The Foot and Ankle Milestone Project

A Joint Initiative of

The Accreditation Council for Graduate Medical Education

and

The American Board of Orthopaedic Surgery

July 2015

The Foot and Ankle Milestone Project

The milestones are designed only for use in evaluation of the fellow in the context of their participation in ACGME-accredited residency or fellowship programs. The milestones provide a framework for the assessment of the development of the fellow in key dimensions of the elements of physician competency in a specialty or subspecialty. They neither represent the entirety of the dimensions of the six domains of physician competency, nor are they designed to be relevant in any other context.

Foot and Ankle 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

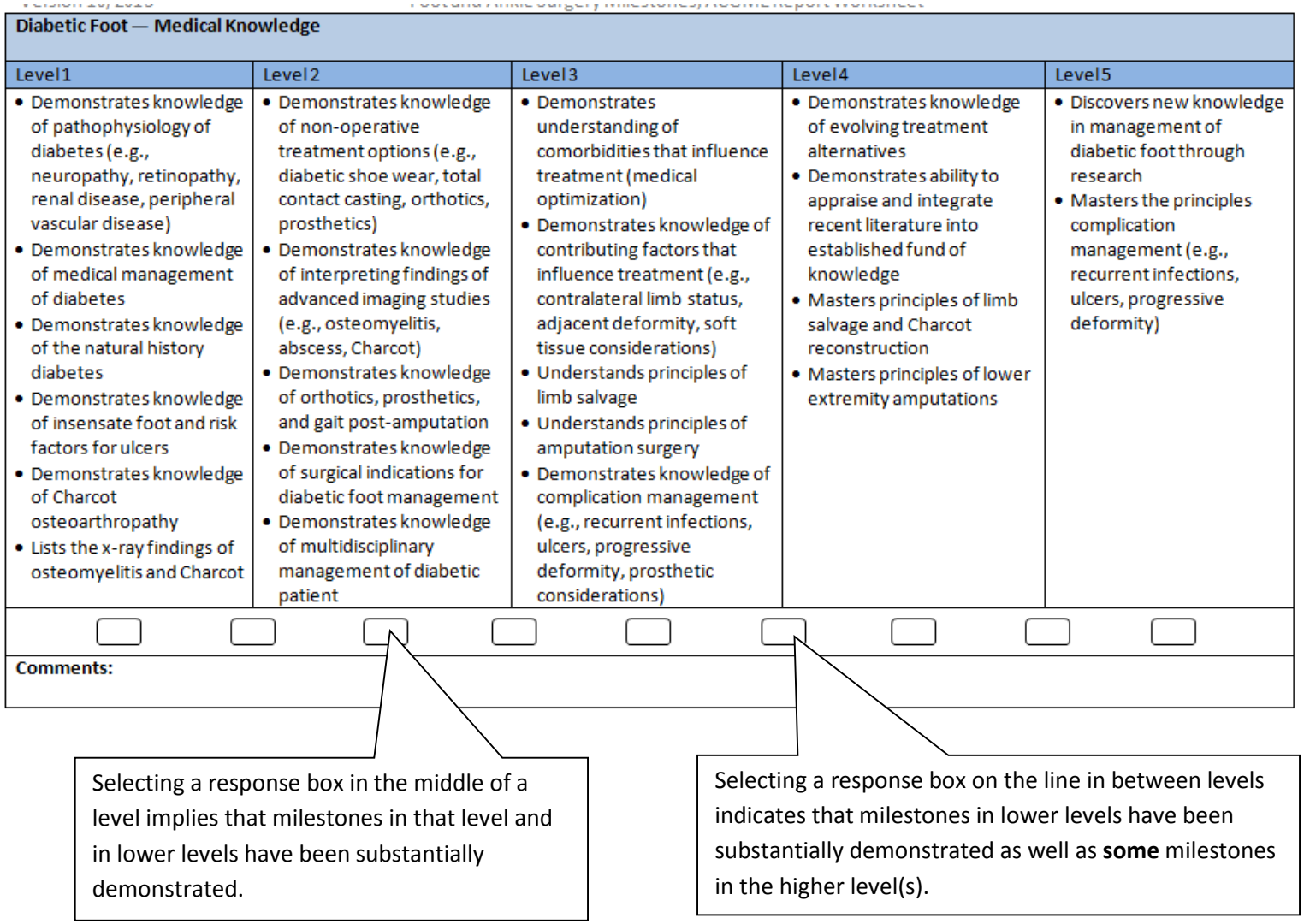
Level 4 is designed as the graduation *target* and *does not* represent a graduation *requirement*. Making decisions about readiness for graduation is the purview of the fellowship program director. Study of Milestone performance data will be required before the ACGME and its partners will be able to 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/acgmeweb/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 the milestones.



