

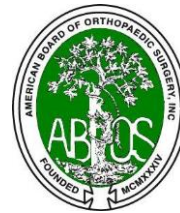
The Orthopaedic Trauma Milestone Project

A Joint Initiative of

The Accreditation Council for Graduate Medical Education

and

The American Board of Orthopaedic Surgery



July 2015

The Orthopaedic Trauma Milestone Project

The Milestones are designed only for use in evaluation of fellows in the context of their participation in ACGME-accredited residency or fellowship programs. The Milestones provide a framework for 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.

Orthopaedic Trauma Milestones

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Milestone Reporting

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

For each period, review and reporting will involve selecting milestone levels that best describe a fellow's current performance and attributes. Milestones are arranged into numbered levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert in the subspecialty.

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

- Level 1:** The fellow demonstrates milestones expected of an incoming fellow.
- Level 2:** The fellow is advancing and demonstrates additional milestones, but is not yet performing at a mid-fellowship level.
- Level 3:** The fellow continues to advance and demonstrate additional milestones, consistently including the majority of milestones targeted for fellowship.
- Level 4:** The fellow has advanced so that he or she now substantially demonstrates the milestones targeted for fellowship. This level is designed as the graduation target.
- Level 5:** The fellow has advanced beyond performance targets set for fellowship and is demonstrating "aspirational" goals which might describe the performance of someone who has been in practice for several years. It is expected that only a few exceptional fellows will reach this level.

Additional Notes

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

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

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

Answers to Frequently Asked Questions about Milestones are available on the Milestones web page:
<http://www.acgme.org/acqmeweb/Portals/0/MilestonesFAQ.pdf>.

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.

Care of multiply injured patient — Medical Knowledge				
Level1	Level2	Level3	Level4	Level5
<ul style="list-style-type: none"> • Understands the basic pathophysiology of the multiply injured patient • Understands principles of damage control and early total care • Understands sources of bleeding • Lists associated injury patterns (e.g., vascular injury with knee dislocation, femoral neck/shaft) 	<ul style="list-style-type: none"> • Understands the spectrum of instability of the multiply injured patient • Understands the contribution of pelvic injury to hemodynamic status • Lists strategies for treatment of injuries • Demonstrates basic knowledge of the literature regarding the management of the multiply injured patient 	<ul style="list-style-type: none"> • Demonstrates understanding of complex pathophysiology of the multiply injured patient • Demonstrates knowledge of the literature regarding damage control and early total care • Understands methods for pelvic stabilization to control hemorrhage • Discusses treatment strategies focused on prioritization of injuries • Demonstrates basic knowledge of the controversies regarding the management of the multiply injured patient 	<ul style="list-style-type: none"> • Understands the nuances of trauma • Understands the nuances of appropriate total care • Understands pelvic bleeding algorithm • Understands complexities of management of associated injury patterns • Demonstrates comprehensive knowledge of current and classic literature 	<ul style="list-style-type: none"> • Performs original research on the management of the multiply injured patient • Teaches basic and advanced principles of the management of the multiply injured
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				

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).

Care of multiply injured patient — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Identifies unstable pelvic ring injury • Assesses a multiply injured patient • Identifies the need for multispecialty involvement • Provisionally stabilizes extremity and pelvic injuries • Applies extremity external fixator with supervision • Recognizes the need for prophylaxis and intervention in coagulation issues (e.g., venous thromboembolism [VTE] prophylaxis, hypercoagulability) 	<ul style="list-style-type: none"> • Identifies an unstable patient • Prioritizes musculoskeletal injuries • Facilitates timely consultation with other services (e.g., angio, vascular) • Prioritizes and interprets imaging and lab studies • Applies pelvic external fixator with supervision • Addresses rehabilitation and psychosocial needs of the multiply injured patient • Mobilizes the operating room (OR) for emergent care of the multiply injured patient 	<ul style="list-style-type: none"> • Develops plan for the resuscitative phase for the multiply injured patient • Develops plan for reconstructive phase for the multiply injured patient • Coordinates with other services to implement a plan with emphasis on prioritization of most urgent injuries • Adapts plan for skeletal stabilization based on patient factors and resuscitation status • Implements VTE protocol adjusted for the multiply injured patient 	<ul style="list-style-type: none"> • Implements appropriate total care plan for resuscitative phase for the multiply injured patient • Implements appropriate total care plan for reconstruction phase for the multiply injured patient • Implements bleeding algorithm- pelvic and extremity • Leads the coordination of patient care in the OR with other surgical services • Completes application of extremity and pelvic external fixation in acute trauma setting • Incorporates comprehensive knowledge of the current and classic literature into patient care decisions 	<ul style="list-style-type: none"> • Comprehensively manages multiply injured patient through the acute, reconstructive, and rehabilitative stages
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				

