# Craniofacial Plastic Surgery Milestones

The Accreditation Council for Graduate Medical Education



Implementation: July 2022 Second Revision: September 2021 First Revision: September 2013

## Craniofacial Plastic Surgery Milestones

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.

### **Craniofacial Plastic Surgery Milestones**

#### **Work Group**

Emma Cordes, MD

Robert Havlik, MD

Laura Edgar, EdD, CAE

Aditi Kanth, MD

Arun Gosain, MD

Kant Lin, MD

Jordan Halsey, MD

Jack Yu, DMD, MD, MSEd

The ACGME would like to thank the following organizations for their continued support in the development of the Milestones:

American Board of Plastic Surgery

ACGME Review Committee for Plastic Surgery

#### **Understanding Milestone Levels and Reporting**

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

Milestones are arranged into levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert 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, a junior fellow may achieve higher levels early in his/her educational program just as a senior fellow may be at a lower level later in his/her educational program. There is no predetermined timing for a fellow to attain any particular level. 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 fellow.

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

#### **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 Milestones as a sole assessment in high-stakes decisions (i.e., determination of eligibility for certification or credentialing). Level 5 is designed to represent an expert 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. The ACGME 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. Please 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 conformity to ACGME supervision guidelines as described in the Program Requirements, 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.

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

Supplemental Guides and other resources are available on the Milestones page of each specialty section of the ACGME website. On <a href="https://www.acgme.org">www.acgme.org</a>, choose the applicable specialty under the "Specialties" menu, then select the "Milestones" link in the lower navigation bar.

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.

Systems-Based Practice 1: Patient Safety and Quality 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 patients' families (simulated or actual)	Discloses patient safety events to patients and patients' 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., infection rate)	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 Completed Level 1				
Selecting a response	onse box in the	Selecting a response	box on the line in	
middle of a level	-	between levels indica		
	it level and in lower	in lower levels have l	•	
levels have beer demonstrated.	i substantially	demonstrated as well milestones in the hig		

Patient Care 1: Oro-Facial Clefting				
Level 1	Level 2	Level 3	Level 4	Level 5
Develops a treatment plan for simple oro-facial clefting, with assistance (e.g., cleft lip)	Develops a treatment plan for a moderate oro-facial clefting (e.g., cleft palate)	Develops a treatment plan for moderately complex oro-facial clefting (e.g., secondary management of velopharyngeal insufficiency (VPI))	Develops a treatment plan for complex oro- facial clefting (e.g., secondary management of cleft nasal deformity)	Develops a treatment plan for uncommon complex oro-facial clefting (e.g., Tessier clefts)
Performs simple procedures for oro-facial clefting with significant guidance	Performs procedures for simple oro-facial clefting with guidance	Performs moderately complex procedures for oro-facial clefting with minimal guidance	Performs complex procedures for oro-facial clefting without guidance	Performs uncommon complex procedures for oro-facial clefting
Manages simple complications	Identifies and formulates a plan for complications requiring surgical management	Performs surgical management for routine complications	Performs surgical management for complex complications	Performs reconstructive surgery following initial management of complications
Comments:				completed Level 1 ssessable

Patient Care 2: Craniosy	nostosis			
Level 1	Level 2	Level 3	Level 4	Level 5
Develops treatment plan for the management of deformational and synostotic skull deformities	Develops a treatment plan for non-syndromic craniosynostosis	Develops a treatment plan for syndromic craniosynostosis (e.g., without multisystem manifestations)	Develops a treatment plan for syndromic, multisystem craniosynostosis – non- life-threatening (e.g., proptosis)	Develops a treatment plan for syndromic, multisystem craniosynostosis – life- threatening (e.g., airway compromise)
Performs simple procedures for simple non-syndromic craniosynostosis with significant guidance	Performs procedures for simple non-syndromic craniosynostosis with guidance	Performs moderately complex procedures for syndromic craniosynostosis with minimal guidance	Performs complex procedures for syndromic, multisystem craniosynostosis – non-life-threatening with no guidance	Performs uncommon complex procedures for syndromic, multisystem craniosynostosis – life- threatening
Identifies simple complications	Formulates a plan for complications requiring surgical management	Performs surgical management for routine complications	Performs surgical management for complex complications	Performs reconstructive surgery following initial management of complications
Comments:				ompleted Level 1 Ssessable