Diabetic Foot — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
• Demonstrates knowledge of pathophysiology of diabetes (e.g., neuropathy, retinopathy, renal disease, peripheral vascular disease) • Demonstrates knowledge of medical management of diabetes • Demonstrates knowledge of the natural history diabetes • Demonstrates knowledge of insensate foot and risk factors for ulcers • Demonstrates knowledge of Charcot osteoarthropathy • Lists the x-ray findings of osteomyelitis and Charcot	• Demonstrates knowledge of non-operative treatment options (e.g., diabetic shoe wear, total contact casting, orthotics, prosthetics) • Demonstrates knowledge of interpreting findings of advanced imaging studies (e.g., osteomyelitis, abscess, Charcot) • Demonstrates knowledge of orthotics, prosthetics, and gait post-amputation • Demonstrates knowledge of surgical indications for diabetic foot management • Demonstrates knowledge of multidisciplinary management of diabetic patient	• Demonstrates understanding of comorbidities that influence treatment (medical optimization) • Demonstrates knowledge of contributing factors that influence treatment (e.g., contralateral limb status, adjacent deformity, soft tissue considerations) • Understands principles of limb salvage • Understands principles of amputation surgery • Demonstrates knowledge of complication management (e.g., recurrent infections, ulcers, progressive deformity, prosthetic considerations)	• Demonstrates knowledge of evolving treatment alternatives • Demonstrates ability to appraise and integrate recent literature into established fund of knowledge • Masters principles of limb salvage and Charcot reconstruction • Masters principles of lower extremity amputations	• Discovers new knowledge in management of diabetic foot through research • Masters the principles complication management (e.g., recurrent infections, ulcers, progressive deformity)
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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).

Achilles Disorders — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Obtains a focused history to assess risk factors for disease development (e.g., comorbidities, prior trauma, weight, activities) • Performs a focused examination to assess associated/predisposing factors (e.g., gastrocnemius equinus contracture, bony impingement) • Orders and interprets x-rays with respect to Achilles pathoanatomy • Performs routine post-operative management	• Understands and prescribes non-operative treatment (e.g., therapy, heel lift, brace, non-steroidal anti-inflammatory drugs [NSAIDs], activity modification, immobilization, weight loss) • Assesses the outcomes of non-operative treatment (e.g., patient compliance, efficacy) • Performs primary repairs and secondary reconstructions with supervision • Provides post-operative management after repair/reconstruction • Identifies and treats minor complications	• Interprets patient-specific information to formulate treatment options • Performs primary Achilles tendon repair independently • Performs secondary repairs/reconstructions with minimal supervision • Performs complex/revision Achilles tendon reconstruction with supervision • Understands and institutes the management of complex/infected/neglected post-operative repair • Manages and modifies post-operative management based on clinical circumstances • Identifies major complications and develops treatment options	• Interprets patient-specific information and formulates clinical decision-making for complex cases • Performs secondary Achilles tendon repairs/reconstructions independently • Performs complex/revision Achilles tendon reconstruction with minimal supervision • Identifies and treats major complications	• Develops high level outcome studies evaluating treatment alternatives • Performs complex/revision Achilles tendon reconstruction independently
☐	☐	☐	☐	☐	☐	☐	☐	☐
Comments:				

Achilles Disorder — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
• Demonstrates knowledge of relevant anatomy of the Triceps Surae and the surgical exposures of the posterior ankle and leg • Lists the x-ray findings of Achilles tendon disorders (e.g., spur, calcification) • Lists the magnetic resonance imaging [MRI] findings of Achilles tendon disorders (e.g., peritendinitis, tendinosis, retrocalcaneal bursitis, attrition, acute rupture) • Lists the etiologies of Achilles tendon disorders (e.g., inflammatory disease, overuse, trauma, degenerative) • Demonstrates knowledge of the natural history of Achilles tendon disorders (insertional vs. non-insertional)	• Demonstrates knowledge of non-operative treatment options (e.g., NSAIDs, heel lifts, physical therapy, ionto/phonophoresis, weight loss, immobilization, extracorporeal shock wave therapy [ESWT]) • Lists risk factors in Achilles tendon disorders (e.g., Equinus contracture, overuse, fluoroquinolones) • Demonstrates knowledge of surgical indications • Demonstrates knowledge of biomechanical considerations of repair techniques (e.g., strength, suture materials, and suture pattern)	• Demonstrates knowledge of MRI findings that influence treatment (e.g., extent of disease, location, osseous involvement) • Demonstrates knowledge of contributing factors that influence treatment (e.g., smoking, weight, comorbidities, immunosuppressive medications, soft-tissue quality, social factors) • Demonstrates knowledge of outcome of operative vs. non-operative care of acute Achilles rupture • Demonstrates knowledge of minimally invasive techniques (e.g., endoscopy, minimal incision acute repair) • Demonstrates knowledge of secondary repair techniques for chronic tendinopathies (e.g., flexor hallucis longus [FHL] transfer, debridement and repair, role of allograft augmentation)	• Demonstrates knowledge of evolving treatment alternatives (e.g., gastrocnemius recession, platelet rich plasma [PRP] injection, radio coblation) • Demonstrates ability to appraise and integrate recent literature into established fund of knowledge • Demonstrates knowledge of risks and complications associated with different techniques • Demonstrates knowledge of managing re-rupture following operative or non-operative treatment • Demonstrates knowledge of managing post-operative wound dehiscence and/or infection	• Develops accelerated rehabilitation techniques based on musculoskeletal anatomy and physiology • Discovers new knowledge in management of Achilles disorders through research
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Comments:				