Care of multiply injured patient — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Understands the basic pathophysiology of the multiply injured patient • Understands principles of damage control and early total care • Understands sources of bleeding • Lists associated injury patterns (e.g., vascular injury with knee dislocation, femoral neck/shaft) 	<ul style="list-style-type: none"> • Understands the spectrum of instability of the multiply injured patient • Understands the contribution of pelvic injury to hemodynamic status • Lists strategies for treatment of injuries • Demonstrates basic knowledge of the literature regarding the management of the multiply injured patient 	<ul style="list-style-type: none"> • Demonstrates understanding of complex pathophysiology of the multiply injured patient • Demonstrates knowledge of the literature regarding damage control and early total care • Understands methods for pelvic stabilization to control hemorrhage • Discusses treatment strategies focused on prioritization of injuries • Demonstrates basic knowledge of the controversies regarding the management of the multiply injured patient 	<ul style="list-style-type: none"> • Understands the nuances of trauma • Understands the nuances of appropriate total care • Understands pelvic bleeding algorithm • Understands complexities of management of associated injury patterns • Demonstrates comprehensive knowledge of current and classic literature 	<ul style="list-style-type: none"> • Performs original research on the management of the multiply injured patient • Teaches basic and advanced principles of the management of the multiply injured
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				

Complex Diaphyseal Fracture — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Obtains an accurate history and physical examination • Appropriately assesses soft tissue status • Orders appropriate imaging studies • Reduces simple fracture • Performs standard surgical approaches • Performs simple wound debridement with supervision • Demonstrates basic psychomotor skills of fracture fixation (e.g., use of depth gauge) • Develops immediate post-operative plan • Identifies common peri-operative complications 	<ul style="list-style-type: none"> • Creates basic pre-operative plan • Recognizes soft tissue conditions that require urgent treatment • Accurately interprets imaging studies • Performs standard surgical approaches with compromised soft tissue • Performs simple wound debridement independently • Executes simple fracture fixation • Addresses impact of patient factors on fracture treatment plan • Identifies complex peri-operative complications 	<ul style="list-style-type: none"> • Adjusts surgical tactic based on soft tissue considerations • Utilizes appropriate intra-operative imaging with guidance • Reduces complex fracture with supervision • Performs complex wound debridement with supervision • Executes complex fracture fixation with supervision • Treats common peri-operative complications (e.g., infection, nonunion, deep vein thrombosis [DVT]) 	<ul style="list-style-type: none"> • Creates comprehensive pre-operative plan for optimal fixation strategy • Utilizes appropriate intra-operative imaging independently • Reduces complex fracture independently • Performs alternative approaches • Performs complex wound debridement independently • Demonstrates proficiency in execution of complex fracture fixation • Develops complex post-operative management plans (short- and long-term) • Treats complex peri-operative complications • Incorporates comprehensive knowledge of the current and classic literature into patient care decisions 	<ul style="list-style-type: none"> • Performs revision fracture surgery of complex diaphyseal fractures
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				