Patient Care 3: Craniomaxillofacial (e.g., orthognathic procedures, facial distraction, facial fractures)				
Level 1	Level 2	Level 3	Level 4	Level 5
Develops a treatment plan for the management of routine facial trauma (e.g., mandible fractures)	Develops a treatment plan for complex facial trauma (e.g., pan facial fractures, naso-orbitoethmoid (NOE) fractures)	Develops a treatment plan for simple craniomaxillofacial deformities (e.g., post- palatoplasty maxillary hypoplasia)	Develops a treatment plan for moderate craniomaxillofacial deformities (e.g., two jaw surgery)	Develops a treatment plan for complex craniomaxillofacial deformities (e.g., Le Fort III, monobloc, facial bipartition)
Performs simple procedures for routine facial trauma with significant guidance	Performs procedures for complex facial trauma with guidance	Performs procedures for simple craniomaxillofacial deformities with minimal guidance	Performs procedures for moderate craniomaxillofacial deformities with minimal guidance	Performs procedures for complex craniomaxillofacial deformities with minimal guidance
Routinely identifies complications	Formulates a plan for complications requiring surgical management	Performs surgical management for routine complications	Performs surgical management for complex complications	Performs reconstructive surgery following initial management of complications
Comments:				ompleted Level 1 ssessable

Patient Care 4: Soft Tissi e.g., vascular malformati	ue Conditions (Hypoplastic ons)	- e.g., Parry Romberg's dis	ease and hemifacial mici	rosomia and Hyperplastic-	
Level 1	Level 2	Level 3	Level 4	Level 5	
Develops a treatment plan for simple soft tissue conditions (e.g., infantile hemangioma) with assistance	Develops a treatment plan for simple soft tissue conditions	Develops a treatment plan for moderately complex soft tissue conditions (e.g., hemifacial microsomia)	Develops a treatment plan for complex soft tissue conditions (e.g., Parry-Romberg's disease)	Develops a treatment plan for complex revision surgery	
Performs simple procedures for soft tissue conditions with assistance	Performs procedures for simple soft tissue conditions	Performs moderately complex procedures for soft tissue conditions	Performs complex procedures for soft tissue conditions	Performs complex revision surgery	
Manages simple complications	Identifies and formulates a plan for complications requiring surgical management	Performs surgical management for routine complications	Performs surgical management for complex complications	Performs reconstructive surgery following initial management of complications	
Comments:				completed Level 1	

Medical Knowledge 1: Oro-Facial Clefting				
Level 1	Level 2	Level 3	Level 4	Level 5
Describes the embryology and physiologic impact of simple oro-facial clefting (e.g., cleft lip)	Describes the treatment of simple oro-facial clefting pathology (e.g., cleft palate)	Describes the etiology, physiologic impact, and treatment of moderately complex oro-facial clefting pathology (e.g., secondary management of velopharyngeal insufficiency (VPI))	Describes the etiology, physiologic impact, and treatment of complex orofacial clefting pathology (e.g., secondary management of cleft nasal deformity)	Describes the etiology, physiologic impact, and treatment of complex orofacial clefting pathology (e.g., Tessier clefts)
Identifies appropriate pre-operative preparation and consultation for simple oro-facial clefting (e.g., nasoalveolar molding (NAM))	Identifies appropriate pre-operative preparation and consultation for moderate oro-facial clefting (e.g., myringotomy tubes)	Identifies appropriate pre- operative preparation, diagnostic tests, and consultation for moderately complex oro-facial clefting (e.g., nasendoscopy)	Identifies appropriate pre- operative preparation, diagnostic tests, and consultation for complex oro-facial clefting (e.g., rhinoscopy)	Identifies appropriate pre- operative preparation, diagnostic tests, and consultation for treatment of Tessier clefts
Comments:	Comments:  Not Yet Completed Level 1 Not Yet Assessable			

Medical Knowledge 2: C	raniosynostosis			
Level 1	Level 2	Level 3	Level 4	Level 5
Describes the embryology and physiologic impact of single-suture craniosynostosis	Describes the treatment of single suture craniosynostosis pathology	Describes the etiology and physiologic impact of treatment of non- syndromic, multi-suture craniosynostosis pathology	Demonstrates knowledge of the etiology of syndromic, multi-suture craniosynostosis pathology	Demonstrates knowledge of the treatment of multi- suture craniosynostosis pathology and the associated conditions (e.g., intracranial, ocular, airway)
Identifies appropriate diagnostic criteria for single-suture craniosynostosis	Identifies appropriate pre- operative preparation and consultation for single- suture craniosynostosis	Identifies appropriate pre- operative preparation, diagnostic tests, and consultation for non- syndromic, multi-suture craniosynostosis	Identifies appropriate pre-operative preparation, diagnostic tests, and consultation for syndromic, multisuture craniosynostosis	Identifies appropriate pre- operative preparation, diagnostic tests, and consultation for treatment of multi-suture craniosynostosis and the associated conditions
Comments:				ompleted Level 1 ssessable