Ankle Arthritis — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Obtains a focused history to assess risk factors for arthritis (e.g., comorbidities, weight, activities, prior trauma) • Performs a focused examination to assess associated/predisposing factors (e.g., contracture, bony impingement) • Orders and interprets standing x-rays of the ankle • Performs routine post-operative management	• Identifies limb deformities, adjacent joint pathology, soft tissue imbalances, neurologic deficits • Orders all appropriate imaging studies, consults, labs • Prescribes appropriate non-operative treatment plan (e.g., bracing, injections, NASIDs, activity modification, weight loss) • Assesses the outcomes of non-operative treatment (e.g., patient compliance, clinical efficacy) • Performs arthrodesis with supervision • Provides post-operative management • Identifies and treats minor complications	• Interprets patient-specific information to formulate treatment options • Formulates a pre-operative plan for surgery (e.g., exposure, implants, specific procedural goals with a plan to avoid pitfalls) • Assesses and interprets efficacy of operative treatment (e.g., union, arthroplasty alignment and function, gait) • Performs routine arthrodesis with minimal supervision • Performs complex arthrodesis with supervision • Performs arthroplasty with supervision • Manages and modifies post-operative management based on clinical circumstances • Identifies major complications and develops treatment options	• Interprets patient-specific information and formulates clinical decision-making for complex cases • Performs routine and complex arthrodesis independently • Performs routine arthroplasty independently • Identifies and treats major complications	• Develops high level outcome studies evaluating treatment alternatives • Performs revision/complex arthroplasty independently • Performs limb salvage with advanced techniques independently (e.g., arthrodesis, bone transport, complex osteotomies)
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Comments:				

Ankle Arthritis — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
• Demonstrates knowledge of relevant anatomy of the ankle and its surgical exposures • Lists the x-ray findings of arthritis (e.g., osteophytes, joint space narrowing, subchondral cysts) • Lists the etiologies of arthritis (e.g., post-traumatic, inflammatory, infectious, primary) • Demonstrates knowledge of the natural history of the various types of arthritis	• Demonstrates knowledge of non-operative treatment options (e.g., shoe wear modifications, bracing, injections, NSAIDs, activity modification, weight loss) • Demonstrates knowledge of interpreting findings on advanced imaging studies (e.g., osteo necrosis, tumor, metabolic disease, infection) • Lists risk factors and describes the pathophysiology of arthritis • Demonstrates knowledge of ankle kinematics • Demonstrates knowledge of abnormal gait pattern characteristics of arthritis (e.g., antalgic, circumduction, stride length, shortened stance phase) • Demonstrates knowledge of surgical indications	• Demonstrates knowledge of imaging findings that influence treatment (e.g., adjacent joint pathology, bone quality/defects, limb malalignment) • Demonstrates knowledge of contributing factors that influence treatment (e.g., history of infection, comorbidities, range of motion [ROM], neuropathic, soft-tissue quality, social factors) • Understands the indications and contraindications for arthrodesis, arthroplasty, and osteotomy	• Demonstrates knowledge of evolving treatment alternatives • Demonstrates ability to appraise and integrate recent literature into established fund of knowledge • Understands principles of limb deformity correction • Understands principles of infection management • Demonstrates knowledge of complication management (e.g., dehiscence, infection, nonunion/malunion, soft tissue loss/defects)	• Discovers new knowledge in management of ankle arthritis through research
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Comments:				

Calcaneus Fractures — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Obtains a focused history to assess for risk factors for surgical treatment • Performs a focused foot and ankle exam to identify concomitant lower limb injuries • Assesses skin and soft-tissue and initiates management to reduce swelling • Identifies and manages skin at risk from displaced tuberosity fracture • Performs a secondary survey to assess for associated injuries (e.g., spine, pelvis injury) • Orders and interprets x-rays of the foot, including specialty views • Performs routine post-operative management • Performs provisional management of open fractures with supervision (e.g., operative debridement, fracture reduction)	• Provides patient education and obtains informed consent for operative management of calcaneus fractures • Performs non-operative treatment of calcaneus fractures • Orders and interprets computed tomography (CT) scan of the foot to characterize fracture • Performs open treatment of calcaneus fractures with supervision • Provides post-operative management • Performs provisional management of open fractures independently • Identifies and treats minor complications	• Performs open treatment of calcaneus fractures with minimal supervision • Performs percutaneous/minimally invasive calcaneus fracture surgery with supervision • Interprets patient-specific information to formulate treatment options for the management of complex calcaneal reconstructions (e.g., malunion, nonunion, infection) • Performs reconstruction of a simple calcaneus malunion with supervision • Recognizes and manages minor complications following operative treatment of calcaneus fractures	• Performs open treatment of calcaneus fractures independently • Performs primary subtalar arthrodesis with open reduction with internal fixation (ORIF) independently • Performs percutaneous/minimally invasive calcaneus fracture surgery independently • Performs reconstruction of a simple calcaneus malunion independently • Performs reconstruction of complex malunion/revision surgery with minimal supervision • Recognizes and manages major complications following operative treatment of calcaneus fractures	• Develops advanced treatment algorithms for calcaneus fracture management based on level (I or II) outcome studies • Performs reconstruction of complex malunion/revision surgery independently
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Comments:				