Complex Diaphyseal Fracture — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Demonstrates knowledge of basic anatomy and surgical approaches • Understands and interprets basic imaging studies • Understands causes of pathologic fractures (e.g., infection, osteoporosis) • Understands normal and abnormal axial alignment • Understands indications for operative and non-operative care • Recognizes common complications • Understands bone healing • Knows fracture and soft tissue classifications • Generates a list of surgical strategies 	<ul style="list-style-type: none"> • Understands impact of fracture on normal anatomy • Understands and interprets complex imaging studies • Recognizes pathologic fractures • Understands the consequences of limb malalignment • Understands basic strategies for avoiding complications • Understand potential for bone loss/defect • Understands implications of soft tissue injury on fracture care • Understands the mechanical requirements and implant choices to achieve stable constructs • Demonstrates basic knowledge of the literature regarding diaphyseal fractures 	<ul style="list-style-type: none"> • Demonstrates knowledge of complex and combined approaches • Understands the work-up and treatment of pathologic fracture • Understands treatment options for complications • Demonstrates knowledge of treatment options for bone loss/defect • Demonstrates knowledge of current literature and alternative treatments 	<ul style="list-style-type: none"> • Understands controversies in the management of complex diaphyseal fractures • Understands three-dimensional fracture anatomy based on imaging studies • Understands techniques to restore alignment • Understands the nuances of fracture treatment options • Anticipates complications and identifies alternative strategies • Develops strategies for management of bone loss/defect • Incorporates soft tissue status in fracture management • Understands controversies in the management of diaphyseal fractures • Demonstrates comprehensive knowledge of current and classic literature 	<ul style="list-style-type: none"> • Performs original research on the management of complex diaphyseal fractures • Teaches basic and advanced principles of the management of complex diaphyseal fractures
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				

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Complex Periarticular Fractures — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Obtains an accurate history and physical examination • Appropriately assesses soft tissue status • Orders appropriate imaging studies • Performs simple metaphyseal fracture reduction • Performs standard surgical approaches • Demonstrates basic psychomotor skills of fracture fixation (e.g., use of depth gauge) • Develops immediate post-operative plan • Identifies common peri-operative complications 	<ul style="list-style-type: none"> • Creates basic pre-operative plan • Recognizes soft tissue conditions that require urgent treatment • Accurately interprets imaging studies • Performs simple articular fracture reduction and fixation • Performs standard surgical approaches with compromised soft tissue • Executes simple fracture fixation • Addresses impact of patient factors on fracture treatment plan • Identifies complex peri-operative complications 	<ul style="list-style-type: none"> • Adjusts surgical tactic based on soft tissue considerations • Utilizes appropriate intra-operative imaging with guidance • Reduces complex fracture with supervision • Executes complex fracture fixation with supervision • Treats common peri-operative complications 	<ul style="list-style-type: none"> • Creates comprehensive pre-operative plan for optimal fixation strategy • Utilizes appropriate intra-operative imaging independently • Reduces complex fractures independently • Performs complex and/or combined approaches • Demonstrates proficiency in execution of complex fracture fixation • Develops complex post-operative management plans (short- and long-term) • Treats complex peri-operative complications • Incorporates comprehensive knowledge of the current and classic literature into patient care decisions 	<ul style="list-style-type: none"> • Performs revision fracture surgery of complex periarticular fracture
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				

Complex Periarticular Fractures — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Demonstrates knowledge of basic anatomy and surgical approaches • Understands and interprets basic imaging studies • Understands normal and abnormal axial alignment • Understands indications for operative and non-operative care • Recognizes common complications • Understands bone and cartilage healing • Knows fracture and soft tissue classifications • Generates a list of surgical strategies 	<ul style="list-style-type: none"> • Understands and interprets complex imaging studies • Understands the consequences of limb and joint malalignment • Understands basic strategies for avoiding complications • Understands potential sequelae of bone and cartilage defects • Understands implications of soft tissue injury on fracture care • Understands the mechanical requirements and implant choices to achieve stable constructs • Demonstrates basic knowledge of the literature regarding periarticular fractures 	<ul style="list-style-type: none"> • Understands impact of fracture on normal anatomy • Understands techniques to restore articular and metaphyseal alignment • Understands treatment options for complications • Demonstrates knowledge of treatment options for bone and cartilage defects • Understands the indications for staged treatment • Demonstrates knowledge of current literature and alternative treatments 	<ul style="list-style-type: none"> • Demonstrates knowledge of complex and combined approaches • Understands three-dimensional fracture anatomy based on imaging studies • Understands the nuances of fracture treatment options • Anticipates complications and identifies alternative strategies • Develops strategies for management of bone and cartilage defects • Incorporates soft tissue status in fracture management • Understands controversies in the management of complex periarticular fractures • Demonstrates comprehensive knowledge of current and classic literature 	<ul style="list-style-type: none"> • Performs original research on the management of periarticular fractures • Teaches basic and advanced principles of the management of periarticular fractures
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				