Medical Knowledge 3: Cı	raniomaxillofacial Conditio	ns (e.g., orthognathic proc	edures, facial distraction,	facial fractures)
Level 1	Level 2	Level 3	Level 4	Level 5
Describes the anatomy relevant to simple craniomaxillofacial conditions and facial trauma (e.g., mandible fracture)	Describes the treatment of complex facial trauma (e.g., pan facial fractures, NOE fractures)	Describes the treatment of simple craniomaxillofacial deformities (e.g., postpalatoplasty maxillary hypoplasia)	Describes the treatment of moderate craniomaxillofacial deformities (e.g., two jaw surgery)	Describes the treatment of complex craniomaxillofacial conditions (e.g., Le Fort III, monobloc, facial bipartition)
Identifies appropriate pre-operative preparation and consultation for routine facial trauma	Identifies appropriate pre- operative preparation and consultation for complex facial trauma	Identifies appropriate pre- operative preparation, diagnostic tests, and consultation for simple craniomaxillofacial deformities	Identifies appropriate pre-operative preparation, diagnostic tests, and consultation for moderate craniomaxillofacial deformities	Identifies appropriate pre- operative preparation, diagnostic tests, and consultation for treatment of complex craniomaxillofacial conditions
Comments:			Not Yet C	ompleted Level 1
				ssessable

	raniofacial Soft Tissue Con astic- e.g., vascular malfor		Parry Romberg's disease	and hemifacial
Level 1	Level 2	Level 3	Level 4	Level 5
Describes the embryology and physiologic impact of simple craniofacial soft tissue conditions (e.g., infantile hemangioma)	Describes the treatment of simple craniofacial soft tissue conditions (e.g., infantile hemangioma)	Describes the etiology, physiologic impact, and treatment of moderately complex craniofacial soft tissue conditions (e.g., hemifacial microsomia)	Describes the etiology, physiologic impact, and treatment of complex craniofacial soft tissue conditions (e.g., Parry-Romberg's disease)	Describes the etiology, physiologic impact, and treatment of rare or extensive craniofacial soft tissue conditions (e.g., Klippel-Trenauny malformation)
Identifies appropriate diagnostic criteria for simple craniofacial soft tissue conditions	Identifies appropriate pre- operative preparation and consultation for simple craniofacial soft tissue conditions	Identifies appropriate pre- operative preparation, diagnostic tests, and consultation for moderately complex craniofacial soft tissue conditions	Identifies appropriate pre-operative preparation, diagnostic tests, and consultation for complex craniofacial soft tissue conditions	Identifies appropriate pre- operative preparation, diagnostic tests, and consultation for treatment of rare or extensive craniofacial soft tissue conditions
Comments:				ompleted Level 1

knowledge of common patient safety events  events  that lead to patient safety patient safety events (simulated or actual)  p (simulated or actual)  Demonstrates  Reports patient safety  Participates in disclosure	Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)  Discloses patient safety	Actively engages teams and processes to modify systems to prevent patient safety events
	Discloses nationt safety	
	events to patients and patients' families (simulated or actual)	Role models or mentors others in the disclosure of patient safety events
knowledge of basic quality improvement initiatives quality improvement (e.g., infection rate) quality improvement initiatives date of the description of the descript	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

Systems-Based Practice	2: System Navigation for F	Patient-Centered Care		
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 team members	Coordinates care of patients in complex clinical situations effectively utilizing the roles of the interprofessional team members	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
Comments:			Not Yet C	ompleted Level 1

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)	Describes how working within the health care system 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
Identifies the appropriate hospital resources (e.g., case management, social work) to aid in understanding patient costs	Delivers care with the understanding that there are different payment models (e.g., private, government, public)	Engages with patients in shared decision making, informed by each patient's payment model	Advocates for patient care needs (e.g., community resources, patient assistance resources) with consideration of the limitations of each patient's payment model	Participates in health policy advocacy activities
Demonstrates use of information technology (e.g., electronic medical record)	Describes components of documentation for coding	Documents the key components required for billing and coding for simple procedures and inpatient status	Analyzes individual practice patterns and professional requirements in preparation for practice	Educates others to prepare them for transition to practice