Calcaneus Fractures — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
• Demonstrates knowledge of relevant anatomy of the calcaneus and surgical exposures of the hindfoot • Lists the x-ray findings of calcaneus fractures on standard views of the foot • Lists the x-ray findings of calcaneus fractures on specialized views (e.g., Broden's, axial heel view) • Demonstrates knowledge of soft-tissue injury and its implications for treatment of calcaneus fractures • Recognizes the significance of open fractures of the calcaneus	• Demonstrates knowledge of hindfoot kinematics • Demonstrates knowledge of the classification of calcaneus fractures (e.g., intra- vs. extra-articular, joint depression vs. tongue-type) • Demonstrates knowledge of interpreting findings on CT scan to classify calcaneus fractures • Demonstrates knowledge of non-operative treatment options • Demonstrates knowledge of surgical indications • Demonstrates knowledge of surgical contraindications	• Understands the pathoanatomy of calcaneus fractures (primary and secondary fracture lines) • Demonstrates knowledge of the impact of altered hindfoot mechanics on function • Demonstrates knowledge of outcomes following non-operative treatment of calcaneus fractures • Demonstrates knowledge of contributing factors that influence treatment (e.g., smoking, comorbidities, immunosuppressive medications, soft-tissue condition, social factors) • Understands reduction and fixation principles for calcaneus fracture • Demonstrates knowledge of foot angiosomes and their role in avoiding wound complications • Demonstrates knowledge of post-operative management of calcaneus fractures	• Demonstrates knowledge of percutaneous and minimally invasive techniques • Demonstrates ability to appraise and integrate recent literature into established fund of knowledge • Demonstrates knowledge of the outcomes of ORIF of calcaneus fractures • Demonstrates knowledge of the outcomes of percutaneous/minimally invasive techniques for calcaneus fractures • Demonstrates knowledge of literature comparing open vs. percutaneous techniques	• Discovers new knowledge in the management of calcaneus fractures through research
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Comments:				

Diabetic Foot — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Obtains focused history to assess risk factors • Performs physical exam to assess associated/predisposing factors • Orders and interprets appropriate x-rays (e.g., infection, Charcot) • Assesses limb perfusion • Provides peri-operative management (e.g., pre- and post-operative orders, labs, consults, glycemic control, nutrition) • Identifies wet gangrene, abscess, and sepsis, and recognizes need for urgent operative management	• Orders and interprets advanced imaging studies (e.g., MRI, CT, Nuclear Medicine, Ultrasound) • Initiates multidisciplinary co-management (e.g., infectious disease, internal medicine, renal) • Identifies ischemic limb and obtains vascular surgery consult • Evaluates limb to distinguish infection from Charcot • Provide patient education concerning diabetic foot disease and Charcot process • Provides non-operative treatment (e.g., antibiotics, ulcer debridement, offloading, immobilization, bracing shoe wear) • Performs surgical management of infection and amputations (e.g., transmetatarsal amputation [TMA], Syme, below-the-knee amputation [BKA]) with supervision • Manages minor complications of treatment (cast ulcer)	• Interprets patient-specific information and findings with respect to treatment options (e.g., amputation vs. salvage) • Consistently differentiates infection vs. Charcot • Assesses and interprets efficacy of prescribed non-operative treatment • Formulates a surgical plan to avoid pitfalls (e.g., exposure, implants, operative goals, supplemental/combined fixation needs) • Performs surgical management of infection and amputations independently • Performs Charcot reconstructions with supervision	• Gathers and assesses all pertinent patient data for clinical decision-making • Manages and revises failed amputations • Performs Charcot reconstructions independently • Orchestrates comprehensive, interdisciplinary management of diabetic foot disease, including preventive measures	• Performs complex/Charcot reconstructions independently
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Comments:				

Diabetic Foot — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
• Demonstrates knowledge of pathophysiology of diabetes (e.g., neuropathy, retinopathy, renal disease, peripheral vascular disease) • Demonstrates knowledge of medical management of diabetes • Demonstrates knowledge of the natural history diabetes • Demonstrates knowledge of insensate foot and risk factors for ulcers • Demonstrates knowledge of Charcot osteoarthropathy • Lists the x-ray findings of osteomyelitis and Charcot	• Demonstrates knowledge of non-operative treatment options (e.g., diabetic shoe wear, total contact casting, orthotics, prosthetics) • Demonstrates knowledge of interpreting findings of advanced imaging studies (e.g., osteomyelitis, abscess, Charcot) • Demonstrates knowledge of orthotics, prosthetics, and gait post-amputation • Demonstrates knowledge of surgical indications for diabetic foot management • Demonstrates knowledge of multidisciplinary management of diabetic patient	• Demonstrates understanding of comorbidities that influence treatment (medical optimization) • Demonstrates knowledge of contributing factors that influence treatment (e.g., contralateral limb status, adjacent deformity, soft tissue considerations) • Understands principles of limb salvage • Understands principles of amputation surgery • Demonstrates knowledge of complication management (e.g., recurrent infections, ulcers, progressive deformity, prosthetic considerations)	• Demonstrates knowledge of evolving treatment alternatives • Demonstrates ability to appraise and integrate recent literature into established fund of knowledge • Masters principles of limb salvage and Charcot reconstruction • Masters principles of lower extremity amputations	• Discovers new knowledge in management of diabetic foot through research • Masters the principles complication management (e.g., recurrent infections, ulcers, progressive deformity)
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Comments:				

