Adult Congenital Heart Disease Milestones

The Accreditation Council for Graduate Medical Education



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# Adult Congenital Heart Disease 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 competence 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.

### **Adult Congenital Heart Disease Milestones Work Group**

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Review Committee for Internal Medicine

## **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 resident/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 resident 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.

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.

Professionalism 2: Acco	untability/Conscientiousne	ss			
Level 1	Level 2	Level 3		Level 4	Level 5
Takes responsibility for failure to complete tasks and responsibilities, identifies 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	manner w attention t	ilities in a timely rith appropriate to detail in or stressful	Recognizes situations that may impact others' ability to complete tasks and responsibilities in a timely manner	Mentors others to complete tasks and responsibilities in a timely manner
Recognizes the principles of conflict of interest in relationships with industry and other entities	Recognizes personal potential conflicts with industry	managing relationsh and other minimize	sistance in personal ips with industry entities to bias and undue in practice	Identifies, discloses, and manages relationships with industry and other entities to minimize bias and undue influence in practice	
Comments:				Not Yet C	Completed Level 1
middle of a lev	sponse box in the vel implies that that level and in lower een substantially		between leve in lower level demonstrated	esponse box on the lingles indicates that miles is have been substanted as well as some the higher level(s).	tones

With indirect supervision, performs a history and exam, reviews data, and reports results for patients with adult congenital heart disease (ACHD) admitted with cardiac issues (e.g., acute coronary syndromes, cardiogenic shock, decompensated heart failure, and arrhythmias, pulmonary hypertension) or for cardiovascular	Patient Care 1: Inpatient Level 1	Care	Level 3	Level 4	Level 5
performs inpatient consultation for patients with simple complexity ACHD admitted for non-cardiovascular procedures or diagnoses performs inpatient consultation for patients with simple and moderate cardiovascular procedures or diagnoses performs inpatient consultation for patients with night complexity with high complexity ACHD admitted for non-cardiovascular procedures or diagnoses performs inpatient consultation for patients with any level of ACHD complexity admitted for non-cardiovascular procedures or diagnoses	With indirect supervision, performs a history and exam, reviews data, and reports results for patients with adult congenital heart disease (ACHD) admitted with cardiac issues (e.g., acute coronary syndromes, cardiogenic shock, decompensated heart failure, and arrhythmias, pulmonary hypertension) or for cardiovascular procedures	With indirect supervision, manages inpatients with simple and moderate complexity ACHD admitted for active cardiac conditions or cardiovascular	With indirect supervision, manages inpatients with high complexity ACHD admitted for active cardiac conditions or cardiovascular	Independently manages inpatients with any level of ACHD complexity admitted with active cardiac conditions or for cardiovascular	Presents and integrates comprehensive patient data and leads a multidisciplinary patient care conference for challenging inpatient
	performs inpatient consultation for patients with simple complexity ACHD admitted for non-cardiovascular	performs inpatient consultation for patients with simple and moderate complexity ACHD admitted for non- cardiovascular	performs inpatient consultation for patients with high complexity ACHD admitted for non- cardiovascular	inpatient consultation for patients with any level of ACHD complexity admitted for non-cardiovascular procedures or	
					ot Yet Assessable itical Deficiencies

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Patient Care 2: Outpatier	nt Care			
Level 1	Level 2	Level 3	Level 4	Level 5
With indirect supervision, performs a comprehensive ACHD-specific cardiac history and exam for patients with simple complexity ACHD	With indirect supervision, performs a comprehensive ACHD-specific history and physical exam for patients with simple and moderate complexity ACHD	With indirect supervision, performs a comprehensive ACHD-specific history and physical exam for patients with high complexity ACHD	Independently performs a comprehensive ACHD-specific history and physical exam for patients with any level of ACHD complexity	Presents and integrates comprehensive patient data and leads a multidisciplinary patient care conference for challenging outpatient cases
With indirect supervision, reviews and interprets diagnostic tests for patients with simple complexity ACHD	With indirect supervision, reviews and interprets diagnostic tests for patients with simple and moderate complexity ACHD	With indirect supervision, reviews and interprets diagnostic tests for patients with high complexity ACHD	Independently reviews and interprets diagnostic tests for patients with any level of ACHD complexity	
With indirect supervision, formulates a disease-specific, guideline-directed assessment and plan for patients with simple complexity ACHD	With indirect supervision, formulates an assessment and plan for a patient with simple and moderate complexity ACHD	With indirect supervision, formulates an assessment and plan for patients with high complexity ACHD	Independently formulates an assessment and plan for patients with any level of ACHD complexity	
Comments:				ot Yet Assessable itical Deficiencies