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Nonunion/Malunion — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Obtains an accurate history and physical examination • Orders appropriate imaging studies and laboratory work-up (e.g., metabolic bone/infection) to evaluate nonunion/malunion • Identifies patient factors pertinent to nonunion management (e.g., smoking, nutrition) • Capable of basic bone graft harvesting with supervision • Capable of simple hardware removal 	<ul style="list-style-type: none"> • Formulates basic plan for treatment of nonunion • Recognizes and evaluates multiplanar limb deformity • Implements strategies to optimize host status • Independently performs basic bone graft harvesting 	<ul style="list-style-type: none"> • Performs a simple uniplanar osteotomy • Formulates basic plan for treatment of malunion/deformity correction • Addresses patient factors in treatment strategies, including appropriate consultations with other medical providers when needed • Performs complex hardware removal and nonunion debridement 	<ul style="list-style-type: none"> • Selects and executes multiplanar osteotomy to correct complex malunion • Achieves appropriate construct stability in the treatment of a nonunion or fixation of an osteotomy • Competent in the selection/performance of case-specific bone graft harvesting • Develops comprehensive post-operative management plans (short- and long-term) • Incorporates comprehensive knowledge of the current and classic literature into patient care decisions 	<ul style="list-style-type: none"> • Comprehensively manages a patient with a complex nonunion or malunion
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				

Nonunion/Malunion — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Understands local and systemic causes of fracture nonunion • Understands altered bone healing as it affects nonunion treatment • Understands non-operative methods to treat fracture nonunion • Understands the spectrum of fracture stability as it relates to nonunion surgery • Understands the imaging studies needed to evaluate nonunions and malunions • Demonstrates knowledge of normal limb alignment • Knows the indications for surgical treatment of malunion/deformity 	<ul style="list-style-type: none"> • Understands and interprets imaging studies to evaluate nonunion • Understands the implication of infection on the management of a nonunion • Understands the consequences of limb malalignment • Understands nonunion classifications and their impact on treatment • Understands options for bone graft and substitutes • Understands methods for removal of broken implants • Demonstrates basic knowledge of the literature regarding nonunions and malunions 	<ul style="list-style-type: none"> • Understands three-dimensional deformity anatomy based on imaging studies • Demonstrates basic knowledge of options for uniplanar deformity correction • Understands multiple strategies for management of bone loss/defect • Understands implications of chronic soft tissue damage on the management of nonunion • Understands the socioeconomic impact of nonunions 	<ul style="list-style-type: none"> • Demonstrates knowledge of multiple techniques for multiplanar deformity correction • Demonstrates a comprehensive understanding of the relationship of nutrition, endocrine, and other patient factors on management of nonunions and malunions • Understands nuances of various treatment alternatives for nonunions and malunions • Understands current controversies in management of nonunion/malunion • Demonstrates comprehensive knowledge of current and classic literature 	<ul style="list-style-type: none"> • Performs original research on the management of nonunions and malunions • Teaches basic and advanced principles of the management of nonunions and malunions
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				

