Pediatrics and Medical Genetics and Genomics (combined)

programs must annually report on **each** set of Milestones.



# **Pediatrics Milestones**

The Accreditation Council for Graduate Medical Education



Implementation Date: July 1, 2021 Second Revision: March 2021 First Revision: December 2012



# Medical Genetics and Genomics Milestones



Second Revision: August 2019 First Revision: July 2013



# **Pediatrics Milestones**

The Accreditation Council for Graduate Medical Education



Implementation Date: July 1, 2021 Second Revision: March 2021 First Revision: December 2012

# **Pediatrics Milestones**

The Milestones are designed only for use in evaluation of residents in the context of their participation in ACGME-accredited residency programs. The Milestones provide a framework for the assessment of the development of the resident 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.

## **Pediatrics Milestones**

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

American Board of Pediatrics Association of American Medical Colleges Association of Osteopathic Directors and Medical Educators Association of Pediatric Program Directors Council of Pediatric Subspecialties Review Committee for Pediatrics

## **Understanding Milestone Levels and Reporting**

This document presents the Milestones, which programs use in a semi-annual review of resident 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 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 resident 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 resident may achieve higher levels early in his/her educational program just as a senior resident 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. Residents may also regress in achievement of their milestones. This may happen for many reasons, such as over scoring in a previous review, a disjointed experience in a particular procedure, or a significant act by the resident.

Selection of a level implies the resident 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 resident 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.

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.

Additional resources are available in the <u>Milestones</u> section of the ACGME website. Follow the links under "What We Do" at <u>www.acgme.org</u>.

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 resident's performance on the milestones for each sub-competency will be indicated by selecting the level of milestones that best describes that resident's performance in relation to those milestones.

1: Patient Safety			
Level 2	Level 3	Level 4	Level 5
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
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)	Discloses patient safety events to patients and families (simulated or actual)	Role models or mentors others in the disclosure of patient safety events
		Not Yet C	ompleted Level 1
onse box in the	Selecting a re	esponse box on the line	e in
middle of a level implies that		between levels indicates that milestones	
			ally
substantially			
	Level 2 Identifies system factors that lead to patient safety events Reports patient safety events through institutional reporting systems (actual or simulated)	Level 2     Level 3       Identifies system factors that lead to patient safety events     Participates in analysis of patient safety events (simulated or actual)       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)       Image: Description of the institutional reporting systems (actual or simulated)     Participates in disclosure of patient safety events to patients and families (simulated or actual)       Image: Description of the implies that t level and in lower substantially     Image: Description of the in lower level demonstrated	Level 2Level 3Level 4Identifies system factors that lead to patient safety eventsParticipates in analysis of patient safety events (simulated or actual)Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)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)Discloses patient safety events to patient safety events to patient safety events to patient sand families (simulated or actual)Not Yet C onse box in the implies that t level and in lowerNot Yet C between levels indicates that milesto in lower levels have been substantiated

Patient Care 1: History					
Level 1	Level 2	Level 3	Level 4	Level 5	
Gathers information strictly following a template	Adapts template to filter and prioritize pertinent positives and negatives based on broad diagnostic categories or possible diagnoses	Filters, prioritizes, and synthesizes the history to develop a differential diagnosis in real-time for uncomplicated or typical presentations	Filters, prioritizes, and synthesizes the history to develop a differential diagnosis in real time for complicated or atypical presentations	Recognizes and probes subtle clues from patients and families; distinguishes nuances among diagnoses to efficiently drive further information gathering	
Comments: Not Yet Completed Level 1					

Patient Care 2: Physical Exam				
Level 1	Level 2	Level 3	Level 4	Level 5
Performs fundamental physical examination	Performs complete physical examination and identifies variants and abnormal findings	Performs complete or focused physical examination, as indicated, and interprets normal variants and abnormal findings	Performs complete or focused physical examination, as indicated, and selects advanced maneuvers to distinguish between diagnoses	Detects, pursues, and integrates key physical examination findings to distinguish nuances among competing, often similar diagnoses
Performs a rote physical examination using a strict head-to-toe approach	Performs a physical examination considering appropriate adaptation for age and development	Performs a physical examination with consistent use of a developmentally appropriate approach	Performs a physical examination using strategies to maximize patient cooperation and comfort	Performs a physical examination that consistently and positively engages the patient
Comments: Not Yet Completed Level 1				

