About This Curriculum

- It is the responsibility of both the resident and the attending to go over the goals and guidelines included in this handbook
  - At the beginning of the rotation
  - At the conclusion of the rotation

- Additional materials and/or service handbooks may be provided by the attendings at the beginning of the rotation
The Ohio State University
Department of Orthopaedics
Orthopaedic Residency Program

Foot and Ankle Service Information

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Schedule

During the two month rotation, PGY-4 will spend two months with Dr. Alexander.

Dr Alexander
Monday: OR UHE, beginning at 7:00am
Tuesday: Clinic UHE
Wednesday: OR UHE, beginning at 7:00am
Thursday: Foot and ankle conference at 7:00am at Moorehouse followed by Clinic at UHE at 8:30
Friday: Sports Foot and Ankle Clinic at Morehouse sports medicine department 1:00 pm
Dileneation of Resident Responsibilities:  
Orthopaedic Foot and Ankle Service: PGY4

I. Resident Responsibilities for Patient Care

- **Rounding**  Attending rounds will be done daily at a time to be discussed between the resident and attending staff. If the attending is unable to round with the residents in the morning, residents are expected to have seen and written a complete detailed note on each patient prior to going the OR or clinic for the day. Consult patients will be followed based on acuity to be decided upon discussion between the attending staff and resident. Communication is mandatory with the inpatient and outpatient PCRM’s as needed. The P.A. will be used as needed to assist the resident staff with patient care.

- **Orders**  All orders will be done via the CAPI order entry system. There will be a standard order set for foot and ankle patients. Please use this set as it has been standardized for most of the post-operative needs for the foot and ankle patients. For inpatients, in most cases IV analgesics should be discontinued after the first 24 hours and post-op IV antibiotics after two doses.

- **Surgical patient care**  The resident should be familiar with the patients going to surgery and is responsible for performing all surgical patient’s H&Ps. It is also important that the resident be familiar with all surgical procedures being performed.

- **Imaging studies for surgery**  It is the resident’s responsibility to make sure that every patient going to surgery has all imaging studies, if they have been performed, available in the OR. The resident should have reviewed the studies and be knowledgeable about them before surgery. It is also the resident’s responsibility to make sure that the studies have been brought up on the monitor in the OR before scrubbing for the case.

- **Non-surgical admissions**  The attending physician or physician covering must be contacted relative to each new admission, as soon as possible after that patient is admitted to the floor. In infected patients it is the resident’s responsibility to be certain that necessary cultures are taken and **antibiotic administration (not just orders placed) initiated within 2 to 3 hours of hospital admission.** In almost all cases these patients should be, at a minimum, on bedrest with BRP (in some cases on strict bedrest) with the affected part elevated well above the heart. In the case of the foot or ankle this means toes above the nose.
• **Consults**  If you are called about a consult please call the attending immediately to inform him of the consult if you think there is any chance he may be unaware of it. This may seem extreme but if the attending is at the hospital when the consult is submitted, then leaves unaware of the consult and subsequently has to come back to see the patient this may result in significant inconvenience for the attending and delay in the patient being seen. Immediately after seeing the patient the resident should directly call the responsible attending.

• **Preferences**  All dressings should be changed on POD #1 if the patient is being discharge and POD #2 if they are not. Dressings are to be changed daily thereafter unless otherwise specified. Drains are left in place and the patient kept on IV antibiotics until output is less then 30cc per 24 hour shift. Weight bearing status and physical therapy orders should be discussed on a case-by-case basis. In general almost all bone and tendon procedures on the midfoot, hindfoot, and ankle will be NWB post op and the majority of forefoot procedures patients will be WBAT in a post op shoe. First MTP arthrodesis patients will be discharged in a stiff sole shoe and any patients with pins protruding from their toes will require a wooden shoe with a polypropylene toe guard. Post-op elevation of the operative limb such that the patient’s toes are above their nose is mandatory. All patients should maintain this posture 45 to 50 minutes of every hour. When patients are not recumbent with their leg elevated they should be encouraged to be mobile. Sitting in a chair should be discouraged unless it is mandatory for cardiopulmonary conditions.