Patient Care 3: Heart Fai	lure Management for Patier	nts with ACHD		
Level 1	Level 2	Level 3	Level 4	Level 5
With indirect supervision, provides heart failure inpatient and outpatient care for patients with simple complexity ACHD, including clinical history taking, physical examination, and establishment of a treatment plan	With indirect supervision, provides heart failure inpatient and outpatient care for patients with simple and moderate complexity ACHD, including clinical history taking, physical examination, and establishment of a treatment plan	With indirect supervision, provides heart failure inpatient and outpatient care for patients with high complexity ACHD, including clinical history taking, physical examination, and establishment of a treatment plan	Independently provides heart failure inpatient and outpatient care for patients with any level of ACHD complexity, including clinical history taking, physical examination, and establishment of a treatment plan	Presents and integrates comprehensive patient data and leads a multidisciplinary patient care conference for challenging heart failure cases
Comments:				ot Yet Assessable

Patient Care 4: Transpla	nt Mechanical Support Card	e		
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes clinical signs and symptoms associated with endstage heart failure in various forms of congenital heart disease (e.g., Fontan circulation)	With direct supervision, interprets imaging and laboratory studies and manages patients with ACHD and advanced heart failure in need of mechanical support and heart transplantation	With indirect supervision, interprets imaging and laboratory studies and manages the care of patients with ACHD and advanced heart failure in need of mechanical support and heart transplantation	Independently interprets imaging and laboratory studies and manages the care of patients with ACHD and advanced heart failure in need of mechanical support and heart transplantation	
Recognizes the unique anatomic features of various congenital heart lesions and their applicability to advanced treatment options, including mechanical support and heart transplantation	Participates in and provides anatomic and hemodynamic input for patients with complex ACHD lesions at multidisciplinary heart failure meetings	With direct supervision, provides anatomic and hemodynamic input for patients with complex ACHD lesions on mechanical cardiac support	With indirect supervision, provides anatomic and hemodynamic input for patients with complex ACHD lesions on mechanical cardiac support	Independently provides anatomic and hemodynamic input for patients with complex ACHD lesions on mechanical cardiac support
Comments:				Yet Assessable cal Deficiencies

Patient Care 5: Pregnand	cy/Contraception			
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes risks/benefits of different contraception methods, and provides general family planning and contraception education to patients with ACHD	With direct supervision, provides disease-specific counseling on methods of contraception, including discussion of risks/benefits for patients with simple complexity ACHD	With indirect supervision, provides disease-specific counseling on methods of contraception, including discussion of risks/benefits for patients with moderate complexity ACHD	Independently provides disease-specific counseling on methods of contraception, including discussion of risks/benefits for patients with all levels of ACHD complexity	Leads patients in shared decision-making conversations about family planning and methods of contraception, including discussion of risks/benefits
Applies ACHD complexity and pregnancy risk-stratification models in evaluation of pregnancy risk	With direct supervision, provides individualized counseling about maternal risk and fetal outcomes to patients with ACHD	With indirect supervision, provides individualized counseling about maternal risk and fetal outcomes to patients with ACHD	Independently provides individualized counseling about maternal risk and fetal outcomes to patients with ACHD	Leads patients/families in shared decision-making conversations about pregnancy risk
Formulates plans for surveillance of cardiac disease during pregnancy, formulates delivery plans, and participates in peri- and postpartum cardiovascular care, with guidance	With direct supervision, formulates care plans for low complexity pregnant patients with ACHD, formulates a delivery plan, and participates in peri- and postpartum cardiovascular care	With indirect supervision, formulates care plans for pregnant patients with moderate complexity ACHD, formulates a delivery plan, and participates in peri- and postpartum cardiovascular care	For pregnant patients with all levels of ACHD complexity, independently formulates care plans, formulates delivery plans, and participates in peri- and postpartum cardiovascular care	For all pregnant patients with ACHD, including high complexity patients, independently formulates care plans, formulates delivery plans, and participates in peri- and postpartum cardiovascular care
Comments:				Yet Assessable cal Deficiencies