Patient Care 3: Organize	and Prioritize Patient Care	)		
Level 1	Level 2	Level 3	Level 4	Level 5
Completes tasks for an individual patient, when prompted	Organizes patient care responsibilities by focusing on individual (rather than multiple) patients	Organizes and prioritizes the simultaneous care of patients with efficiency	Organizes, prioritizes, and delegates patient care responsibilities even when patient volume approaches the capacity of the individual or facility; anticipates and triages urgent and emergent issues	Serves as a role model and coach for patient care responsibilities
Comments:				Completed Level 1

Patient Care 4: Clinical Reasoning					
Level 1	Level 2	Level 3	Level 4	Level 5	
Presents clinical facts (e.g., history, exam, tests, consultations) in the order they were elicited	Generates an unfocused differential diagnosis based on the clinical facts	Organizes clinical facts to compare and contrast diagnoses being considered, resulting in a prioritized differential diagnosis	Integrates clinical facts into a unifying diagnosis(es); reappraises in real time to avoid diagnostic error	Role models and coaches the organization of clinical facts to develop a prioritized differential diagnosis, including life threatening diagnoses, atypical presentations, and complex clinical presentations	
Comments: Not Yet Completed Level 1 Not Yet Assessable					

Patient Care 5: Patient Management					
Level 1	Level 2	Level 3	Level 4	Level 5	
Reports management plans developed by others	Participates in the creation of management plans	Develops an interdisciplinary management plan for common and typical diagnoses	Develops and implements informed management plans for complicated and atypical diagnoses, with the ability to modify plans as necessary	Serves as a role model and coach for development of management plans for complicated and atypical diagnoses, with the ability to modify plans as necessary	
Comments: Not Yet Completed Level 1					

Medical Knowledge 1: Clinical Knowledge					
Level 1	Level 2	Level 3	Level 4	Level 5	
Demonstrates basic medical knowledge	Links basic medical knowledge to clinical scenarios	Applies medical knowledge to common and typical scenarios to guide patient care	Integrates a breadth of medical knowledge that includes complicated and atypical conditions to guide patient care	Teaches at multiple levels, drawing from a breadth of medical knowledge that spans the continuum of simple to complex problems	
Comments:				ompleted Level 1	

Medical Knowledge 2: Diagnostic Evaluation				
Level 1	Level 2	Level 3	Level 4	Level 5
Lists basic evaluation (e.g., diagnostic testing and consultation) for common diagnoses, with prompting	Recommends broad evaluation based on an unfocused differential diagnosis	Recommends focused evaluation based on a prioritized differential diagnosis	Prioritizes and optimizes evaluation based on risks, benefits, indications, and alternatives to clarify the diagnosis(es)	Educates others about risks, benefits, indications, and alternatives to guide diagnostic decision making
Reports results of diagnostic studies	Identifies clinically significant diagnostic study results, with guidance	Interprets clinical significance of diagnostic study results	Interprets clinical significance of diagnostic study results while considering study limitations	Teaches others to interpret clinically significant results and consider study limitations
Comments: Not Yet Completed Level 1				

Systems-Based Practice 1: Patient Safety				
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
Comments:			Not Yet C	ompleted Level 1

Systems-Based Practice 2: Quality Improvement				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of basic quality improvement methodologies and metrics	Describes local quality improvement initiatives (e.g., community vaccination rate, infection rate, smoking cessation)	Participates in local quality improvement initiatives	Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project	Creates, implements, and assesses quality improvement initiatives at the institutional or community level
Comments:			Not Yet C	ompleted Level 1