• **Discharge**  The standard OSU mechanism of electronic discharge instructions is to be used at all times. This should be a detailed account of the patient’s care so the primary care physician who receives a faxed copy upon the patient’s discharge will understand the plan of care. If you don’t know the detailed plan, please ask. DO NOT DISCHARGE a patient without reviewing all laboratory values and radiographic studies first!

The discharge summary should be done as close as possible to the discharge date. This allows for easier recollection on the part of the resident for complicated patients. The discharge summary must include a complete history, pertinent physical exam, summary of care and reason for hospital admission. Use the EDI for specific follow-up information. This is the only way that rehabilitation hospitals sometimes are able to discern follow-up care.

Please try to have discharge orders written prior to 10 am whenever possible.

In general most inpatients are seen post-operatively 10 to 14 days after surgery unless you are told otherwise. Most outpatients will be seen in 24 to 48 hours. Pain medication is unique to each patient and should be discussed with the attending staff if you are unsure. Most inpatients should be discharged on Vicodin or Tylenol #3. Outpatients are generally prescribed Percocet 5/325
unless for some reason contraindicated. Pain medications should be sufficient for 2-3 weeks (30 with one refill).

- **Documentation** Please make sure daily notes are legible, in SOAP note format, and the detailed care plan for the day is outlined. This will save you many phone calls and will allow the ancillary caregivers to provide better care for the patient as well. Check all laboratory values for tests ordered in the post-op period and document the abnormal labs that need addressed in the care of the patient.

Residents are responsible for a thorough pre-operative history and physical exam and as well as a brief OP note describing the procedure. The attending physician will dictate the operative note unless he requests the resident do so. Any questions should be directed toward the attending staff.

All consults must document a COMPLETE history including a review of systems, past medical and surgical history, family history, allergies, medicines, and social history. The attending staffing the consult must be documented and a specific plan generated after discussion with the attending staff.

Many other questions will arise on an as needed basis. Constant communication between all members of the team is the best way to get an optimal educational experience and provide the best care possible for each patient.

II. **Resident Level of Responsibility for Patient Care**

Resident rotations are structured so that the residents have a one-on-one relationship with attendings. The level of responsibility given by the attending to the resident is determined by that attending, depending on the attendings’ assessment of the resident’s knowledge and skills, and the complexity of the procedure.

III. **Resident Supervision**

Attendings are responsible for the direct supervision of residents in both the clinic and the operating room, as well as in on-call situations. Attending physicians are available for consultation at all times.

The person ultimately responsible for the patient is the attending. The attending should be notified of any adverse change in a patient’s medical condition or vital signs, persistent pain that is not controlled with reasonable doses of analgesics, significant amounts of drainage from wounds, or of patients or patient’s family members that are upset about the care they are receiving. **The threshold to inform the attending of problems should be very low.**

Senior residents (PGY4 and above) are also directly responsible for the supervision of junior residents (PGY1, PGY2, and PGY3). This applies to all of
the above situations (i.e. on-call, in clinic, in the OR). Senior residents must be available for consultation at all times. Ultimately, chief residents (all PGY5’s) are responsible for the supervision of all residents, regardless of PGY year.

IV. Performance Feedback

Attending staff members on the foot and ankle service are available at any time if questions or concerns arise. At the end of each rotation, each attending on the service will evaluate each resident assigned to the service. A meeting should be scheduled at the conclusion of the rotation to discuss performance and provide written feedback on the rotation.
Goals and Objectives
Foot and Ankle Rotation – PGY3

I. Core Competency Areas

By the end of the PGY1 rotation in Foot and Ankle Surgery, the resident should demonstrate progress towards obtaining excellence in each of the following core competency areas.