Hallux Valgus — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Obtains focused history to assess functional impairment and risk factors for deformity progression • Performs physical exam to assess forefoot and other deformities • Orders and interprets standing foot x-rays, including sesamoid views • Prescribes non-operative management (e.g., shoe wear modification, padding, insoles, splints) • Performs routine post-operative management	• Characterizes severity of hallux valgus by clinical and radiographic parameters • Assesses outcomes of non-operative treatment (e.g., compliance, efficacy) • Provides education and obtains informed consent (e.g., procedure, post-operative protocol, alternatives, risks and benefits, expected outcomes) • Performs routine hallux valgus surgery with supervision (e.g., osteotomy, arthrodesis, soft tissue realignment)	• Interprets patient-specific information and findings with respect to treatment options (e.g., soft tissue correction, osteotomy, fusion) • Formulates a pre-operative plan for surgery (e.g., exposure, implants, specific procedural goals with a plan to avoid pitfalls) • Performs routine hallux valgus surgical correction with minimal supervision • Performs complex hallux valgus surgical correction with supervision • Provides routine postop management (e.g., dressing, splint) • Recognizes and manages early post-operative complications (e.g., infection, hallux varus, hardware failure)	• Gathers and assesses all pertinent patient data for clinical decision-making • Performs routine and complex hallux valgus surgery independently • Demonstrates ability to treat all post-operative complications (e.g., neuroma, hallux varus, hardware failure, malunion, recurrence)	• Performs complex revision and salvage for failed hallux valgus surgery (e.g., interpositional bone graft, post infection, avascular necrosis [AVN]/failed implant)
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Comments:				

Hallux Valgus — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
• Demonstrates knowledge of relevant anatomy of the forefoot and its surgical exposures • Lists x-ray hallmarks of hallux valgus • Demonstrates ability to measure hallmarks (e.g., hallux valgus angle [HVA], intermetatarsal angle [IMA], distal metatarsal articular angle [DMAA], congruent vs. incongruent) • Lists the etiologies of hallux valgus • Demonstrates knowledge of natural history of hallux valgus (intrinsic vs. extrinsic)	• Demonstrates knowledge to distinguish hallux valgus from other causes of forefoot pain • Demonstrates knowledge of pathophysiology of hallux valgus • Demonstrates knowledge of interaction between hallux valgus and other forefoot pathology (e.g., lesser toe deformity) • Demonstrates knowledge of non-operative treatment options (e.g., shoe wear modifications, padding, insoles, splints) • Demonstrates knowledge of surgical indications	• Demonstrates knowledge of contributing factors that influence treatment (e.g., smoking, neuropathy, spasticity, rheumatoid arthritis [RA], planovalgus, adjacent joint pathology, hypermobility, metabolic bone disorders) • Understands biomechanical principles of fixation and implants used in surgery • Understands all options for correction of mild, moderate and severe hallux valgus (e.g., proximal vs. distal, congruent vs. incongruent, adjunct procedures, addition of soft tissue procedures)	• Demonstrates knowledge of evolving treatment alternatives • Demonstrates ability to appraise and integrate recent literature into established fund of knowledge, and articulates differing treatment philosophies • Demonstrate knowledge of complication management (e.g., hallux varus, recurrence, stiffness, neuroma, dehiscence, infection, malunion, deep vein thrombosis [DVT])	• Discovers new knowledge in management hallux valgus
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Comments:				

Ankle Arthroscopy: Osteochondritis Dissecans (OCD) Talus — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Obtains a focused history to assess risk factors for cartilage injury (e.g., history of trauma, instability, fracture, activities, comorbidities) • Performs a focused examination to assess associated/predisposing factors (e.g., Pes Cavus, generalized ligamentous laxity, tarsal coalition) • Performs diagnostic ankle arthroscopy with supervision • Performs routine post-operative management	• Formulates patient-specific differential diagnosis for chronic ankle pain (e.g., soft tissue impingement, OCD talus, arthritis, tumor) • Orders appropriate imaging studies (e.g., weight-bearing [WB] x-ray of the ankle and foot, stress views, MRI/CT scan) • Prescribes appropriate non-operative treatment (e.g., NSAIDs, activity modifications, bracing, physical therapy, injections) • Assesses the outcomes of non-operative treatment (e.g., patient compliance, clinical efficacy) • Performs diagnostic ankle arthroscopy independently • Performs ankle arthroscopic debridement soft tissue impingement lesions/OCD microfracture with supervision • Identifies and treats minor complications	• Formulates a pre-operative plan for surgery (e.g., exposure, implants, specific procedural goals with a plan to avoid pitfalls) • Performs ankle arthroscopic debridement soft tissue impingement lesions/OCD microfracture with minimal supervision • Performs ankle arthroscopic autologous chondrocyte implantation (ACI), osteochondral autograft transfer system (OATS)/allograft with supervision • Performs ankle arthroscopic fusion with supervision • Manages and modifies post-operative management based on clinical circumstances	• Performs ankle arthroscopic debridement soft tissue impingement lesions/OCD microfracture independently • Perform ankle arthroscopic ACI, OATS/allograft independently • Performs ankle arthroscopic fusion independently	• Develops advanced treatment algorithms for OCD management based on Level I or II outcome studies • Performs complex/revision OCD talus surgery independently
☐	☐	☐	☐	☐	☐	☐	☐	☐
Comments:				