Level 1	Level 2	Level 3	Level 4	Level 5
Lists the various interprofessional individuals involved in the patient's care coordination	Coordinates care of patients in routine clinical situations, incorporating interprofessional teams with consideration of patient and family needs	Coordinates care of patients in complex clinical situations, effectively utilizing the roles of interprofessional teams, and incorporating patient and family needs and goals	Coordinates interprofessional, patient-centered care among different disciplines and specialties, actively assisting families in navigating the health- care system	Coaches others in interprofessional, patient- centered care coordination

Systems-Based Practice 4: System Navigation for Patient-Centered Care – Transitions in Care					
Level 1	Level 2	Level 3	Level 4	Level 5	
Uses a standard template for transitions of care/hand-offs	Adapts a standard template, recognizing key elements for 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, and ensures closed-loop communication	Performs and advocates for safe and effective transitions of care/hand-offs within and across health care delivery systems, including transitions to adult care	Coaches others in improving transitions of care within and across health care delivery systems to optimize patient outcomes	
Comments: Not Yet Completed Level 1					

Systems-Based Practice 5: Population and Community Health					
Level 1	Level 2	Level 2 Level 3 Le		Level 5	
Demonstrates awareness of population and community health needs and disparities	Identifies specific population and community health needs and disparities; identifies local resources	Uses local resources effectively to meet the needs and reduce health disparities of a patient population and community	Adapts practice to provide for the needs of and reduce health disparities of a specific population	Advocates at the local, regional, or national level for populations and communities with health care disparities	
Comments:			Not Yet C	ompleted Level 1	

Systems-Based Practice	6: Physician Role in Healtl	h Care Systems		
Level 1	Level 2	Level 3	Level 4	Level 5
Engages with patients and other providers in discussions about cost- conscious care and key components of the health care delivery system	Identifies the relationships between the delivery system and cost- conscious care and the impact on the patient care	Discusses the need for changes in clinical approaches based on evidence, outcomes, and cost-effectiveness to improve care for patients and families	Advocates for the promotion of safe, quality, and high-value care	Coaches others to promote safe, quality, and high-value care across health care systems
Comments:			Not Yet C	ompleted Level 1

Practice-Based Learning	and Improvement 1: Evide	ence-Based and Informed F	Practice	
Level 1	Level 2	Level 3	Level 4	Level 5
Develops an answerable clinical question and demonstrates how to access available evidence, with guidance	Independently articulates clinical question and accesses available evidence	Locates and applies the evidence, integrated with patient preference, to the care of 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
Comments:			Not Yet C	Completed Level 1

Level 1	Level 2	Level 3	Level 4	Level 5
Participates in feedback sessions	Demonstrates openness to feedback and performance data	Seeks and incorporates feedback and performance data episodically	Seeks and incorporates feedback and performance data consistently	Role models and coaches others in seeking and incorporating feedback and performance data
Develops personal and professional goals, with assistance	Designs a learning plan based on established goals, feedback, and performance data, with assistance	Designs and implements a learning plan by analyzing and reflecting on the factors which contribute to gap(s) between performance expectations and actual performance	Adapts a learning plan using long-term professional goals, self- reflection, and performance data to measure its effectiveness	Demonstrates continuous self-reflection and coaching of others on reflective practice

Professionalism 1: Profe	essional Behavior			
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies expected professional behaviors and potential triggers for lapses	Demonstrates professional behavior with occasional lapses	Maintains professional behavior in increasingly complex or stressful situations	Recognizes situations that may trigger professionalism lapses and intervenes to prevent lapses in self and others	Models professional behavior and coaches others when their behavior fails to meet professional expectations
Identifies the value and role of pediatrics as a vocation/career	Demonstrates accountability for patient care as a pediatrician, with guidance	Fully engages in patient care and holds oneself accountable	Exhibits a sense of duty to patient care and professional responsibilities	Extends the role of the pediatrician beyond the care of patients by engaging with the community, specialty, and medical profession as a whole
Comments: Not Yet Completed Level 1				

Level 1	Level 2	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 in common situations	Analyzes complex situations using ethical principles to address conflict/controversy; seeks help when needed to manage and resolve complex ethical situations	Manages and seeks to resolve ethical dilemmas using appropriate resources (e.g., ethics consultations, literature review, risk management/legal consultation)	Called upon by others to consult in cases of complex ethical dilemmas; identifies and seeks to address system- level factors that induce or exacerbate