Patient Care

1. Demonstration of caring and respectful behaviors when interacting with patients and families
2. Procurement of thorough, logical, and concise patient histories with an emphasis on the musculoskeletal system
3. Responsiveness to the individual needs of patients and their families
4. Performance of physical examinations that are accurate, comprehensive, and directed to patient’s problems. This applies to the clinic, emergency department, and in-patient settings.
5. Integration of medical facts and clinical data as the basis for diagnosis
6. Evaluation of risks, benefits, and alternative treatments
7. Formulation and carry out of a complete and effective treatment plan (operative and non-operative)
8. Counsel of patient and family in treatment procedure, options, and potential outcomes
9. Dissemination of education and services to the patient which are aimed at preventing treatment complications and maintaining health
10. Understanding of and performance of medical procedures related to treatment plan
11. Ability to work well with entire team of health care professionals and be involved in care of the patient

Medical Knowledge

1. Exhibition of a fund of medical knowledge that is up-to-date and ability to cite literature appropriately
2. Investigation of topics as needed for clinical assignments
3. Understanding and use of basic science principles as related to medical practice

Practice-Based Learning

1. Assessment of ones own patient management skills and ability to make appropriate changes in practice
2. Integration of evidence from scientific studies in the care of patient’s problems
3. Demonstration of knowledge of study designs and statistical methods in order to evaluate scientific studies
4. Usage of available information technology to obtain and manage information
5. Willingness to take time to educate students and other health care professionals

Interpersonal Skills

1. Fostering of a compassionate, therapeutic relationship with patients and their families
2. Ability to listen to patients and include them in treatment decisions
3. Ability to listen to information provided by other members of the health care team

Professionalism

1. Respectfulness of patient wishes and ability to provide adequate counseling, education, and informed consent instructions to patients
2. Demonstration of an ethically sound practice of medicine
3. Demonstration of sensitivity to cultural, age, gender, and disability issues among patients

Systems-Based Practice
1. Knowledge of how to provide cost-effective care
2. Willingness to advocate for patients within the health care system
3. Referral of patient to appropriate practitioners and agencies within the health care system
4. Accessing of consultants appropriately and use of their assistance in the management of ongoing care

II. Specialty Specific Knowledge

By the end of the PGY3 rotation in foot and ankle surgery, the resident should:

1. Understand the gross anatomy and histology of the normal foot
2. Understand the kinematics, kinetics, and wear characteristics of adult foot and ankle biomechanics.
3. Understand neuromuscular and neurologic diseases as they apply to the foot and ankle (i.e. ALS, CP, CVA, CMT, Diabetes Mellitus, Myelodysplasia, etc).
4. Understand localized entrapment neuropathies such as anterior tarsal tunnel, digital nerve compression, Morton’s neuroma, and sural nerve compression.
5. Understand circulatory disturbances such as arterial aneurysm, Distal arterial occlusive disease, lymphedema, and thrombosis.
6. Understand dermatologic and nail disorders of the nail and adjacent soft tissue
7. Understand common tumors of the foot and ankle such as giant cell tumors, fibroma, ganglion, lipoma, etc.
8. Understand infectious and noninfectious inflammatory disorders of the foot and ankle such as bursitis and plantar fascitis.
9. Understand the principles and complications of rheumatoid foot and ankle
10. Understand the examination, diagnosis, and evaluation of hallux valgus, hallux rigidus, hallux varus, and metatarsus primus varus.
11. Understand and identify the different types of forefoot and toe deformities
12. Understand gout and periarticular alterations such as calcific deposits, subtalar arthrodesis, metatarsal head resection, and ankle joint arthrodesis.
13. Understand and identify the different types of foot and ankle fractures and dislocations
14. Understand hindfoot pathology such as calcaneal spurs, fascitis, bursitis, Achilles tendonitis, varus, valgus of the heel.
15. Understand and identify stress fractures of the fibula, metatarsals, navicular, and tibia.
17. Understand the etiology and treatment of cavus foot
18. Understand the classification, roentgenographic evaluation, and treatment (both operative and non-operative) of flatfoot or pes planus.
19. Ligament reconstruction of the ankle.