Medical Knowledge 1: In	naging			
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes the indications, contraindications, limitations, and appropriate guidelinedirected time intervals of imaging studies	Identifies native and post- surgical anatomy and understands hemodynamic implications of various imaging studies for patients with simple complexity ACHD	Identifies native and post- surgical anatomy and understands hemodynamic implications of various imaging studies for patients with moderate complexity ACHD	Identifies native and post-surgical anatomy and understands hemodynamic implications of various imaging studies for patients with any ACHD complexity	Identifies, teaches, and presents knowledge of challenging imaging studies of patients with any level of ACHD complexity
Comments:				ot Yet Assessable itical Deficiencies

Medical Knowledge 2: Critical Thinking for Diagnosis and Therapy				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies complexities of ACHD and implications on differential diagnosis, comorbidities, and diagnostic plan	Diagnoses simple ACHD and creates a therapeutic plan based on comorbidities, patient data, and guidelines	Diagnoses moderate complexity ACHD and creates a therapeutic plan based on comorbidities, patient data, and guidelines	Diagnoses any level of ACHD complexity and creates a therapeutic plan based on comorbidities, patient data, and guidelines	Diagnoses, teaches, and presents knowledge of challenging presentations of patients with any level of ACHD complexity
Comments:				Yet Assessable ical Deficiencies

Version 2	Adult Congenital Heart Diseas	se Milestones, ACGME Report V	Vorksheet	
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 families (simulated or actual)	Discloses patient safety events to patients and 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 quality improvement initiatives at the institutional or departmental level	Participates in quality improvement initiatives at the institutional or departmental level	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

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Not Yet Completed Level 1

Systems-Based Practice	2: System Navigation for P	Patient-Centered Care	VOLKSHEEL		
Level 1	Level 2	Level 3	Level 4	Level 5	
Demonstrates knowledge of care coordination	Coordinates care of patients in routine clinical situations, effectively using the roles of the interprofessional team members	Coordinates care of patients in complex clinical situations, effectively using 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 effective transitions of care	Performs effective transitions of care in routine clinical situations	Performs effective transitions of care in complex clinical situations	Role models and advocates for effective transitions of care within and across health care delivery systems	Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes	
	Demonstrates general knowledge of financial, cultural, and social barriers to adherence to care	Identifies financial, cultural, and social barriers to adherence to care for specific populations	Adapts practice to address the financial, cultural, and social barriers to adherence to care	Leads innovations and advocates for populations with health care inequities	
Comments:	Comments:  Not Yet Completed Level 1				

Level 1	Level 2	Level 3	Level 4	Level 5
Identifies key components of health care systems (e.g., hospitals, 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 transitions of care
Describes basic health payment systems, (e.g., government, private, public, uninsured care) and practice models	Delivers care with consideration of each patient's payment model (e.g., insurance type)	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 essential skills for documentation required for independent practice (e.g., electronic health record, documentation required for billing and coding)	Seeks knowledge of non- clinical topics needed for independent practice (e.g., malpractice insurance, government regulation, compliance)	Applies knowledge of non-clinical topics needed for independent practice (e.g., distinctions among adult, pediatric, and/or combined hospitals)	Educates others in non- clinical topics to prepare them for independent 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 to manage a patient with ACHD	Articulates clinical questions and elicits patient preferences to guide evidence-based care	Locates and applies the best available evidence to the care of patients with ACHD while integrating patient preference	Critically appraises and applies available, potentially conflicting evidence to guide care of an individual patient	Develops initiatives to educate 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 feedback and performance data to form goals	Occasionally seeks feedback and performance data with adaptability and humility	Systematically seeks feedback and performance data with adaptability and humility	Coaches others to seek feedback and performance data
Acknowledges limits and gaps between expectations and performance; demonstrates self-awareness	Analyzes the factors that contribute to limits and gaps; demonstrates appropriate help-seeking behaviors	Creates and implements a learning plan	Uses performance data to assess learning plan and improves it when necessary	Facilitates the design and implementation of learning plans for others
Comments:  Not Yet Completed Level 1				

Professionalism 1: Professional Behavior and Ethical Principles					
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 oneself and others	Coaches others when their behavior fails to meet professional expectations	
Demonstrates knowledge of ethical principles (e.g., informed consent, advance directives, confidentiality, patient autonomy, equity)	Applies knowledge of ethical principles to routine situations	Recognizes need to seek help in managing and resolving complex ethical situations	Uses appropriate resources for managing and resolving ethical dilemmas (e.g., ethics consultations, risk management)	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: Acco	untability					
Level 1	Level 2	Level 3	Level 4	Level 5		
Takes responsibility for failure to complete tasks and responsibilities, identifies 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	Engages with the system to improve outcomes		
Recognizes the principles of conflict of interest in relationships with industry and other entities	Recognizes personal potential conflicts with industry	Seeks assistance in managing personal relationships with industry and other entities to minimize bias and undue influence in practice	Identifies, discloses, and manages relationships with industry and other entities to minimize bias and undue influence in practice			
Comments:			Not Yet C	ompleted Level 1		