Professionalism 3: Acco	untability/Conscientiousne	ess		
Level 1	Level 2	Level 3	Level 4	Level 5
Performs tasks and responsibilities, with prompting	Performs tasks and responsibilities in a timely manner in routine situations	Performs tasks and responsibilities in a thorough and timely manner in complex or stressful situations	Coaches others to ensure tasks and responsibilities are completed in a thorough and timely manner in complex or stressful situations	Creates strategies to enhance others' ability to efficiently complete tasks and responsibilities
Comments:			Not Yet C	ompleted Level 1

Professionalism 4: Well-	Being			
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes the importance of addressing personal and professional well-being	Describes institutional resources that are meant to promote well-being	Recognizes institutional and personal factors that impact well-being	Describes interactions between institutional and personal factors that impact well-being	Coaches and supports colleagues to optimize well-being at the team, program, or institutional level
Comments:			Not Yet C	ompleted Level 1

This subcompetency is not intended to evaluate a resident's well-being, but to ensure each resident 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.

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates respect and attempts to establish rapport	Establishes a therapeutic relationship in straightforward encounters	Establishes a culturally competent and therapeutic relationship in most encounters	therapeutic relationship	Mentors others to develop positive therapeutic relationships
Attempts to adjust communication strategies based upon patient/family expectations	Adjusts communication strategies as needed to mitigate barriers and meet patient/family expectations	Communicates with sensitivity and compassion, elicits patient/family values, and acknowledges uncertainty and conflict	Uses shared decision making with patient/family to make a personalized care plan	Models and coaches others in patient- and family-centered communication

Level 1	Level 2	Level 3	Level 4	Level 5
Respectfully requests a consultation, with guidance	Clearly and concisely requests consultation by communicating patient information	Formulates a specific question for consultation and tailors communication strategy	Coordinates consultant recommendations to optimize patient care	Maintains a collaborative relationship with referring providers that maximizes adherence to practice recommendations
Identifies the members of the interprofessional team	Participates within the interprofessional team	Uses bi-directional communication within the interprofessional team	Facilitates interprofessional team communication	Coaches others in effective communication within the interprofessional team

Level 1	Level 2	Level 3	Level 4	Level 5
Records accurate information in the patient record	Records accurate and timely information in the patient record	Concisely documents updated, prioritized, diagnostic and therapeutic reasoning in the patient record	Documents diagnostic and therapeutic reasoning, including anticipatory guidance	Models and coaches others in documenting diagnostic and therapeutic reasoning
Identifies the importance of and responds to multiple forms of communication (e.g., in- person, electronic health record (EHR), telephone, email)	Selects appropriate method of communication, with prompting	Aligns type of communication with message to be delivered (e.g., direct and indirect) based on urgency and complexity	Demonstrates exemplary written and verbal communication	Coaches others in written and verbal communication



# Medical Genetics and Genomics Milestones

The Accreditation Council for Graduate Medical Education



Second Revision: August 2019 First Revision: July 2013

# Medical Genetics and Genomics Milestones

The Milestones are designed only for use in evaluation of residents 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 resident 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.

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## **Medical Genetics and Genomics Milestones**

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

American Board of Medical Genetics and Genomics

Association of Professors of Human and Medical Genetics

ACGME Review Committee for Medical Genetics and Genomics

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## **Understanding Milestone Levels and Reporting**

This document presents Milestones designed for programs to use in semi-annual review of resident 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. The narrative descriptions are targets for resident performance throughout their training.

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

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

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

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#### **Additional Notes**

For residents who have insufficient data/evaluations to assess, please choose "not yet assessable."

Level 4 is designed as a graduation *goal* and *does not* represent a graduation *requirement*. Making decisions about readiness for graduation and unsupervised practice is the purview of the residency 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 resident 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, training programs, and the specialty. ACGME and its partners will continue to evaluate and perform research on the Milestones 2.0 sets to assess their impact and value.