Pelvic and Acetabular fractures — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Obtains an accurate history and physical examination • Appropriately assesses soft tissue status • Orders appropriate imaging studies • Recognizes common complications • Demonstrates basic psychomotor skills of fracture fixation (e.g., use of depth gauge) • Develops immediate post-operative plan • Identifies common peri-operative complications 	<ul style="list-style-type: none"> • Creates pre-operative plan for a pelvic ring injury • Recognizes soft tissue conditions that require urgent treatment • Accurately interprets imaging studies • Reduces simple pelvic fractures • Performs standard surgical approaches • Addresses impact of patient factors on fracture treatment plan • Identifies complex peri-operative complications 	<ul style="list-style-type: none"> • Creates pre-operative plan for simple acetabular fracture • Adjusts surgical tactic based on soft tissue considerations • Utilizes appropriate intra-operative imaging with guidance • Reduces acetabular fractures with supervision • Performs standard surgical approaches with compromised soft tissue • Places an iliosacral screw safely with supervision • Executes simple fracture fixation with supervision • Treats common peri-operative complications 	<ul style="list-style-type: none"> • Creates a pre-operative plan for a complex pelvic or acetabular fracture • Utilizes appropriate intra-operative imaging independently • Reduces simple fractures of the pelvis and acetabulum independently • Performs extensile or combined approaches • Independently places an iliosacral screw safely • Executes complex fracture fixation with supervision • Develops complex post-operative management plans (short- and long-term) • Treats complex peri-operative complications • Incorporates comprehensive knowledge of the current and classic literature into patient care decisions 	<ul style="list-style-type: none"> • Reduces complex fractures of the pelvis and acetabulum independently • Demonstrates proficiency in execution of complex fracture fixation
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				

Pelvic and Acetabular fractures — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Knows basic anatomy and surgical approaches • Understands and interprets basic imaging studies with recognition of relevant anatomic landmarks • Understands the implications of bone fragility on pelvic and acetabular fractures • Understands normal and abnormal pelvic ring alignment • Understands common complications • Knows fracture and soft tissue classifications • Generates a list of surgical strategies 	<ul style="list-style-type: none"> • Understands detailed anatomy of pelvis and acetabulum • Understands and interprets complex imaging studies • Recognizes fragility fractures • Understands the consequences of malalignment of the pelvis and acetabulum • Understands indications for operative and non-operative care • Understands basic strategies for avoiding complications • Understands implications of soft tissue injury on fracture care • Understands the mechanical requirements and implant choices to achieve stable construct • Demonstrates basic knowledge of the literature regarding pelvic and acetabular fractures 	<ul style="list-style-type: none"> • Understands complex and combined approaches • Understands the work up and treatment of fragility fracture • Understands treatment options for complications • Demonstrates knowledge of current literature and alternative treatments 	<ul style="list-style-type: none"> • Understands implications of extended iliofemoral versus combined approaches • Understands three-dimensional fracture anatomy based on imaging studies • Understands the role of arthroplasty and alternate fixation techniques for pathologic bone • Understands techniques to restore alignment and articular congruency • Understands the nuances of fracture treatment options • Anticipates complications and identifies alternative strategies • Incorporates soft tissue status in fracture management • Understands controversies in the management of pelvis and acetabular fractures • Demonstrates comprehensive knowledge of current and classic literature 	<ul style="list-style-type: none"> • Performs original research on the management of pelvic and acetabular fractures • Teaches basic and advanced principles of the management of pelvic and acetabular fractures
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				

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Systems thinking, including cost-effective practice — Systems-based Practice				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Describes basic levels of systems of care (e.g., self-management to societal) • Understands the economic challenges of patient care in the health care system 	<ul style="list-style-type: none"> • Gives examples of cost and value implications of care he or she provides (e.g., gives examples of alternate sites of care resulting in different costs for individual patients) 	<ul style="list-style-type: none"> • Orders and schedules tests in appropriate systems for individual patients, balancing expenses and quality • Successfully navigates the economic differences of the health care system • Advocates for patient regarding socioeconomic challenges within the health care system 	<ul style="list-style-type: none"> • Uses evidence-based guidelines for cost-effective care • Critically analyzes new technology and impact on patient care and safety 	<ul style="list-style-type: none"> • Leads systems change at micro and macro levels (e.g., manages OR team and patient flow in a multi-case OR day)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not yet achieved Level 1 <input type="checkbox"/>