Practice-Based Learning and Improvement 1: Evidence-Based and Informed Practice					
Level 1	Level 2	Level 3	Level 4	Level 5	
Demonstrates how to access and use available evidence, and incorporate patient preferences and values to the care of a routine patient	Articulates clinical questions and elicits patient preferences and values 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:	Comments:  Not Yet Completed Level 1				

Level 1	Level 2	Level 3	Level 4	Level 5
Accepts responsibility for personal and professional development by establishing goals	Demonstrates openness to receiving performance data (feedback and other input) to inform goals	Continually seeks performance data, with adaptability and humility	Continually self- assesses and uses external feedback to confirm and augment performance data	Models self-assessment and feedback incorporation consistently
Identifies factors that contribute to gap(s) between expectations and performance	Analyzes and the factors that contribute to gap(s) between expectations and performance	Institutes behavioral change(s) to narrow the gap(s) between expectations and performance	Challenges their own assumptions and considers alternatives in narrowing the gap(s) between expectations and 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 implementing learning plans for others

Professionalism 1: Profe	Professionalism 1: Professional Behavior and Ethical Principles				
Level 1	Level 2	Level 3	Level 4	Level 5	
Identifies and describes appropriate professionalism by oneself and others	Demonstrates professional behavior in all situations by oneself and others	Describes when and how to appropriately report professionalism lapses by oneself and others	Recognizes situations that may trigger professionalism lapses in oneself and others	Coaches others when their behavior fails to meet professional expectations	
Demonstrates knowledge of the ethical principles underlying informed consent, surrogate decision making, advance directives, HIPAA/ confidentiality, error disclosure, stewardship of limited resources, and related topics	Demonstrates knowledge of ethical principles	Recognizes the need to seek help in managing and resolving complex ethical situations	Utilizes appropriate resources for managing and resolving ethical dilemmas (e.g., ethics consultations, literature review, risk management/legal consultation)	Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution	
Comments:	Comments:  Not Yet Completed Level 1				

Professionalism 2: Accountability/Conscientiousness						
Level 1	Level 2	Level 3	Level 4	Level 5		
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	Delegates some tasks or responsibilities in routine situations	Delegates some tasks or responsibilities in complex or stressful situations	Teaches concepts of or counsels others on accountability or conscientiousness in the workplace		
Takes responsibility for failure to complete tasks and responsibilities in routine situations	Identifies potential contributing factors, and describes strategies for ensuring timely task completion in the future	Recognizes situations that may impact one's own or others' ability to complete tasks and responsibilities in a timely manner in routine situations	Recognizes situations that may impact one's own or others' ability to complete tasks and responsibilities in a timely manner in complex or stressful situations	On a departmental or system-wide level, advocates to improve systems that ensure patients' needs are met within the hospital, on discharge, and on follow- up		
Comments:  Not Yet Completed Level 1				completed Level 1		

Professionalism 3: Self-Awareness and Help-Seeking				
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes of the importance of one's personal and professional well-being	Independently recognizes status of one's personal and professional well- being	With assistance, proposes a plan to optimize one's personal and professional well-being	Independently develops a plan to optimize one's personal and professional well-being	Optimizes departmental or system-wide tools available for maximizing one's personal and professional well-being
Identifies the resources available for professional well-being	Demonstrates appropriate help-seeking behaviors	With assistance, proposes a plan to improve co- worker's knowledge of well-being resources	Independently advocates for and raises awareness of resources for physician well-being	Coaches others when emotional responses or limitations in knowledge/skills do not meet professional expectations
Comments:  Not Yet Completed Level 1				

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.

Level 1	Level 2	Level 3	Level 4	Level 5
Uses language and non- verbal 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 the patient's/patient's family's 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 differences)	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 the patient's/patient's family's expectations and understanding of the patient's health status and treatment options	Organizes and initiates communication with the patient/patient's 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 the patient's/patient's family's values, goals and preferences, and acknowledges uncertainty and conflict	Independently uses shared decision making to align the patient's/patient's family's values, goals, and preferences with treatment options to make a personalized care plan	Role models shared decision making in communication with the patient/patient's family, including those with a high degree of uncertainty/conflict

Level 1	Level 2	Level 3	Level 4	Level 5
Communicates information effectively with all health care team members	Clearly, directly, and specifically communicates with team members in a way that is respectful of their time	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
Accurately records and safeguards patient health information	Efficiently uses the electronic health record (EHR) to communicate with the members of the health care team	Integrates and synthesizes all relevant data from outside systems and prior encounters into the EHR	Initiates difficult conversations with appropriate stakeholders to improve the system	Facilitates dialogue regarding systems issues among larger community stakeholders (health care system)