Examples are provided for some milestones within this document. 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 resident who performs a procedure independently must, at a minimum, be supervised through oversight.

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

Additional resources are available on the <u>Milestones</u> section of the ACGME website. Follow the links under "What We Do" at <u>www.acgme.org</u>.

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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 resident's performance on the milestones for each sub-competency will be indicated by selecting the level of milestones that best describes that resident's performance in relation to those milestones.

Systems-based Practic	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			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 (actual or simulated)	of patient safety events to patients and families		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 local (institutional) quality improvement initiatives	Participates i (institutional o improvement	quality	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 (state /federal) level
Comments:				Not Yet C	Completed Level 1
Selecting a response box in the middle of a level implies that milestones in that level and in lower levels have been substantially demonstrated.				between levels in	

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#### **Patient Care 1: History and Physical Examination** Level 1 Level 2 Level 3 Level 4 Level 5 Takes a general medical Takes a basic genetics-Takes a genetics-focused Takes a comprehensive Makes a nationally and family history focused history and history with some genetic history with recognized contribution by describing a new completes a basic pertinent positive and pertinent positive and genetic disorder or pedigree negative findings; negative findings; expanding the phenotype integrates the history completes an accurate of a known syndrome or pedigree with other data to disorder develop a differential diagnosis Completes a general Completes a basic Completes a genetics-Identifies and accurately physical examination genetics-focused physical focused physical describes phenotypic examination; identifies examination; identifies features and/or anomalies using normal and abnormal and accurately describes phenotypic features common phenotypic standardized features and/or and/or anomalies nomenclature; anomalies; recognizes recognizes complex common syndromes or syndromes or disorders disorders Comments:

Not Yet Completed Level 1

Not Yet Assessable

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Patient Care 2: Selecting Tests, Interpreting Results, and Management of Genetic Conditions				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies the variety of testing modalities for genetic conditions	Identifies basic testing options for common genetic disorders	Identifies strengths and limitations of testing methodologies in order to select first tier tests	Selects and prioritizes testing options across a broad spectrum of complex disorders and inheritance patterns/ mechanisms	Contributes to the knowledge base for the refinement of ambiguous
Identifies the components of the genetics test result	Identifies resources to facilitate interpretation of positive, negative, and uncertain test results	Uses resources to interpret diagnostic test results in the context of the phenotype	Uses resources to interpret ambiguous test results in the context of the phenotype	test results
Recognizes the availability of intervention for some genetic conditions	Identifies resources and guidelines for treatment and management of common genetic conditions	Implements treatment and/or surveillance plans for common genetic conditions	Implements treatment and/or surveillance plans for complex genetic conditions	Creates evidence-based guidelines for management
Comments:				

Patient Care 3: Pre- and Post-Test Genetic Counseling				
Level 1	Level 2	Level 3	Level 4	Level 5
Participates in pre-test counseling	Explains the rationale for the recommended testing	Conveys the impact and limitations of disorder- specific targeted testing while obtaining informed consent	Clearly conveys the impact and limitations of complex untargeted testing while obtaining informed consent	Participates in the development of professional practice guidelines regarding testing and return of results
Participates in post-test counseling	Explains the results of the test	Conveys the impact and limitations of diagnostic and non-diagnostic results	Conveys the impact and limitations of unexpected and ambiguous results	
Comments: Not Yet Completed Level 1				

## Medical Knowledge 1: Foundations of Genetics and Genomics

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates basic medical knowledge of embryology, inheritance, and genetic mechanism of disease	Applies knowledge of embryology, inheritance, and genetic mechanism of disease to identify a differential diagnosis	Applies advanced knowledge of embryology, inheritance, and genetic mechanism of disease to make a diagnosis	Applies advanced knowledge of embryology, inheritance, and genetic mechanism of disease to diagnostic and therapeutic interventions	Contributes to peer- reviewed resources addressing genetic mechanism of disease
Demonstrates basic medical knowledge of gene and genome structure and function	Applies knowledge of gene and genome structure and function to identify a differential diagnosis	Applies advanced knowledge of gene and genome structure and function to make a diagnosis	Applies advanced knowledge of gene and genome structure and function to diagnostic and therapeutic interventions	Recognized as a national expert in diagnosis and management of genetic disease
Comments: Not Yet Completed Level 1				