Ankle Arthroscopy: Osteochondral Defects of the Talus — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
• Demonstrates knowledge of relevant anatomy of the ankle and surrounding soft tissues • Demonstrates knowledge of structures at risk during portal placement (e.g., nerves, vessels) • Lists the differential diagnosis of chronic ankle pain • Lists the x-ray findings of osteochondral defects • Lists the MRI findings of osteochondral defects and articular cartilage injury • Lists the etiologies of articular cartilage disorders (e.g., inflammatory, overuse, trauma, degenerative, tumor) • Demonstrates knowledge of the natural history of osteochondral defects and degenerative joint disease	• Demonstrate knowledge of non-operative treatment options (e.g., NSAIDs, activity modifications, physical therapy) • Demonstrates knowledge of lesion classification systems • Demonstrates knowledge of x-ray findings of intra-articular pathology (e.g., osteophytes, loose bodies, subchondral abnormalities) • Demonstrates knowledge of surgical indications • Demonstrates knowledge of the biomechanical and biologic considerations of cartilage repair to treat osteochondral lesions	• Demonstrates an understanding of imaging findings that influence treatment of lesions (e.g., depth, area, location, displacement, age) • Demonstrates an understanding of contributing factors that influence treatment (e.g., age, weight, ligamentous laxity, chronicity, foot alignment) • Understands the role of primary debridement, secondary restorative, and salvage procedures (e.g., microfracture, OATS/Allograft, ACI)	• Demonstrates knowledge of evolving treatment alternatives (e.g., embryonic cartilage) • Demonstrates ability to appraise and integrate recent literature into established fund of knowledge • Understands risks and complications associated with different surgical techniques (e.g., most common nerve injury, harvest site pain, cartilage injury, osteotomy nonunion) • Demonstrates knowledge of treatment alternatives for failed treatment of OCD lesion	• Discovers new knowledge in management of osteochondral lesion through research • Develops advanced rehabilitation protocols to accelerate return to activity through research
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Comments:				

Pes Cavus — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Obtains focused history to assess risk factors for disease development and deformity progression • Performs focused physical exam to assess associated/predisposing factors • Orders and interprets standing views of foot and ankle • Performs soft tissue balancing with supervision (e.g., tendon transfer, releases or lengthening) • Performs routine post-operative management	• Performs and interprets Coleman block test correctly • Characterizes alignment abnormality, soft tissue imbalances, and neurological deficits • Formulates patient-specific differential diagnosis for pes cavus • Orders all appropriate imaging studies, consults, and labs • Provides non-operative management (e.g., PT, orthotic, shoe wear modification, bracing, and activity modification) • Performs osteotomies and arthrodesis with supervision	• Interprets patient-specific information and findings with respect to treatment options (e.g., soft tissue correction, osteotomy, fusion) • Assesses and interprets efficacy of prescribed non-operative treatment • Formulates a pre-operative plan for surgery (e.g., exposure, implants, specific procedural goals with a plan to avoid pitfalls) • Performs osteotomies and arthrodesis with minimal supervision • Performs soft tissue balancing independently (e.g., tendon transfer, releases or lengthening) • Recognizes and treats minor complications • Manages and modifies post-operative management based on clinical circumstances	• Gathers and assesses all pertinent patient data for clinic decision-making • Performs routine deformity correction independently including osteotomies and arthrodesis • Recognizes and treats major complications of deformity correction	• Performs revision or complex pes cavus correction • Develops advanced treatment algorithms for pes cavus deformity management based on Level I or II outcome studies
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Comments:				

Pes Cavus — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
• Demonstrates knowledge of relevant anatomy and surgical exposures of the foot • Lists x-ray hallmarks of pes cavus (e.g., calcaneal pitch angle, depressed first ray, Meary's angle, calcaneocavus vs. cavovarus) • Demonstrates ability to measure hallmarks (e.g., HVA, IMA, DMAA, congruent vs. incongruent) • Lists the etiologies of cavus deformity (e.g., Charot-Marie-Tooth disease [CMT], polio, idiopathic) • Demonstrates knowledge of the natural history of pes cavus based on particular etiology • Demonstrates knowledge of normal gait kinematics	• Demonstrates knowledge of non-operative treatment (e.g., shoe wear modification, orthotics, PT, bracing, activity modification) • Demonstrates knowledge of interpreting findings on advanced imaging studies (e.g., arthritic changes, severity of deformity, metabolic disease, infection) • Describes the pathophysiology and progression of pes cavus with respect to contribution of individual musculotendinous imbalance • Demonstrates knowledge of abnormal gait pattern characteristic of pes cavus • Demonstrates knowledge of surgical indications	• Demonstrates understanding of radiographic findings that influence treatment (e.g., arthritis, bone quality/defect, limb malalignment, type and severity of deformity) • Demonstrates an understanding of factors that influence treatment (e.g., history of infection, comorbidities, fixed vs. flexible deformity, sensory neuropathy, soft tissue quality, social factors) • Distinguishes the indications and contraindications for arthrodesis, osteotomies, soft tissue balancing, and tendon transfers	• Demonstrates knowledge of evolving treatment alternatives • Demonstrates ability to appraise and integrate recent literature into established fund of knowledge • Masters principles of pes cavus correction • Demonstrates knowledge of complication management (e.g., dehiscence, infection, non-union/malunion, stress fracture, over/under correction)	• Discovers new knowledge in management of pes cavus through research
☐	☐	☐	☐	☐	☐	☐	☐	☐
Comments:				