Fellow will work in interprofessional teams to enhance patient safety, quality care, and safe health care delivery — Systems-based Practice				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> Recognizes importance of complete and timely documentation in teamwork and patient safety 	<ul style="list-style-type: none"> Uses checklists and briefings to prevent adverse events in health care Oversees safe transfer of care from the OR to inpatient and outpatient settings 	<ul style="list-style-type: none"> Participates in quality improvement or patient safety program and/or project Reconciles conflicting data in the medical record Oversees the safe transfer of an inpatient trauma patient to an outpatient (home) or skilled nursing facility 	<ul style="list-style-type: none"> Maintains team situational awareness and promotes “speaking up” with concerns Incorporates clinical quality improvement and patient safety into clinical practice Contributes to reduction of risks of automation and computerized systems by reporting system problems 	<ul style="list-style-type: none"> Develops and publishes quality improvement project results Leads local or regional quality improvement project Recommends systems re-design for faculty computerized processes
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not yet achieved Level 1 <input type="checkbox"/>

Self-directed Learning —Practice-based Learning and Improvement				
<ol style="list-style-type: none"> 1. Identify strengths, deficiencies, and limits in one’s knowledge and expertise. 2. Assess patient outcomes and complications in your own practice. 3. Set learning and improvement goals. 4. Identify and perform appropriate learning activities. 5. Use information technology to optimize learning and improve patient outcomes. 				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Acknowledges gaps in personal knowledge and expertise, and frequently asks for feedback from teachers and colleagues • Demonstrates computer literacy and basic computer skills in clinical practice 	<ul style="list-style-type: none"> • Continually assesses performance by evaluating feedback and assessments • Develops a learning plan based on feedback with some external assistance • Demonstrates use of published review articles or guidelines to review common topics in practice • Uses patient care experiences to direct learning 	<ul style="list-style-type: none"> • Accurately assesses areas of competence and deficiencies, and modifies learning plan • Demonstrates the ability to select an appropriate evidence-based information tool to answer specific questions while providing care 	<ul style="list-style-type: none"> • Performs self-directed learning without external guidance • Critically evaluates and uses patient outcomes and literature to improve patient care • Teaches residents and others in assessment of patient outcomes 	<ul style="list-style-type: none"> • Develops and teaches practice change based upon new evidence
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not yet achieved Level 1 <input type="checkbox"/>

Locate, appraise, and assimilate evidence from scientific studies to improve patient care — Practice-based Learning and Improvement				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Describes basic concepts in clinical epidemiology, biostatistics, and clinical reasoning • Categorizes the study design of a research study 	<ul style="list-style-type: none"> • Ranks study designs by their level of evidence • Identifies bias affecting study validity • Formulates a searchable question from a clinical question 	<ul style="list-style-type: none"> • Applies a set of critical appraisal criteria to different types of research, including synopses of original research findings, systematic reviews and meta-analyses, and clinical practice guidelines • Critically evaluates information from others, including colleagues, experts, industry representatives, and patients 	<ul style="list-style-type: none"> • Demonstrates a clinical practice that incorporates principles and basic practices of evidence-based practice and information mastery • Cites evidence supporting several common practices • Independently teaches and assesses evidence-based medicine and information mastery techniques 	<ul style="list-style-type: none"> • Produces evidence based research to change and improve patient care
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not yet achieved Level 1 <input type="checkbox"/>

Compassion, integrity, and respect for others, as well as sensitivity and responsiveness to diverse patient populations, including diversity in gender, age, culture, race, religion, disabilities, and sexual orientation. Knowledge about respect for and adherence to the ethical principles relevant to the practice of medicine, remembering in particular that responsiveness to patients that supersedes self-interest is an essential aspect of medical practice — Professionalism				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Consistently demonstrates behavior that conveys caring, honesty, and genuine interest in patients and families • Recognizes the diversity of patient populations with respect to gender, age, culture, race, religion, disabilities, sexual orientation, and socioeconomic status • Recognizes the importance and priority of patient care, with an emphasis on the care that the patient wants and needs; demonstrates a commitment to this value 	<ul style="list-style-type: none"> • Demonstrates an understanding of the importance of compassion, integrity, respect, sensitivity, and responsiveness while exhibiting these attitudes consistently in common and uncomplicated situations • Consistently recognizes ethical issues in practice; discusses, analyzes, and manages these in common and frequent clinical situations, including socioeconomic variances in patient care 	<ul style="list-style-type: none"> • Exhibits these attitudes consistently in complex and complicated situations • Recognizes how own personal beliefs and values impact medical care • Is knowledgeable about the beliefs, values, and practices of diverse patient populations and the potential impact of these on patient care • Recognizes ethical violations in professional and patient aspects of medical practice 	<ul style="list-style-type: none"> • Develops and uses an integrated and coherent approach to understanding and effectively working with others to provide good medical care that integrates personal standards with standards of medicine • Consistently considers and manages ethical issues in practice 	<ul style="list-style-type: none"> • Demonstrates leadership and mentoring regarding these principles of bioethics • Manages ethical misconduct in patient management and practice
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not yet achieved Level 1 <input type="checkbox"/>