III. Specialty Specific Psychomotor Skills

By the end of the PGY3 rotation in foot and ankle surgery, the resident should be able to:

1. Interpret plain radiographs, CAT scans, MR Imaging
2. Perform procedures related to the forefoot (i.e. partial matrixectomy, resection of tailor’s bunion, bunionectomy, removal of interdigital neuroma, hallux interphalangeal fusion with tendon transfer)
3. Perform procedures related to the rearfoot (i.e. triple arthrodesis, resection of Haglund’s deformity, tarsal tunnel release, plantar fascial stripping, Achilles tendon repair).
4. Perform procedures related to the ankle such as ankle arthroscopy, repair of OCD of the talus, and ankle fusion.
5. Perform amputations (i.e. digital disarticulation, Syme’s amputation, Lisfranc’s amputation, Chopart’s amputation, below knee amputation, calcanectomy.
6. Perform trauma procedures related to the foot and ankle (i.e. ORIF of displaced phalangeal fractures, ORIF of Lisfranc fracture dislocation, ORIF of talar fractures, etc.)
Goals and Objectives
Foot and Ankle Rotation – PGY4

I. Core Competency Areas

By the end of the PGY4 rotation in Foot and Ankle Surgery, the resident should demonstrate progress towards obtaining excellence in each of the following core competency areas.

Patient Care

1. Demonstration of caring and respectful behaviors when interacting with patients and families
2. Procurement of thorough, logical, and concise patient histories with an emphasis on the musculoskeletal system
3. Responsiveness to the individual needs of patients and their families
4. Performance of physical examinations that are accurate, comprehensive, and directed to patient’s problems. This applies to the clinic, emergency department, and in-patient settings.
5. Integration of medical facts and clinical data as the basis for diagnosis
6. Evaluation of risks, benefits, and alternative treatments
7. Formulation and carry out of a complete and effective treatment plan (operative and non-operative)
8. Counsel of patient and family in treatment procedure, options, and potential outcomes
9. Dissemination of education and services to the patient which are aimed at preventing treatment complications and maintaining health
10. Understanding of and performance of medical procedures related to treatment plan
11. Ability to work well with entire team of health care professionals and be involved in care of the patient

Medical Knowledge

1. Exhibition of a fund of medical knowledge that is up-to-date and ability to cite literature appropriately
2. Investigation of topics as needed for clinical assignments
3. Understanding and use of basic science principles as related to medical practice

Practice-Based Learning

1. Assessment of ones own patient management skills and ability to make appropriate changes in practice
2. Integration of evidence from scientific studies in the care of patient’s problems
3. Demonstration of knowledge of study designs and statistical methods in order to evaluate scientific studies
4. Usage of available information technology to obtain and manage information
5. Willingness to take time to educate students and other health care professionals

Interpersonal Skills

1. Fostering of a compassionate, therapeutic relationship with patients and their families
2. Ability to listen to patients and include them in treatment decisions
3. Ability to listen to information provided by other members of the health care team

Professionalism

1. Respectfulness of patient wishes and ability to provide adequate counseling, education, and informed consent instructions to patients
2. Demonstration of an ethically sound practice of medicine
3. Demonstration of sensitivity to cultural, age, gender, and disability issues among patients

Systems-Based Practice
1. Knowledge of how to provide cost-effective care
2. Willingness to advocate for patients within the health care system
3. Referral of patient to appropriate practitioners and agencies within the health care system
4. Accessing of consultants appropriately and use of their assistance in the management of ongoing care

II. Specialty Specific Knowledge

By the end of the PGY4 rotation in foot and ankle surgery, the resident should:

1. Understand the gross anatomy and histology of the normal foot
2. Understand adult foot and ankle biomechanics.
3. Understand plain radiographic views of the foot and ankle and the indications for CT, MRI and nuclear medicine scans and stress radiographs (as well as how to perform stress radiographs).
4. Understand neuromuscular and neurologic diseases as they apply to the foot and ankle (i.e. CP, CVA, CMT, Diabetes Mellitus, Myelodysplasia, etc).
5. Understand the musculoskeletal consequences of peripheral neuropathy, specifically the clinical signs of acute Charcot arthropathy and its immediate and definitive management.
6. Understand localized entrapment neuropathies such as tarsal tunnel, superficial peroneal nerve entrapment, and Morton’s neuroma.
7. Understand circulatory disturbances such as diabetes related peripheral vascular disease, lymphedema, and venous thromboembolic disease.
8. Understand disorders of the nail and adjacent soft tissue
9. Understand be able to radiographically identify the more common foot and ankle tumors such as giant cell tumors, ganglion, synovial cell sarcoma etc.
10. Understand investigation and treatment of infectious and noninfectious inflammatory disorders of the foot and ankle.
11. Understand the principles and complications of rheumatoid foot and ankle.
12. Understand the evaluation and treatment of hallux valgus, hallux rigidus, and hallux varus.
13. Understand the evaluation and treatment of toe deformities.
14. Understand the evaluation and treatment of metatarsalgia.
15. Understand and classify the more common types of foot and ankle fractures and dislocations
16. Understand hindfoot pathology such as calcaneal spurs, fascitis, bursitis, Achilles tendinosis, varus, valgus of the heel.
17. Understand and identify stress fractures of the fibula, metatarsals, navicular, and tibia.
18. Understand the etiology and treatment of cavus foot.
19. Understand the classification, roentgenographic evaluation, and treatment (both operative and non operative) pes planus.
20. Understand the treatment of tarsal coalition and residual clubfoot deformity in adults.
21. Understand ankle ligament injuries and their reconstruction

III. Specialty Specific Psychomotor Skills

By the end of the PGY4 rotation in foot and ankle surgery, the resident should be able to:

1. Interpret plain radiographs, CAT scans, MR Imaging
2. Perform procedures related to the forefoot (i.e. partial matrixectomy, resection of tailor’s bunion, hallux valgus correction, cheilectomy, first MTP arthrodesis, removal of interdigital neuroma, hallux interphalangeal fusion with tendon transfer)
3. Perform procedures related to the rearfoot (i.e. subtalar and triple arthrodesis, resection of Haglund’s deformity, tarsal tunnel decompression, plantar fascia release and excision, Achilles tendon repair and reconstruction).
4. Perform procedures related to the ankle (i.e. ankle arthroscopy, treatment of OCD of the talus, and ankle fusion and ankle ligament reconstruction).
5. Perform amputations (i.e. digital disarticulation, transmetatarsal amputation, below knee amputation)
Perform trauma procedures related to the foot and ankle (i.e. ORIF of displaced phalangeal fractures, ORIF of Lisfranc fracture dislocation, ORIF of tarsal and ankle fractures, etc.)
Physical Exam Competencies

Foot & Ankle Service: PGY3 and PGY4

☐ Footwear assessment:
  - Sole wear pattern

☐ Complete normal physical examination of the foot and ankle, including:
  - Assessment of gait
  - Inspection
  - Palpation
  - Range of motion, including:
    o Ankle dorsiflexion/plantarflexion
    o Subtalar inversion/eversion
    o Medial column mobility
    o Great toe motion: MTP and IP
    o Interphalangeal motion
  - Neurovascular assessment:
    o DP and PT pulse
    o Muscle testing as indicated

☐ Identify common foot deformities:
  - Bunions
  - Pes planus
  - Pes Cavus
  - Claw toe, Hammer toe, Mallet toe, Crossover toe
  - Bunionette
  - rockerbottom deformity

Special Tests:

☐ “Too many toes” sign
☐ Single and double limb heel rise test
☐ Toe / heel walking
☐ Semmes-Weinstein monofilament sensation testing
☐ Percussion test for tarsal tunnel syndrome
☐ Silfverskiold test (ankle dorsiflexion with knee flexed and knee extended)
☐ Toe-translation test (digital drawer) test
☐ Anterior drawer test
☐ Talar tilt test
☐ Syndesmotic squeeze test
☐ External rotation stress test
- Forefoot compression (Mulder’s click)
- Heel squeeze test
- Thompson test
- Coleman block test
- Homan’s sign
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Surgical Competencies  
Foot & Ankle Service: PGY3  

By the end of the PGY3 rotation in foot & ankle, the resident should be able to perform the following procedures:

Amputations:
- Toe amputation
- Transmetatarsal amputation
- Below knee amputation
- Above knee amputation

First ray procedures:
- Partial and total nail ablation
- IP and first MTP arthrodesis
- Chevron osteotomy
- Modified McBride procedure
- Proximal MT osteotomy for angular correction

Lesser ray procedures:
- Lesser toe IP arthrodesis
- Resection of head of proximal phalanx
- Girglestone-Taylor flexor tendon transfer
- Weil osteotomy for MT shortening
- MT head condylectomy
- 5th MT osteotomy for bunionette correction
- ORIF of MT fractures

Midfoot procedures:
- LisFranc injury fixation
- ORIF of Jones fracture

Hindfoot procedures:
- Achilles tendon debridement
- Plantar fascia release
- Subtalar arthrodesis
- Gastroc slide (Strayer procedure)

Ankle procedures:
- ORIF of bimalleolar fracture
- Ankle arthroscopy for simple debridement
Brostrom ankle ligament reconstruction

Miscellaneous procedures:
  Harvest of iliac crest bone graft
  Harvest of proximal and distal tibial bone graft
  Harvest of calcaneal bone graft
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Surgical Competencies
Foot & Ankle Service: PGY4

In addition to the surgical competencies indicated for the PGY3 rotation in foot & ankle, by the end of PGY4 rotation in foot & ankle, the resident should be able to perform the following procedures:

Forefoot procedures:
  - Rheumatoid forefoot reconstruction
  - Multiple MT osteotomies for cavus foot reconstruction

Midfoot procedures
  - Midfoot arthrodesis
  - ORIF of complex midfoot fractures and dislocations

Hindfoot procedures:
  - ORIF of calcaneal, talar, and navicular fractures
  - Naviculocuneiform, talonavicular, and triple arthrodesis
  - Achilles tendon reconstruction with FHL transfer
  - Correction of pes planus
  - Correction of pes cavus

Ankle procedures:
  - ORIF of trimalleolar and pilon fractures
  - Ankle arthrodesis techniques
  - Ankle arthroscopy for debridement of osteochondral lesions of the talus
  - Ankle arthroscopy for debridement of tibial and talar osteophytes
  - Repair for subluxating peroneal tendons
  - Peroneal tendon debridement and reconstruction for tendinosis
  - Tibialis posterior tendon reconstruction with FDL transfer for tendinosis
  - Complex repair with tendon weave for recurrent ankle instability
  - Tendon transfers for drop foot and other paralysis
The following list is the subject matter, in sequence, for the one-on-one discussion between the PGY-4 foot and ankle resident and the attending.

These sessions will be structured in a manner that will use the Socratic method of teaching so some basic preparation would likely be helpful. The purpose of these sessions is to ensure that the resident has a basic understanding of foot and ankle problems and to provide the resident an opportunity to discuss the practical aspects of managing problems within each categories (i.e. developing practical treatment algorithms for use in everyday practice).

1. Surgical approaches, nerve injuries and entrapments and CRPS
2. Common forefoot problems
3. Midfoot, hindfoot, ankle osteoarthritis and osteochondral injuries
4. Pes planus, pes cavus
5. Tendon disorders – tibialis posterior, peroneal, and achilles tendonosis and rupture
6. Foot and ankle injuries - fractures, dislocations, sprains and chronic instability
7. Orthoses and prostheses