Pes Planovalgus — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
• Obtains focused history to assess risk factors for disease development and deformity progression • Performs focused physical exam to assess associated/predisposing factors • Orders and interprets standing views of foot and ankle • Prescribes non-operative management (e.g., shoe wear modification, insoles, bracing, exercise) • Performs routine reconstruction with supervision (e.g., calcaneal osteotomy, tendon transfer, coalition resection, tendo-Achilles lengthening [TAL]/Strayer) • Performs post-operative management (e.g., exercise, insoles, bracing)	• Characterizes stage and severity of pes planovalgus by clinical and radiographic parameters • Orders advanced imaging and specialty views as indicated (e.g., CT, MRI, hindfoot alignment views) • Formulates patient-specific differential diagnosis for pes planovalgus • Assesses the outcomes of non-operative treatment (e.g., patient compliance, efficacy) • Provides patient education and obtains informed consent • Performs complex reconstruction with supervision	• Interprets patient-specific information and findings with respect to treatment options (e.g., non-operative, osteotomy, arthrodesis) • Formulates a pre-operative plan for surgery (e.g., exposure, implants, specific procedural goals with a plan to avoid pitfalls) • Performs simple reconstruction surgery with minimal supervision • Demonstrates ability to treat early minor post-operative complications (e.g., superficial infection, hardware failure) • Manages and modifies post-operative management based on clinical circumstances	• Gathers and assesses all pertinent patient data for clinical decision-making • Performs routine and complex reconstruction surgery independently • Demonstrates ability to treat major post-operative complications (e.g., recurrence, deep infection, stiffness, weakness, nerve injury, malunion, implant failure) • Performs complex revision pes planovalgus deformity surgery with minimal supervision	• Performs complex revision pes planovalgus deformity surgery independently (e.g., revision arthrodesis, adjunct corrective procedures) • Develops advanced treatment algorithms for pes planovalgus management based on Level I or II outcome studies
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Comments:				

Pes Planovalgus — Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
• Demonstrates knowledge of relevant anatomy and surgical exposures of the foot • Demonstrates ability to recognize clinical presentation of pes planovalgus deformity • Lists the x-ray hallmarks of pes planovalgus (e.g., arch collapse, midfoot abduction, pronation) • Demonstrates ability to measure hallmarks (e.g., talo-1st MT angle, talo-navicular coverage angle) • Lists the etiologies of pes planovalgus (e.g., posterior tibial dysfunction, spring ligament tear, tarsal coalition, post-traumatic) • Demonstrates knowledge of natural history of pes planovalgus deformity • Demonstrates knowledge of normal gait kinematics	• Demonstrates knowledge of pathophysiology of pes planovalgus and lists associated risk factors (e.g., accessory navicular, tight tendo-Achilles, ligamentous laxity, gender, age, obesity) • Demonstrates knowledge of staging pes planovalgus, and surgical options for each stage • Demonstrates knowledge of interpreting findings on advanced imaging studies to establish etiology of pes planovalgus • Demonstrates knowledge of non-operative treatment options (e.g., shoe wear modifications, insoles, bracing, exercise) • Demonstrates knowledge of surgical indications • Demonstrates knowledge of abnormal gait patterns characteristic of pes planovalgus	• Demonstrates understanding of other contributing factors that can influence choice of treatment (e.g., neuropathy, smoking, obesity, arthritis, age) • Demonstrates knowledge of biomechanical considerations of fixation options for osteotomy or arthrodesis • Expounds on surgical options for correction of flexible and rigid deformities, listing advantages and disadvantages • Demonstrates knowledge of impact of altered gait characteristic of pes planovalgus	• Demonstrates knowledge of evolving treatment alternatives (arthroereisis) • Demonstrates ability to appraise and integrate recent literature into established fund of knowledge, and articulates differing treatment philosophies • Demonstrates knowledge of complication management (e.g., recurrence, nerve injury, stiffness, dehiscence infection, malunion)	• Discovers new knowledge in management of pes planovalgus through research
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐				
Comments:				

Interprofessional Teams — Systems-based Practice				
Level 1	Level 2	Level 3	Level 4	Level 5
• Completes assigned documentation for patient care and safety	• Performs time-out, safety checklists, or other required activities to prevent adverse events • Oversees transfer of care from the operating room to an inpatient or outpatient setting	• Participates in quality improvement program or project • Participates in patient safety program or project	• Incorporates quality improvement and patient safety practices into clinical care activities	• Develops a quality improvement or patient safety imitative in the health care system
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐				
Comments:				

Use of technology to accomplish safe health care delivery — Systems-based Practice				
Level 1	Level 2	Level 3	Level 4	Level 5
• Demonstrates knowledge of Electronic Health Record (EHR) and Computerized Physician Order Entry (CPOE) in prevention of medical errors	• Appropriately and accurately enters patient data in EHR • Effectively uses EHR and CPOE to provide patient care	• Reconciles conflicting or inaccurate data in EHR • Enters only self-collected patient data • Verifies critical information updated by other providers before use in patient care (e.g. allergies, medications)	• Reports EHR system problems to reduce risk of medical errors	• Develops improvements for EHR use
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐				
Comments:				

Systems thinking, including cost-effective practice — Systems-based Practice				
Level 1	Level 2	Level 3	Level 4	Level 5
• Understands economic challenges of patient care in the health care system	• Understands the cost and value implications of care decisions on the patient and the health care system	• Weighs the balance between cost and quality in patient care decisions • Understands the use of evidence-based guidelines in patient care	• Incorporates evidence-based medicine in clinical care • Provides quality care in a cost-effective manner within the health care system	• Develops ways to better manage cost and quality concerns within the health care system
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐				
Comments:				

Locate, appraise, and assimilate evidence to improve patient care — Practice-based Learning and Improvement				
Level 1	Level 2	Level 3	Level 4	Level 5
• Describes basic concepts in epidemiology, biostatistics, and clinical reasoning • Categorizes the level of evidence of a clinical study	• Ranks study designs by level of evidence • Identifies bias affecting study validity • Formulates a question searchable in a literature database to inform a clinical care decision	• Applies a set of critical appraisal criteria to a body of clinical research to formulate an approach to clinical care • Critically evaluates information from non-research sources (e.g., professional colleagues, experts, industry, patients)	• Conducts a clinical practice that incorporates principles and basic practices of evidence-based medicine • Communicates evidence to patients and other providers supporting common practices	• Teaches and assesses evidence-based medicine • Develops innovative treatment methods based on peer-reviewed literature
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐				
Comments:				