Accountability to patients, society, and the profession; personal responsibility to maintain emotional, physical, and mental health – Professionalism				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> • Understands when assistance is needed and is willing to ask for help • Exhibits basic professional responsibilities, such as timely reporting for duty, being rested and ready to work, displaying appropriate attire and grooming, and delivering patient care as a functional physician • Is aware of the basic principles and aspects of the general maintenance of emotional, physical, mental health, and issues related to fatigue/sleep deprivation 	<ul style="list-style-type: none"> • Recognizes limits of knowledge in common clinical situations and asks for assistance • Recognizes value of humility and respect towards patients and associate staff members • Demonstrates adequate management of personal, emotional, physical, and mental health, and fatigue 	<ul style="list-style-type: none"> • Consistently recognizes limits of knowledge in uncommon and complicated clinical situations; develops and implements plans for the best possible patient care • Assesses application of principles of physician wellness, alertness, delegation, teamwork, and optimization of personal performance to the practice of medicine • Seeks out assistance when necessary to promote and maintain personal, emotional, physical, and mental health 	<ul style="list-style-type: none"> • Mentors and models personal and professional responsibility to colleagues • Recognizes signs of physician impairment and demonstrates appropriate steps to address impairment in colleagues • Practices consistent with the American Academy of Orthopaedic Surgeons (AAOS) Standards of Professionalism • Demonstrates a commitment to provide care for all patients regardless of ability to pay • Demonstrates commitment to provide call coverage 	<ul style="list-style-type: none"> • Develops organizational policies and education to support the application of these principles in the practice of medicine
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not yet achieved Level 1 <input type="checkbox"/>

Communication — Interpersonal and Communication Skills				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> Communicates effectively with patients and families (e.g., obtains informed consent, avoids being a source of conflict) 	<ul style="list-style-type: none"> Provides detailed information about patient care 	<ul style="list-style-type: none"> Communicates competently in difficult patient circumstances 	<ul style="list-style-type: none"> Intercedes and resolves existing interpersonal conflicts 	<ul style="list-style-type: none"> Demonstrates leadership in communication activities (e.g., coaches others to improve communication skills, engages in self-reflection on how to improve communication skills)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not yet achieved Level 1 <input type="checkbox"/>

Teamwork (e.g., physician, nursing and allied health care providers, administrative and research staff) — Interpersonal and Communication Skills				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> Recognizes and communicates critical patient information in a timely and accurate manner to other members of the treatment team Recognizes and communicates role as a team member to patients and staff members Responds to requests for information <p><i>Examples:</i> Lab results, accurate and timely progress notes, answers pages in a timely manner</p>	<ul style="list-style-type: none"> Supports and respects decisions made by team Actively participates in team-based care; supports activities of other team members, and communicates their roles to the patient and family <p><i>Examples:</i> Hand-offs, transitions of care, communicates with other health care providers and staff members</p>	<ul style="list-style-type: none"> Facilitates, directs, and delegates team-based patient care activities Understands the OR team leadership role and obligations <p><i>Examples:</i> Supervises daily rounds, communicates plan of action with OR personnel</p>	<ul style="list-style-type: none"> Leads team-based care activities and communications Identifies and rectifies problems with team communication Effectively advocates for the musculoskeletal needs of the multiply injured patient <p><i>Example:</i> Supervises and verifies hand-off rounds, coverage issues</p>	<ul style="list-style-type: none"> Seeks leadership opportunities within professional organizations Leads/facilitates meetings within organization/system Resolves conflicts between multispecialty trauma teams
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not yet achieved Level 1 <input type="checkbox"/>