging information (e.g., errors, complications, adverse events, and bad news)	Serves as a role model for effective, compassionate, and professional communication to patients and health care providers
Understands the importance of empathy in the communication related to potential disfigurement or life threatening situations	Treats patients with dignity, civility, and respect regardless of race, culture, gender, ethnicity, age, sexual orientation or socio-economic status	Independently produces a clear and understandable written clinical and operative reports		
Understands the importance of privacy and confidentiality	With minimal guidance, produces a clear and understandable written clinical and operative reports			
Effectively utilizes the electronic health record				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>				Not yet achieved Level 1 <input type="checkbox"/>