Professionalism 3: Self-A	Awareness and Well-Being			
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes the importance of personal and professional wellbeing	Independently recognizes status of personal and professional well-being	With assistance, proposes a plan to optimize personal and professional well-being, including identification of available resources	Independently develops a plan using available resources to optimize personal and professional well-being	Participates in a system change to improve well-being in oneself and others
Comments:			Not Yet C	ompleted Level 1

This subcompetency is not intended to evaluate a fellow's well-being. Rather, the intent is to ensure that each fellow has the fundamental knowledge of factors that affect well-being, the mechanisms by which those factors affect well-being, and available resources and tools to improve well-being.

Interpersonal and Comm	nunication Skills 1: Patient-	and Family-Centered Com	munication		
Level 1	Level 2	Level 3	Level 4	Level 5	
Demonstrates respect and establishes rapport in patient encounters	Establishes a therapeutic relationship in routine patient encounters	With guidance, establishes a therapeutic relationship in challenging patient encounters	Independently establishes a therapeutic relationship in challenging patient encounters	Mentors others in situational awareness and critical self-reflection to consistently develop positive therapeutic relationships	
Knows barriers to effective communication (e.g., language, disability, health literacy, cultural differences, personal bias)	Identifies barriers to effective communication in patient encounters	Attempts to minimize communication barriers, including reflection on any personal biases	Proactively minimizes communication barriers and independently manages personal biases	Role models self- awareness to minimize communication barriers	
Identifies the need to adjust communication strategies to succeed in shared decision making	Organizes and initiates communication with patients and their families to facilitate shared decision making	With guidance, uses shared decision making to implement a personalized care plan	Independently uses shared decision making to implement a personalized care plan	Role models shared decision making	
Comments:	Comments:  Not Yet Completed Level 1				

Level 1	Level 2	Level 3	Level 4	Level 5
Respectfully receives a consultation request	With direct supervision, respectfully and thoroughly completes consultations with effective documentation and communication in common cases	With indirect supervision, completes consultations with effective documentation and communication in common cases	Completes consultations with effective documentation and communication in complex cases	
Uses language that values all members of the health care team	Communicates information effectively with all health care team members	Adapts communication style to fit team needs	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
	Participates in team- based discussions to optimize team performance	Initiates team-based discussions to optimize team performance	Facilitates team-based discussions to optimize team performance	Facilitates regular health care team-based feedback in complex situations

Level 1	Level 2	Level 3	Level 4	Level 5
Accurately records information in the patient record and safeguards patients' personal health information	Demonstrates organized diagnostic and therapeutic reasoning through notes in the patient record	Concisely reports diagnostic and therapeutic reasoning in the patient record	Independently communicates timely information in a written format and verbally when appropriate	Models written communication to improve others' performance
	Identifies appropriate communication channels (e.g., cell phone/pager, medical record, email) as required by institutional policy	Respectfully communicates concerns about the system	Uses appropriate channels to offer clear and constructive suggestions to improve the system	Guides departmental or institutional communication around policies and procedures

Level 1	Level 2	Level 3	Level 4	Level 5
Identifies communication about prognosis as a key element for shared decision making	Assesses the patient's family's/caregiver's prognostic awareness and identifies preferences for receiving prognostic information	Delivers prognostic information and attends to emotional responses of patients and patients' families/caregivers	Tailors communication of prognosis according to disease characteristics and trajectory, patient consent, patient's family's needs, and medical uncertainty, and addresses emotional response	Coaches others in the communication of prognostic information
Identifies the need to assess the patient's/patient's family's expectations and understanding of their health status and treatment options	Facilitates communication with the patient/patient's family by introducing stakeholders, setting the agenda, clarifying expectations, and verifying an understanding of the clinical situation	Sensitively and compassionately delivers medical information; elicits the patient's/patient's family's values, goals, and preferences; acknowledges uncertainty and conflict, with guidance	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 in situations with a high degree of uncertainty and conflict	Coaches shared decision making in communication with the patient/patient's family