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Medical Knowledge 2: Clinical Genetics and Genomics				
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes syndromic and non-syndromic etiologies	Identifies syndromic and non-syndromic etiologies	Demonstrates knowledge of syndromic and non- syndromic etiologies and the impact on diagnosis and management	Applies knowledge of syndromic and non- syndromic etiologies to diagnosis and management	Serves as an expert resource for syndromic and/or non-syndromic etiologies
Recognizes that phenotypes evolve across the lifespan	Identifies the changes of phenotypes across the lifespan	Demonstrates knowledge of the changes in phenotypes across the lifespan and how it impacts diagnosis and management	Applies knowledge of the changes in phenotypes across the lifespan and how it impacts diagnosis and management	Contributes to peer- reviewed resources addressing natural history of genetic disease
Comments: Not Yet Completed Level 1				

Medical Knowledge 3: Clinical Reasoning				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates a basic framework for clinical reasoning	Demonstrates clinical reasoning to determine relevant information	Synthesizes information to inform clinical reasoning, with assistance	Independently synthesizes information to inform clinical reasoning in complex cases	Develops a novel approach for the assessment of complex
Identifies appropriate resources to inform clinical reasoning	Selects relevant resources based on scenario to inform decisions	Seeks and integrates evidence-based information to inform diagnostic decision making in complex cases, with assistance	Independently seeks out, analyzes and applies relevant original research to diagnostic decision making in complex clinical cases	cases
Comments: Not Yet Completed Level 1				

Systems-Based Practice	e 1: Patient Safety and Qual	ity Improvement		
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of common patient safety events	Identifies system factors that lead to patient safety events	Participates in analysis of patient safety events (simulated or actual)	Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)	Actively engages teams and processes to modify systems to prevent patient safety events
Demonstrates knowledge of how to report patient safety events	Reports patient safety events through institutional reporting systems (simulated or actual)	Participates in disclosure of patient safety events to patients and 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 local (institutional) quality improvement initiatives	Participates in local (institutional) 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 (state/federal) level
Comments: Not Yet Completed Level 1				

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of care coordination	Coordinates care of patients in routine clinical situations effectively using the roles of the interprofessional teams, including non-physician patient caregivers	Coordinates care of patients in complex clinical situations effectively using the roles of the interprofessional teams	Role models effective coordination of patient- centered care among different disciplines and specialties including referrals and testing	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, referrals, and testing	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 the 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 including advocating for a patient's genetic testing coverage	Leads innovations and advocates for populations and communities with health care inequities at the state or federal level

# 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 complex health care system (e.g., hospital, skilled nursing facility, finance, personnel, technology)	Describes how components of a complex health care system are interrelated, and how this impacts patient care	Discusses how individual practice affects the broader system (e.g., access to genetic testing and treatments, testing advocacy)	Manages various components of the complex health care system to provide efficient and effective patient care and transition of care	Advocates for or leads systems change that enhances high-value, efficient, and effective patient care and transition of care
Describes 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) and access to genetic testing or formula	Engages with patients in shared decision making, often informed by each patient's payment models	Advocates for patient care needs (e.g., community resources, patient assistance resources) with consideration of the limitations of each patient's payment model, including genetic testing through research	Participates in health policy advocacy activities
Identifies basic knowledge for effective transition to practice (e.g., information technology, legal, billing and coding, financial, personnel)	Demonstrates use of information technology required for medical practice (e.g., electronic health record, documentation required for billing and coding)	Describes core administrative knowledge needed for transition to practice (e.g., contract negotiations, malpractice insurance, government regulation, compliance)	Analyzes individual practice patterns and professional requirements in preparation for practice	Educates others to prepare them for transition to practice
Comments:			Net Vet C	
Comments:			Not Yet C	ompleted Le