Accountability and Responsibility — Professionalism				
Level 1	Level 2	Level 3	Level 4	Level 5
• Understands when assistance is needed, as well as the appropriateness of asking for help • Behaves in a manner respectful of oneself and others (e.g., punctuality, preparedness, appropriate attire, grooming) • Delivers patient care as a functional physician • Aware of the principles and concepts of personal and professional well-being (e.g., emotional, physical, and mental health, fatigue and sleep deprivation)	• Recognizes limits of personal knowledge and experience and asks for assistance • Demonstrates humility and respect towards patients and ancillary staff members • Demonstrates adequate management of personal and professional well-being	• Consistently recognizes limits of personal knowledge and experience and asks for assistance • Develops and implements a plan for the best possible patient care • Behaves and interacts with ancillary staff members to establish the best possible professional relationships • Optimizes individual performance by devotion to maintaining personal and professional well-being • Seeks or accepts assistance when necessary to maintain personal, emotional, physical, and mental health	• Mentors and models standards of personal and professional well-being to colleagues • Recognizes signs of impairment, and takes steps to address impairment in colleagues	• Develops organizational policies and education to support the principles of professionalism in the practice of medicine consistent with the American Academy of Orthopaedic Surgeons (AAOS) Standards of Professionalism
☐	☐	☐	☐	☐ ☐ ☐ ☐ ☐
Comments:				

Compassion, Integrity, and Respect for others — Professionalism				
Level 1	Level 2	Level 3	Level 4	Level 5
• Consistently demonstrates behavior that conveys caring, honesty, and genuine interest in patients and families • Recognizes the diversity in patient populations with respect to gender, age, race, culture, religion, disabilities, sexual orientation, and socioeconomic status • Recognizes the preeminence of providing care in the best interests of the patient, and demonstrates a commitment to this value	• Demonstrates an understanding of compassion, integrity, respect, sensitivity, and responsiveness while exhibiting these attitudes consistently in common and uncomplicated patient care situations • Consistently recognizes ethical issues in practice, and discusses, analyzes, and manages them in common and uncomplicated patient care situations	• Consistently recognizes ethical issues in practice, and discusses, analyzes, and manages them in complex and complicated patient care situations • Recognizes and appropriately manages personal beliefs and biases in providing patient care • Knowledgeable about beliefs, values, and practices of diverse patient populations and their impact on patient care • Recognizes ethical lapses in professional and patient aspects of medical care	• Develops and implements an integrated, coherent approach to working with others to provide effective and safe patient care • Integrates personal standards of behavior with professional standards in the practice of medicine • Consistently considers and manages ethical issues in practice • Consistently practices medicine in a manner that upholds the values and beliefs of the profession	• Demonstrates leadership and mentoring in the principles of professionalism • Manages ethical misconduct in patient care and medical practice
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Comments:				

Communication — Interpersonal and Communication Skills				
Level 1	Level 2	Level 3	Level 4	Level 5
• Communicates with patients about routine care • Understands the patient's and family's perspective, and demonstrates empathy and builds trust and rapport • Communicates effectively during transitions of care between providers	• Communicates effectively within the health care system • Exchanges detailed information effectively with other providers to coordinate care • Engages the patient and family in decisions about care • Able to obtain informed consent (e.g., discusses risks, benefits, alternatives, expectations) • Demonstrates comprehension of conflict resolution and appropriately utilizes chain of command • Teaches students, residents, and ancillary staff members in the cognitive apprentice model	• Coordinates care effectively within the system and among multiple providers or teams • Communicates effectively with the patient and family under difficult circumstances • Integrates the patient and family in decisions about care, incorporating personal/cultural values	• Communicates effectively with the patient and family under complex/adversial circumstances • Maintains cooperation and communication between providers and teams during complex and challenging circumstances • Prepares and delivers didactic presentations in a formal setting (e.g., grand rounds, conferences)	• Demonstrates leadership in systems-based communication activities • Engages in self-improvement to enhance communication skills • Teaches communication skills to other providers
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Comments:				

Teamwork – Interpersonal and Communication Skills				
Level 1	Level 2	Level 3	Level 4	Level 5
• Accepts role as member of the treatment team • Upholds decisions made by the team • Supports and respects all members of the team • Recognizes and communicates critical patient information in a timely and accurate manner to the team • Responds to requests for information and performs assigned tasks	• Accepts constructive feedback to serve the team better • Contributes personal knowledge and experience to improve team function • Participates actively in making team decisions • Properly supervises and teaches subordinate team members • Holds him- or herself accountable to the best interests of the team	• Leads the team and delegates responsibility to members • Provides constructive feedback to team members • Understands differences between feedback and formal evaluation, and responds to each appropriately • Directs the team decision-making process and patient care • Mentors subordinate team members • Provides appropriate autonomy to subordinate team members • Holds all team members accountable to the best interests of the team	• Maintains quality by addressing team errors and oversights • Facilitates team members to achieve their potential, and assists in remediation when appropriate • Resolves conflicts within the team fairly	• Seeks leadership opportunities with professional organizations
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Comments:				