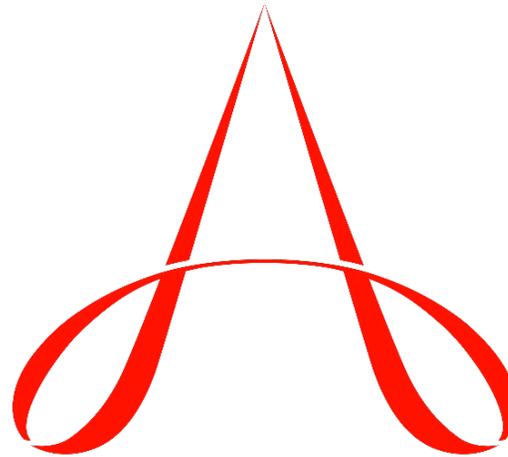# Congenital Cardiac Surgery Milestones

The Accreditation Council for Graduate Medical Education

ACGME

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First Revision: July 2015

Congenital Cardiac Surgery Milestones

The Milestones are designed only for use in evaluation of fellows in the context of their participation in ACGME-accredited 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.

Congenital Cardiac Surgery Milestones

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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 the educational program just as a senior fellow may be at a lower level later in the 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 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 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 www.acgme.org, 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 subcompetency in the same format as the ACGME Report Worksheet. For each reporting period, a fellow's performance on the milestones for each subcompetency will be indicated by selecting the level of milestones that best describes that fellow's performance in relation to those milestones.

Systems-Based Practice 2: System Navigation for 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 teams	Coordinates care of patients in complex clinical situations effectively utilizing the roles of their interprofessional teams	Leads 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 handoffs	Performs safe and effective transitions of care/handoffs in routine clinical situations	Performs safe and effective transitions of care/handoffs in complex clinical situations	Advocates for safe and effective transitions of care/handoffs within and across healthcare delivery systems including outpatient settings	Improves quality of transitions of care within and across healthcare delivery systems to optimize patient outcomes
Demonstrates knowledge of population and community health needs and disparities	Identifies specific population and community health needs and inequities for their local population	Uses local resources effectively to meet the needs of a patient population and community	Participates in changing and adapting practice to provide for the needs of specific populations	Leads innovations and advocates for populations and communities with health care inequities

Comments:

Not Yet 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 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: Technical Skills and Performance				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Performs components of basic complexity procedures	Performs basic complexity procedures	Performs moderate complexity procedures and recognizes intra-operative complications	Performs high complexity procedures and manages intra-operative complications	Independently performs high complexity procedures
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1 ☐

Not Yet Assessable ☐

Patient Care 2: Patient Evaluation and Clinical Decision Making

Level 1	Level 2	Level 3	Level 4	Level 5
Identifies patient specific factors needed to design a diagnostic work-up and surgical plan for a basic complexity procedure	Integrates information with patient specific factors to design a succinct diagnostic work-up and surgical plan for a basic complexity procedure	Integrates information with patient specific factors to design a succinct diagnostic work-up and surgical plan for a moderate complexity procedure	Integrates information with patient specific factors to design a succinct diagnostic work-up and surgical plan for a high complexity procedure	Formulates an approach for complex patients who do not fit into traditional algorithms

Comments:

Not Yet Completed Level 1 ☐

Not Yet Rotated ☐

Patient Care 3: Critical Care				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Interprets diagnostic data for a critically ill patient	Implements a treatment plan for peri-operative patients with basic complexity procedures	Implements a treatment plan for peri-operative patients with moderate complexity procedures	Implements a comprehensive treatment plan for peri-operative patients with high complexity procedures	Implements a comprehensive treatment plan for a patient condition that does not have clear guidelines
Performs basic complexity bedside procedures	Performs moderate complexity bedside procedures	Performs high complexity bedside procedures	Performs high complexity procedures in urgent scenarios and determine need for emergent surgical intervention	Teaches moderate complexity procedures to junior learners

Comments:

Not Yet Completed Level 1 ☐
Not Yet Assessable ☐

Medical Knowledge 1: Morphology				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates comprehension of and explains morphology for basic complexity congenital cardiac defects	Demonstrates comprehension and applies knowledge of morphology for moderate complexity defects	Demonstrates comprehension of morphology for higher complexity defects and distinguishes between different morphologies	Demonstrates comprehension and integrates knowledge of morphology for most complex defects and uncommon or rare variants	Teaches morphology for complex defects to junior learners

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Comments:

Not Yet Completed Level 1 ☐
Not Yet Assessable ☐

Medical Knowledge 2: Pathophysiology and Surgical Outcomes				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates basic comprehension of pathophysiology and surgical outcomes of basic complexity defects, including timing of repair	Demonstrates general comprehension of pathophysiology and surgical outcomes of moderate complexity defects, including timing of repair	Demonstrates detailed comprehension of pathophysiology and surgical outcomes of higher complexity defects, including timing of repair	Demonstrates in-depth comprehension of pathophysiology and surgical outcomes of most complex defects and uncommon or rare variants	Teaches pathophysiology and surgical outcomes of complex defects to junior learners
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1 ☐

Not Yet Assessable ☐

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 to superiors/ faculty members	Reports patient safety events through institutional reporting systems (actual or simulated)	Participates in disclosure of patient safety events to patients and families (simulated or actual)	Role models or mentors others in the reporting/disclosure of patient safety events to superiors/organization
Demonstrates knowledge of basic quality improvement methodologies and metrics	Describes local quality improvement initiatives	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 ☐

Systems-Based Practice 2: System Navigation for 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/social situations effectively using the roles of the interprofessional teams	Coordinates care of patients in complex clinical/social situations effectively using 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	Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes
Demonstrates knowledge of population and community health needs and disparities	Identifies specific population and community health needs and inequities for their local population	Uses local resources effectively to meet the needs of a patient population and community	Adapts personal practice to provide for the needs of specific populations	Leads innovations and advocates for populations and communities with health care inequities

| ☐   ☐   ☐   ☐   ☐   ☐   ☐   ☐   ☐ |

Comments:

Not Yet Completed Level 1   ☐

Systems-Based Practice 3: Physician Role in Health Care Systems				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies key components of the healthcare system (e.g., hospital, finance, personnel, technology)	Recognizes the components of how a health care system are inter-related, and its impact on patient care	Understands how individual practice affects the broader system (e.g., length of stay, readmission rates, clinical efficiency)	Discusses various components of the health care system to provide efficient and effective patient care and transition of care	Advocates for systems change that enhances high-value, efficient, and effective patient care and transition of care
Understands the mechanisms for reimbursement, including types of payors	Recognizes the impact of component selection on overall costs	Discusses the impact of component selection on overall costs	Makes cost effective decisions	Participates in health policy advocacy activities

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Comments:

Not Yet Completed Level 1   ☐

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 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
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Comments:

Not Yet Completed Level 1   ☐

Practice-Based Learning and Improvement 2: Reflective Practice and Commitment to Personal Growth				
Level 1	Level 2	Level 3	Level 4	Level 5
Accepts responsibility for personal and professional development by establishing goals and actively seeking opportunities to improve	When prompted, uses performance data to identify gaps, design, and implement a learning plan	Independently uses performance data to identify gaps, design, and implement a learning plan	Independently uses performance data to measure the effectiveness of the learning plan and adapt the plan as needed	Facilitates the design and implementing learning plans for others
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:
Not Yet Completed Level 1   ☐

Professionalism 1: Ethical Principles

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of the ethical principles underlying informed consent, surrogate decision making, advance directives, confidentiality, error disclosure, stewardship of limited resources, and related topics	Applies ethical principles during patient care	Recognizes need to seek help in managing and resolving ethical situations	Uses appropriate resources for managing and resolving ethical dilemmas as needed	Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution
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Comments:

Not Yet Completed Level 1　☐

Professionalism 2: Professional Behavior and Accountability				
Level 1	Level 2	Level 3	Level 4	Level 5
Completes patient care tasks and responsibilities, identifies potential barriers, and describes strategies for ensuring timely task completion	Performs patient care tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations	Performs patient care 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 patient-care tasks and responsibilities in a timely manner	Develops systems to enhance other's ability to efficiently complete patient-care tasks and responsibilities
Describes when and how to appropriately report lapses in professional behavior	Takes responsibility for his or her own professional behavior and reports lapses in self and others	Demonstrates professional behavior in complex or stressful situations	Intervenes to prevent and correct lapses in professional behavior in self and others	Coaches others when their behavior fails to meet professional expectations
Accepts feedback highlighting gaps	Episodically seeks feedback	Intentionally seeks and integrates multisource feedback into practice	Provides constructive feedback to others	

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Comments:

Not Yet Completed Level 1   ☐

Professionalism 3: Administrative Tasks				
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes the need to complete administrative tasks and responsibilities	Performs administrative tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations	Performs administrative 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 administrative tasks and responsibilities in a timely manner	Facilitates efforts to enhance other's ability to efficiently complete administrative tasks and responsibilities
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Comments:

Not Yet Completed Level 1   ☐

Professionalism 4: Well-Being				
Level 1	Level 2	Level 3	Level 4	Level 5
With assistance, recognizes status of personal and professional well-being	Independently recognizes status of personal and professional well-being	Proposes a plan to optimize personal and professional well-being	Executes a plan to optimize personal and professional well-being	Coaches others when emotional responses 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 wellbeing, the mechanisms by which those factors impact well-being, and available resources and tools to improve well-being.

Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication				
Level 1	Level 2	Level 3	Level 4	Level 5
Introduces themselves and explains their role to the patient and family	Delivers routine information to patients and families and confirms understanding	Delivers complex and difficult information to patients and families and confirms understanding	Facilitates interdisciplinary patient and family conferences	Coaches others in the facilitation of difficult conversations
Provides timely updates to patients and families	Actively listens to patients and families to elicit patient preferences and expectations	Uses shared decision making to make a personalized care plan	Effectively negotiates and manages conflict among patients, families, and the health care team	Coaches others in conflict resolution
Identifies common barriers to effective communication	Identifies complex barriers to effective communication	When prompted, reflects on personal biases while attempting to minimize communication barriers	Manages communication barriers and biases	Coaches others to manage communication barriers and biases

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Comments:

Not Yet Completed Level 1 ☐

Interpersonal and Communication Skills 2: Interprofessional and Team Communication				
Level 1	Level 2	Level 3	Level 4	Level 5
Respectfully requests a consultation	Clearly and concisely requests a consultation	Verifies own understanding of consultant recommendations	Coordinates recommendations from different members of the health care team to optimize patient care	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	Verifies understanding of recommendations when providing consultation	Navigates and resolves disagreements with interprofessional team	Coaches others in navigating interprofessional disagreements
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	Mediates conflict within the team	Coaches others in active listening and communication styles

Comments:

Not Yet Completed Level 1 ☐

Interpersonal and Communication Skills 3: Communication within Health Care Systems				
Level 1	Level 2	Level 3	Level 4	Level 5
Accurately and timely documents information in the patient record	Completes documentation thoroughly and communicates diagnostic and therapeutic reasoning in an organized fashion	Completes documentation accurately, concisely, and completely	Communicates in a clearly organized, concise, and timely manner, and includes anticipatory guidance	Models feedback to improve others' written communication
Safeguards patient personal health information	Documents required data in formats specified by institutional policy	Appropriately selects direct and indirect forms of communication	Uses written and verbal communication (e.g., patient notes, email) in a professional manner	Facilitates departmental or institutional communication policies and procedures
Communicates through appropriate channels as required by institutional policy	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)
☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Not Yet Completed Level 1   ☐