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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 in order to take care of a routine patient	Articulates clinical questions and elicits patient preferences and values in order to guide evidence-based care	Locates and applies the best available evidence, integrated with patient preference, to the care of complex patients	Critically appraises and applies evidence even in the face of uncertainty and conflicting evidence to guide care, tailored to the individual patient	Mentors others to critically appraise and apply evidence for complex patients; and/or participates in the development of guidelines
Comments:				

Level 1	Level 2	Level 3	Level 4	Level 5
Accepts responsibility for personal and professional development by establishing goals	Demonstrates openness to performance data (feedback and other input) in order to inform goals	Seeks performance data episodically, with adaptability and humility	Seeks performance data consistently with adaptability and humility	Serves as a role model in seeking performance data with adaptability and humility
Identifies the factors which contribute to gap(s) between expectations and actual performance	Analyzes and reflects on the factors which contribute to gap(s) between expectations and actual performance	Analyzes, reflects on, and institutes behavioral change(s) to narrow the gap(s) between expectations and actual performance	Challenges assumptions and considers alternatives in narrowing the gap(s) between expectations and actual performance	Mentors 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: Professional Behavior and Ethical Principles**

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates compassion, sensitivity, honesty and integrity, and identifies potential triggers for professionalism lapses	Demonstrates compassion, sensitivity, honesty and integrity, and takes responsibility for own professionalism lapses	Demonstrates compassion, sensitivity, honesty, and integrity in complex/stressful situations	Demonstrates compassion, sensitivity, honesty, and integrity and serves as a role model to others	Coaches others when their behavior fails to meet professional expectations
Demonstrates knowledge of the ethical principles underlying patient care	Analyzes straightforward situations using ethical principles	Recognizes need to seek help in managing and resolving complex ethical situations	Recognizes and 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
Demonstrates basic knowledge of conflict of interest	Identifies different types of conflicts of interest, knows guidelines for interactions with vendors	Identifies resources for managing and resolving conflicts of interest	Demonstrates consistently professional behavior with regard to conflicts of interest relevant to presentations, publishing, consulting, and service	
Comments:				
			Not Yet C	ompleted Level 1

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## Professionalism 2: Accountability/Conscientiousness

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 and addresses situations that may impact others' ability to complete tasks and responsibilities in a	Volunteers to improve and takes ownership of system outcomes
Responds promptly to requests or reminders to complete tasks and responsibilities	Recognizes situations that may impact his/her own ability to complete tasks and responsibilities in a timely manner	Proactively implements strategies to ensure that the needs of patients, teams, and systems are met	timely manner	
Recognizes the role of appearance, daily demeanor and conduct in the role of a professional	Demonstrates a professional appearance, daily demeanor, and conduct	Sets a standard for appearance, daily demeanor, and conduct as a professional	Promotes professional appearance, demeanor, and conduct in their peers and associates	
Comments:				

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

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

Interpersonal and 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	Checks own understanding of consultant recommendations	Coordinates recommendations from different members of the health care team to optimize patient care	Role models flexible communication strategies that value input from all health care team members, resolving conflict when needed
Respectfully receives a consultation request	Clearly and concisely responds to a consultation request	Checks requestor's understanding of recommendations when providing consultation	Provides information to the primary care team regarding rationale for recommendations	
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	Models active listening to other health care team members	
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 records information in the patient record	Demonstrates organized diagnostic and therapeutic reasoning through notes in the patient record	Concisely reports diagnostic and therapeutic reasoning in the patient record	Communicates clearly, concisely, timely, and in an organized written form, including anticipatory guidance	Models feedback to improve others' written communication
Safeguards patient personal health information	Uses documentation shortcuts accurately, appropriately and in a timely manner	Appropriately selects direct (e.g., telephone, in- person) and indirect (e.g., progress notes, text messages) forms of communication based on	Achieves written or verbal communication (e.g., patient notes, e- mail) that serves as an example for others to follow	Guides departmental or institutional communication around policies and procedures
	Documents required data in formats specified by institutional policy	context		
Comments: Not Yet Completed Level 1				